

Harry S Truman National Historic Site Truman Farm



Cultural Landscape Report Historic Structure Report & Environmental Assessment

1, Dec, 2013

EXECUTIVE SUMMARY

The Cultural Landscape Report, Historic Structures Report, and Environmental Assessment (CLR/HSR/EA) presents a comprehensive planning document for the historic Truman Farm, located within the Harry S Truman National Historic Site (HSTR) in Grandview, Missouri. The CLR/HSR/EA identifies characteristics and features that convey the historic significance and character of the Truman Farm, and provides a holistic and integrated plan for the long-term preservation and stewardship of the historic built and landscape features.

The intent of this combined CLR/HSR/EA is to document the history of and recommend treatment for extant cultural resources at the property. The report provides park managers with a comprehensive understanding of the physical evolution of the cultural resources as well as guidance for their management. The resources include archeological remnants, historic landscape features, and three historic buildings: the Farm Home, the Garage, and the Poultry House. Documentation of historic significance and evaluation of integrity of the cultural landscape and associated buildings provides the framework upon which treatment recommendations are based. An investigation and evaluation has been conducted using National Register of Historic Places (NRHP or national register) guidelines and forms the body of this report.

The Harry S Truman Farm was conveyed from Jackson County, Missouri to the National Park Service on April 15, 1994. The 5.26 acre site had previously been maintained jointly by the Harry S Truman Farm Foundation and Jackson County. When the foundation and the county purchased the Truman Farm from

the Truman family in 1983, a restoration project was begun on the Farm Home to return it to its appearance during Harry S Truman's time of residence from 1906 to 1917. In 1978, the Farm Home was listed on the National Register of Historic Places, and in 1985 the property became a National Historic Landmark (NHL). In December of 1993, Public Law 103-184 enacted by the United States Congress added the Truman Farm to the Harry S Truman National Historic Site, which includes properties in Independence, Missouri.

The Truman Farm's contributing features are in need of varying levels of repair to mitigate the conditions and deterioration that threaten their longevity. Limited visitor access to the structures is also a current issue. If an informed, comprehensive plan for the cultural landscape and historic buildings and structures is not developed and implemented, the growing list of deferred maintenance may compromise the historic integrity of the resources over time, diminishing the resources' interpretive value and the visitor experience.

The CLR/HSR/EA will be used to support the park's General Management Plan Amendment, Long Range Interpretive Plan, and associated compliance as required by the National Historic Preservation Act (NHPA) of 1966, as amended, and by the National Environmental Policy Act (NEPA) of 1969, as amended. It will also be used to guide any additional future landscape and structural treatments beyond the initial treatments discussed in the CLR/HSR/EA. Used in concert, the three documents will guide future management of the property's resources.

During the Value Analysis/Choosing By

Advantages (VA/CBA) work session held in July 2012, Alternative 2: Farm, City, Nation, was chosen as the preferred alternative.

The preferred alternative proposes to convey the broad story of Harry S Truman including his character and the influence he had on agriculture, commerce, and politics from his early years through his presidency and after he left office. It proposes telling this story through the rehabilitation of the family farm, and the interpretation of the setting and surroundings that influenced and formed the character of Harry Truman.

The preferred alternative follows a rehabilitation approach. Treatment recommendations propose rehabilitating the cultural landscape, buildings and structures by allowing compatible uses, and by recommending repairs, alterations, or additions to the property. At the same time, treatment recommendations include preserving those features that convey the historical, cultural, and architectural values of the Truman Farm.

The preferred alternative allows for the greatest interpretation to tell the story of how the community and farm influenced the future president and later how President Truman influenced the community, the farm, and on the nation after his presidency. It also allows the property to be relevant to today's visitor through the development of authentic tactile, sensory, and kinetic experiences.

TABLE OF CONTENTS

Executive Summary	i
Table of Contents	iii
Project Team	vii
Location Map.....	ix
 Chapter 1: Introduction	1-1
Overview of the Report	1-1
Purpose and Need for the Project	1-1
Project Objectives.....	1-2
Scope of the Report.....	1-2
Methodology	1-4
History	1-4
CLR	1-4
HSR.....	1-5
EA.....	1-6
Park Purpose/Significance	1-7
Names, Numbers and Location Data	1-7
Management.....	1-9
Related Planning Documents	1-15
Description of the Study Area	1-17
Documentation Recommendations and Future Studies	1-19
Environmental Assessment Impact Topics	1-19
Impact Topics	1-20
Impact Topics Dismissed from Further Consideration.....	1-23
 Chapter 2: History	2-1
Introduction	2-1
History Summary	2-1
Historic Context	2-1
Statement of Significance	2-13
Period of Significance	2-13
Periods of Landscape Development.....	2-15
Pre-History (pre-1856)	2-17
Young Farm (1844 to 1905).....	2-19
Harry S Truman Farm (1906 to 1917)	2-23
Martha Ellen and Mary Jane Truman Farm (1917 to 1940).....	2-35
Farm foreclosure and repurchase (1941 to 1955)	2-41
Truman Corners Development and Selling the Farm (1955 to 1965)	2-45
Modern Day (1965 to present)	2-49

Chapter 3: Existing Conditions and Analysis	3-1
Introduction.....	3-1
Cultural Landscape.....	3-1
Assessment of Integrity	3-2
Contributing Features	3-5
Natural Systems and Features	3-11
Archeological Sites	3-15
Land Use.....	3-19
Spatial Organization.....	3-23
Topography and Landform.....	3-29
Views and Vistas	3-33
Circulation.....	3-37
Small Scale Features	3-43
Vegetation	3-57
Site Utilities	3-67
Buildings	3-79
Overview	3-79
Adjacent Buildings	3-81
Non-extant Structures.....	3-81
Buildings Existing Conditions and Conditions Assessments	3-87
Farm Home.....	3-91
Sequence of Alterations.....	3-93
Farm Home HABS Drawings	3-93
Existing Conditions	3-127
Condition Assessment	3-155
Contributing Features.....	3-163
Garage.....	3-164
Existing Conditions	3-168
Condition Assessment	3-175
Contributing Features.....	3-177
Poultry House.....	3-178
Existing Conditions	3-182
Condition Assessment	3-185
Contributing Features.....	3-186
Chapter 4: Affected Environment	4-1
Environmental Context and Natural Systems.....	4-1
Historic Structures and Cultural Landscapes	4-1
Archeological Resources	4-1
Vegetation.....	4-1
Visitor Experience.....	4-2
Park Operations.....	4-2
Visual Resources	4-2

Chapter 5: Treatment	5-1
Overview	5-1
Chapter Organization	5-1
No Action Alternative.....	5-1
Goals and Objectives Common to All Action Alternatives	5-2
Treatment Common to All Action Alternatives.....	5-3
Recommended Treatment: Alternative 2 (Preferred Alternative)	5-5
General	5-5
Archeological Sites	5-11
Spatial Organization.....	5-13
Topography and Landform.....	5-15
Views and Vistas	5-17
Circulation	5-19
Small Scale Features	5-21
Vegetation	5-25
Site Utilities	5-26
Buildings.....	5-27
Farm Home.....	5-27
Architecture	5-27
Structural	5-30
Mechanical.....	5-31
Electrical.....	5-32
Hazardous Materials.....	5-34
Garage.....	5-35
Architecture	5-35
Structural	5-36
Mechanical.....	5-37
Electrical.....	5-37
Hazardous Materials.....	5-37
Poultry House.....	5-39
Other Action Alternatives: Alternative 1, 3a, and 3b	5-45
Alternative 1	5-45
Alternative 3a	5-49
Alternative 3b	5-53
Alternatives Comparison	5-58
Mitigation	5-61
Environmentally Preferable Alternative	5-63
Impact Summary.....	5-64
 Chapter 6: Impacts from Treatment Alternatives and Environmental Consequences	
Introduction.....	6-1
General Methods	6-1
Cumulative Effects.....	6-2
Impacts to Cultural Resources and Section 106 of the NHPA.....	6-3
Historic Structures/Cultural Landscapes.....	6-4
Archeological Resources.....	6-8
Vegetation	6-12
Visitor Experience	6-16
Park Operations	6-19
Visual Resources	6-22

Chapter 7: Project Phasing 7-1

APPENDICES

Appendix A: Bibliography..... A-1
Appendix B: Glossary of Terms B-1
Appendix C: List of Technical Reviewers..... C-1
Appendix D: Consultation and Coordination Documents..... D-1
Appendix E: Material Analysis Reports..... E-1
Appendix F: Preferred Alternative Cost Estimate F-1
Appendix G: Site Utility Plan G-1
Appendix H: 1998 HABS Drawings H-1
Appendix I: 1983 John A. Huffman Drawings I-1
Appendix J: Lead Based Paint Sample Locations..... J-1
Appendix K: Value Analysis Report K-1

FINDING OF NO SIGNIFICANT IMPACT (FONSI)

PROJECT TEAM

NPS Midwest Regional Office Staff

Chief of Historic Architecture and Landscapes	Bill Harlow
Historical Landscape Architect	Marla McEnaney
Historical Architect	Al O'Bright
Landscape Historian	Dan Jackson

Harry S Truman National Historic Site, Truman Farm Staff National Park Service

Park Superintendent	Larry Villalva
Museum Curator	Carol Dage
Facilities Operation Specialist	Greg Wolcott
Chief of Interpretation and Visitor Services	Mike Ryan
Woodcrafter	Lewis McKarnin

State Historic Preservation Office, Missouri Department of Natural Resources

Officer	Judith Deel
---------	-------------

Anderson Hallas Architects, PC Architects (Prime)

Principal	Nanon Adair Anderson, AIA, LEED AP
Principal/Project Manager	Elizabeth Hallas, AIA, LEED AP
Intern	Adrienne Antonucci

Mundus Bishop Design Inc., Landscape Architects

Principal, Historical Landscape Architect	Tina Bishop, RLA, ASLA
Landscape Designer, Planner	Shelby Scharen, ASLA

360 Engineering, Mechanical Engineers

Mechanical Engineer	Denise Dihle, PE
---------------------	------------------

Architectural Engineering Design Group, Electrical Engineers

Electrical Engineer	Jon Brooks, PE
---------------------	----------------

Martin/Martin Consulting Engineers, Structural & Civil Engineers

Structural Engineer	Paul Doak, PE
Civil Engineer	Mark Thornbrough, PE

ERO Resources Corporation, Environmental Compliance

Principal	Mary Powell
Natural Resource Specialist	Moneka Worah

Landmark Environmental, Inc., Environmental Engineers

Environmental Engineer	Matt Roberts
------------------------	--------------

Cultural Resource Planning, Historian

Principal	Jill Seyfarth
-----------	---------------

ARC, Inc., Cost Estimating

Cost Estimator	Chris Squadra
----------------	---------------

Materials Sample Testing Analysis of Paint, Plaster and Mortar Samples

Conservator	David Arbogast
-------------	----------------



Location of Truman Farm, Harry S Truman National Historic Site, Grandview Unit, Grandview, MO. Dashed line represents the National Historic Landmark (NHL) boundary, solid line represents the Truman Farm National Historic Site (NHS) boundary.
(Source: Google Earth Image and MBD, 8/17/2012)

Chapter 1. Introduction

OVERVIEW OF THE REPORT

This document presents the comprehensive Cultural Landscape Report (CLR), Historic Structures Report (HSR), and Environmental Assessment (EA) for the Truman Farm (Grandview Unit) of the Harry S Truman National Historic Site.

The National Park Service (NPS) funded these documents in 2011 to guide the park management decisions at this property.

PURPOSE & NEED FOR THE PROJECT

Project Purpose

The purpose of this project is to protect the Truman Farm as President Harry S Truman's historic family farm and agrarian landscape, which shaped his life and influenced his work ethic and character. This project will provide for the long-term stewardship of the Truman Farm for the enjoyment of current visitors and future generations by improving cultural resource protection, and providing a cohesive, unified visitor experience.

Documenting the condition and development of the Truman Farm—including its buildings, structures, and landscape—and providing written guidance for preserving those qualities that best convey the historical significance and association with President Truman is a critical first step in resource stewardship. This project will provide guidance on integrating visitor, administrative, and maintenance facilities within the cultural landscape to provide a comprehensive and authentic experience. There is a need to enhance the integrity of the historic landscape and to provide for visitor amenities at the Truman Farm.

Project Need

This project documents and addresses deficiencies in the condition of the buildings, structures, and landscape features of the Truman Farm. These deficiencies include needed repairs to the Farm Home, including the foundation, drainage, and humidity control. The project is also needed to address the discrepancies in the appearance of the property as it currently provides a confusing interpretation of President Truman's association with his family's farm. Examples of this include the appearance of the Farm Home—the interior is almost exclusively newer finishes installed prior to the NPS's ownership, the exterior is in need of repair, and portions of the house were removed to evoke a time period not representative of the full site. The building treatment and appearance of the landscape to the period of significance is not consistent. In addition, historic features have been removed from the property, and non-historic features, such as a smokehouse, have been added. The proposed project is needed to preserve the historically significant Farm Home, structures and landscape features that convey its agrarian sense of place, as well as to address the changes in the surrounding land uses, and to accommodate the needs of visitors. The Truman Farm has been greatly impacted by adjacent commercial development, particularly on the north side of the property. The relationship and views between the property and its surroundings must be enhanced to adequately convey the life of Harry S Truman when he lived at the farm and his influence on later modifications over the years. Other issues include the need to provide visitor orientation, currently located in the Farm Home, and to improve

interpretation of the historic landscape site to maximize visitor experience and provide visitors with a more meaningful understanding of Harry S Truman.

PROJECT OBJECTIVES

The CLR/HSR/EA identifies buildings and landscape characteristics and features that convey the historical significance and character of the property, and provides a holistic and integrated plan for long-term preservation and stewardship of the cultural landscape and buildings. This report addresses the following objectives.

- Document the development of the Truman Farm from its beginnings as the Solomon Young farm, Harry S Truman's maternal grandfather, through present day.
- Identify measures to better articulate the extent of the historic farm, and to protect the property from surrounding development and growth from both a physical and visual standpoint.
- Document and analyze the existing condition of the Farm Home, structures, foundations, visible remnants, and landscape characteristics/features of the Truman Farm. This includes analyzing structural integrity, utilities, finishes, materials and features, documenting threats or other potential impacts to the NHL status, and providing recommendations for repair or treatment.
- Develop a series of treatment (action and no action) alternatives to provide for the long-term stewardship of the Truman Farm with specific recommendations for preservation, and for repair or improvements for extant features for the property including vegetation and views.
- Identify opportunities for providing universal accessibility throughout the entire property.

SCOPE OF THE REPORT

Combined Reports

The CLR/HSR/EA is the primary document used to guide management and stewardship of the cultural landscape and its buildings, and to inform treatment and maintenance of the grounds and buildings associated with the Truman Farm.

Treatment recommendations provide guidance for:

1. Routine and deferred maintenance;
2. Recommendations for preservation, repair, and rehabilitation; and,
3. Remedies for code deficiencies associated with ABAAS compliance, utility upgrades, and fire and life safety issues.

The intent of the combined CLR/HSR/EA is to provide a holistic and integrated plan that addresses operational needs while also recognizing that the mission of the NPS is to provide a rich and authentic visitor experience, and to ensure that long-term preservation and stewardship objectives are met to the maximum extent practicable.

Cultural Landscape Report

This document presents the Cultural Landscape Report (CLR) for the Truman Farm, including detailed documentation of the Truman Farm's historical development, evaluation of its existing conditions (good, fair and poor), analysis and evaluation of landscape characteristics, and preparation of treatment recommendations.

The CLR builds upon the numerous studies, investigations, and documents that exist for the Truman Farm as a significant component of the Harry S Truman National Historic Site. Of particular importance to the CLR are the 1983 Archeological Survey and Testing

report¹ the 1984 National Historic Landmark nomination that led to the designation of the site as an NHL in 1985 (1985 NHL),² the 1999 General Management Plan (1999 GMPA),³ and the 2010 Cultural Landscape Inventory (2010 CLI).⁴

Historic Structure Report

The HSR documents the existing condition and provides an assessment of the three contributing buildings.

- The Truman Farm Home (Farm Home)
- The Truman Farm Garage (Garage)
- The Truman Farm Poultry House (Poultry House)

Three structures currently exist on site, but were previously determined to be non-contributing and are not included in the HSR. These include the Privy, the NPS Maintenance Shed and the Smokehouse. Similarly, the building on Tract 3 was not included in the HSR scope. However, the treatment alternatives address, in a general nature, pedestrian connections, universal access, and visitor wayfinding.

The HSR evaluates the existing conditions of each contributing building and assigns a condition rating of good, fair, or poor to inform the treatment alternatives.

Environmental Assessment Report

The EA has been prepared to evaluate potential effects on environmental,

socioeconomic, and cultural resources through the proposed treatment alternative (preferred alternative), two other treatment alternatives, and a no action alternative.

The EA provides the decision-making framework that:

- 1) analyzes a reasonable range of alternatives to meet objectives of the proposal,
- 2) evaluates potential issues and impacts to the park's resources and values, and,
- 3) identifies mitigation measures to lessen the degree or extent of these impacts.

Impact topics evaluated in detail in this EA are historic structures and cultural landscapes, archeological resources, visual resources, visitor experience, public health and safety, and park operations. Some impact topics were dismissed because the project would result in no more than minor effects. No major effects were identified. The public, regulatory agencies, and other stakeholders have an opportunity to comment on this CLR/HSR/EA. Comments received will be considered in the final evaluation of effects.

1 Bray, Robert T. *Archaeological Survey and Testing at the Truman Farm Home and Grounds, Grandview, Missouri*. Kansas City: 1983.

2 *National Register of Historic Places Inventory –Nomination Form, Harry S Truman Farm Home*. Missouri: National Park Service, 1984.

3 National Park Service, U.S. Department of the Interior. *General Management Plan for Harry S Truman National Historic Site*. Independence: National Park Service, 1999.

4 National Park Service, U.S. Department of the Interior. *Cultural Landscapes Inventory, Truman Farm, Harry S Truman National Historic Site*. Missouri: National Park Service, 2010.

METHODOLOGY

History Methodology

The primary goals of the history are to provide accurate historical information in the form of a historic context and to clarify the evolution of the buildings and landscape. The general methods include a review of existing literature, interviews with local historical experts, and on-site inspection. This project benefitted from a readily accessible database of primary and secondary sources, located at the Harry S. Truman Presidential Library and Museum. The Midwest Genealogical Center, located in Independence, also has an unusually comprehensive collection of primary and secondary sources. The archivist at the Jackson County Historical Society offered advice regarding sources on local history. Research in Missouri focused on the sources available at the Truman Library and the Genealogical Center. The administrative office files of the Harry S Truman National Historic Site (HSTR) also contained useful information. The available primary materials helped in assessing the accuracy of the existing literature.

Since the property is associated with a revered former United States President, a number of books and articles have been written that include historical information about his time at the Truman Farm. Research focused on selecting the resources that were the most pertinent to the farm property. The NPS's historic resource survey of Truman-related properties, "Farm Roots and Family Ties," and the cultural landscape inventory completed in 2010, were particularly useful.

The research, coupled with on-site investigations, verified the accuracy of previous work and uncovered new information about the Truman family and their involvement with the property

through 1965. Other newly discovered information connected the Garage to a barbershop in Grandview, and provided details of a sale of 200 acres in 1922.

Cultural Landscape Report

Methodology

The CLR is conducted at a thorough level of investigation and documentation for historical research, existing condition assessment, landscape analysis, and treatment recommendations. The thorough level research methodology, as defined by the NPS focuses on the use of select documentation of known and presumed relevance, including primary and secondary sources that are easily available.⁵

The thorough level existing conditions investigation for the Truman Farm is conducted according to best practices. A review of readily available documentation was undertaken, and included information from the Harry S Truman National Historic Site (HSTR), the National Park Service's Midwest Regional Office (NPS-MWRO), and the Harry S. Truman Presidential Library and Museum. This review included planning documents, administrative reports, technical reports, natural resource studies, and correspondence. Review of historical documentation included the NRHP and NHL nominations for the Truman Farm, and for the Harry S Truman National Historic Site, and historic drawings, photographs, and correspondence available from primary and secondary sources. Archival research was undertaken at the Harry S. Truman Presidential Library and Museum in Independence, Missouri, and included documentation just released in late 2011, which had previously been unavailable.

⁵ Page, Robert R., Cathy A. Gilbert, and Susan A. Dolan. 1998. *A Guide to Cultural Landscape Reports: Contents, Processes and Techniques*. Washington D.C.: National Park Service.

This documentation provided important insight into President Truman's involvement with the Truman Farm through the 1960s.

Background information provided by the HSTR and NPS-MWRO, and the improvement and topographic survey undertaken for this project were used to prepare the CLR drawings. Site investigations occurred in December 2011 to document the existing conditions of the Truman Farm grounds. Archeological research included review of previous archeological investigations performed within the Truman Farm, most notably those undertaken by Robert Bray in 1983. Site investigations for the CLR did not include archeological techniques to locate buried ruins or artifacts.

Historic Structure Report Methodology

The Historic Structure Report (HSR) presents documentary, graphic and physical information for the three extant contributing buildings within the Harry S Truman Farm property, including the Farm Home, Garage and Poultry House. Primary historic documents (original drawings, rehabilitation drawings, historic photographs, letters to Bess Truman, historic maps, and other historic documentation), Historic American Building Survey (HABS) drawings (reference number 492/117554 in file at the DSC), park maintenance records, material testing and site investigations were analyzed to compile the record of each structure's development, historic alterations and current condition. Very limited destructive testing (paint and mortar sampling) was performed. The process utilized a multidisciplinary approach to more fully understand each building and its alterations. The disciplines included architectural, mechanical, electrical, structural and hazardous materials experts. These

disciplines reflect the key areas and issues addressed. Coordination with the site aspects – both landscape and civil – occurred throughout the research process.

Significant dates or periods of construction were established to document features and to determine the relative significance of each feature to the building and of each building within the Truman Farm. Where physical evidence did not support historic documentation and where historic records themselves were inconsistent, findings were documented to establish a baseline for future research.

Existing Condition

A brief physical description of each contributing building precedes a description of the individual building features and includes information such as massing, form, orientation, materiality and general plan layout. Field observations contributed to descriptions of each extant feature and attendant condition rating. In addition to field observations, thirteen material samples were obtained and tested to determine species of wood through wood floor testing, historic paint colors and mortar and plaster composition. Results are included in Appendix E. Features observed by discipline include the following as applicable by building:

Architecture: roof, gutters and downspouts, chimneys, exterior walls, exterior trim, porches, windows, doors, wall finishes, ceiling finishes, interior trim, floor, stairs, code/life safety and accessibility.

Structure: foundation, floor framing, roof framing, ceiling framing, wall framing, lateral system and load requirements.

Mechanical Systems: plumbing systems, HVAC and fire protection systems

Electrical Systems: infrastructure, branch circuits, general power outlets and equipment, lighting systems, telecommunications, fire alarm and security system and lightning protection.

Hazardous Materials: asbestos, lead containing paint and lead dust, lead in soils and mold.

Condition Assessment

Each feature was evaluated and an attendant condition rating determined. A general building condition assessment is presented first, followed by the condition assessment and ratings of each feature or component.

A list of the Contributing Features — those characteristics that embody each structure's special and notable qualities — follow the description of physical features. Mass and form, layout of spaces, exterior materials, openings and interior materials are included where applicable.

Treatment Alternatives

In Chapter 5 the treatment alternatives and associated impacts are discussed. Of benefit to the CLR/HSR's development was the Value Analysis/Choosing by Advantages (VA/CBA) meeting, held in the park in July 2012. The purpose of the VA/CBA was to facilitate the project's scoping process and to identify appropriate treatments within the context of the park's current and future ability to perform the work. A preferred alternative was identified which allowed the Ultimate Treatment and Use section to be tailored to it specifically. The proposed use and visitor access opportunity for each structure in conjunction with the condition assessment guides the feature by feature work recommendation for specific materials.

Environmental Assessment Report Methodology

The EA has been prepared in compliance with the National Environmental Policy Act (NEPA) of 1969 and implementing regulations at 40 CFR Parts 1500-1508, Department of the Interior regulations for NEPA at 43 CFR 46, and National Park Service Director's Order (DO) – 12 and Handbook, Conservation Planning, Environmental Impact Analysis, and Decision-making. In addition, this EA was prepared in compliance with the requirements of section 106 of the National Historic Preservation Act (NHPA), in accordance with the Advisory Council on Historic Preservation's (ACHP) regulations implementing section 106 (36 CFR Part 800.8, Coordination with the National Environmental Policy Act).

PURPOSE AND SIGNIFICANCE OF HARRY S TRUMAN NATIONAL HISTORIC SITE

The Harry S Truman National Historic Site was authorized by an act of Congress on May 23, 1983 (Public Law 98-32). The Truman Farm was authorized for acquisition by the U.S. Congress on December 14, 1993. The Truman Farm is significant because of its association with Harry S Truman, President of the United States from 1945 to 1953.

The character Harry S Truman displayed as U.S. President at a great turning point in world history was grounded in his relationships with family, friends, and community. Although other sites interpret the lives of American presidents, none encompass the physical context and broad life experiences of a president from his formative years through his retirement.

The purposes, significance, and mission goals of the park, as outlined in the 2000 Long Range Interpretive Plan (2000 LRIP), underlie how the site is managed.

The purpose of the Harry S Truman National Historic Site is to preserve and interpret President Truman's home and three related homes in Independence, Missouri and the Truman Farm in Grandview, Missouri including all related artifacts, and to interpret President Truman's life in both communities.

Names, Numbers & Location Data

The summary table on the next page lists the three buildings and landscape features included in the CLR/HSR/EA with their corresponding names, numbers, and location data. Use of the Facility Management System Software (FMSS) number, the List of Classified Structures identifying number (LCS ID), and the feature name are the best means for identifying the structures within the NPS. The common/feature name is used throughout the CLR/HSR/EA document.

Historic Structure & Cultural Landscape Report Data⁶

Common/ Feature Name	Year Built	FMSS Name	FMSS #	LCS Name	LCS #	ID LCS #	Feature ID #	Current Use in 2012
Farm Home	1894- 1895	Truman Farm Home	71788	Truman, Harry S, Farm Home	TF01	70144	140412	Seasonal Tours
Garage		Farm Home Garage	71995	Farm Home Garage	TF02	70145	140410	Storage
Poultry House		Farm Home Poultry House	81696	Farm Home Poultry House	TF03	70146	140414	Vacant
Truman Farm Smokehouse		Farm Home Smokehouse	81697		TF07			
Truman Farm Privy		Farm Home Privy	81698		TF08			
Stone Posts		Farm Home Stone Posts	41437	Farm Home Stone Posts	TF04	70147	140420	
Truman Farm Pin Oak Plaque		Farm Home Pin Oak Plaque	45592	Farm Home Pin Oak Plaque	TF06	70149	140424	
Truman Farm Flagpole							140616	
Interpretive Waysides							140618	
Entrance Sign							140620	
Hayrake							140622	
Boundary Fence							140760	
Entrance Drive & Parking Area							140600	
Paved Walkways							140602	
Truman Farm Barn Foundation		Farm Home Barn Foundation	93570	318701	TF09		140428	

⁶ FMSS (Facility Management Software System) is a numbering and naming convention used within the park for everyday maintenance issues. LCS (List of Classified Structures) is a numbering and naming computerized inventory system identifying the elements (prehistoric and historic) that the NPS has, or plans to acquire, legal interest in. The Feature ID number is used to catalogue historic features.

MANAGEMENT

The Truman Farm is owned by the National Park Service (NPS), and managed as the Grandview Unit of the Harry S Truman National Historic Site (HSTR).⁷ The HSTR staff provides seasonal operations and maintenance, utility service (electrical, geothermal, water, sanitary and storm sewer), and interpretive programs for the site.

Current management goals include maintaining and interpreting the Truman Farm as the last surviving remnant of the Truman family farm operation. It was begun by his maternal grandfather Solomon Young in the 1800s, and was influenced by President Truman when he lived and worked on the farm between 1906 and 1917, and through the 1960s as he stayed involved with the farm management and subsequent sale of land. The farm had a significant influence on Truman, contributing to his character and work ethic.

The management of the Truman Farm is generally guided by the 1999 General Management Plan Amendment (1999 GMPA)⁸ with interpretation guidance provided by the 2000 Long-Range Interpretive Plan (2000 LRIP).⁹

- The 1999 GMPA directed a limited restoration treatment for the Truman Farm. According to the 1999 GMPA, the Grandview Unit would retain its current character, and existing historic buildings and structures

would be preserved. The 1999 GMPA allowed for the potential for reconstructing certain previously removed historic landscape features, and for removal of non-historic elements. Restoration would be limited to those features that are necessary to convey the significance of the farm during the life of President Truman. Interpretation efforts were to be guided by a long range interpretive plan with both interior and exterior exhibits. Visitor and administrative functions would be re-located from the historic Farm Home.¹⁰

- The 2000 Long Range Interpretive Plan (2000 LRIP) “articulate(d) a vision for the park’s interpretive future, and recommend(ed) media and programs best suited for meeting visitor needs, achieving management goals, and telling the park stories.”¹¹
- The 2000 LRIP superseded the 1984 Interpretive Prospectus as the park had changed considerably as several properties were added to the HSTR including the Grandview Unit acquired in 1994. The 2000 LRIP recommended a full visitor experience

7 National Park Service, U.S. Department of the Interior. *Scope of Work, Historic Structures and Cultural Landscape Report with Environmental Assessment*. Truman Farm-Harry S Truman National Historic Site, May 2011.

8 National Park Service, U.S. Department of the Interior. *General Management Plan for Harry S Truman National Historic Site*. Independence: National Park Service, 1999.

9 National Park Service, U.S. Department of the Interior. *Long-Range Interpretive Plan: Harry S Truman National Historic Site*. Harpers Ferry: Harpers Ferry Center Interpretive Planning, November 2000.

10 National Park Service, U.S. Department of the Interior. *General Management Plan for Harry S Truman National Historic Site*. Independence: National Park Service, 1999.

11 National Park Service, U.S. Department of the Interior. *Long-Range Interpretive Plan: Harry S Truman National Historic Site*. Harpers Ferry: Harpers Ferry Center Interpretive Planning, November 2000, 1. The Long-Range Interpretive Plan (2000 LRIP) for Harry S Truman National Historic Site is a component of the park’s Comprehensive Interpretive Plan (CIP), as outlined in the National Park Service Interpretive Guidelines (DO-6). Using the park’s mission, purpose, and resource significance statements, plus the primary interpretive themes and visitor experience goals, this plan articulates a vision for the park’s interpretive future, and recommends the media and programs best suited for meeting visitor needs, achieving management goals, and telling the park stories. These foundation elements come directly from—or are based on—similar statements in the park’s Strategic Plan and in the recently approved revision of the General Management Plan

for all sites and for all types of visitors including those who prefer to experience resources on their own, at their own pace. For the Truman Farm, the 2000 LRIP recommended a new visitor contact center (on Tract 3, acquired in 2011) with information and orientation, sales, and a small AV space with the potential of a joint effort between the NPS and the local community. The 2000 LRIP recommended an audiovisual program supported by interior and exterior exhibits and a walking tour on the grounds to convey the property's original acreage and President Truman's influence on the surrounding development, as well as guided tours of the Farm Home.

Management Issues

The following summarizes management issues identified as part of the research, inventory and evaluation of the Truman Farm's buildings and cultural landscape. These issues address those elements and challenges associated with the existing site, building or structures, and those challenges associated with operations or maintenance that make it difficult for the park to realize the vision and goals for the property. Treatments to assist in addressing these management issues are presented in Chapter 5: Treatment.

The following management issues were identified.

- The scale of the historic farm is unclear;
- The extent of the historic farm is confusing;
- Loss of spatial relationships and historic views diminish the historic setting;
- On-site vehicular circulation and parking impacts the integrity of the NHL;
- Need for life safety/code compliance of the buildings and site;
- Need for accessibility and pedestrian routes;
- Need for code compliant utilities;
- Issues with site drainage and foundation condition;
- Lack of facilities limits interpretation and the visitor experience;
- NPS maintenance facilities impact the visitor experience and the integrity of the NHL;
- Limited hazardous materials exist on-site;
- Opportunity for new visitor, administrative and maintenance facilities.

The Scale of the Historic Farm is Unclear

Two conditions make it difficult to understand the original scale of the Truman Farm, which is important in understanding the influence the farm had on President Truman. One is the misconception that all lands associated with the original Truman farm were bought and developed after President Truman's involvement with the property, and the subsequent development 'happened' to the site. The second is the impact that some of the adjacent development has on the current farm, which may not have been envisioned by the president.

- President Truman's maternal grandfather had acquired close to 600 acres of agricultural land, with reports of his owning upwards of 1,500 acres at the time of his death. Of the original 600 acres, only approximately five acres remain, and this land is surrounded by modern development. A portion of this development was undertaken with the involvement Harry S Truman, beginning in the mid-1950s as President Truman collaborated with developers and architects to create a modern, convenient and state-of-the-art shopping experience to the east of the site, known as Truman Corners. A

portion of the current site, the land to the south, is part of the development parcel, but was never fully developed.

- In 1987, the area immediately north of the Truman Farm was sold and developed as a strip shopping center with a parking drive and spaces located near the historic site, on land that once belonged to Vivian Truman, the president's brother.
- The property immediately to the south of the current five acres was developed in 1987. A building built near Blue Ridge Boulevard blocks the view toward the Farm Home from the southwest.

Extent of the Historic Farm is Confusing

The delineation of the property boundary of the Truman Farm visually appears to imply that this fenced area was the historic farm at some point in its history. In addition, the loss of spatial relationships and small scale features makes it hard for visitors to understand how the farm functioned during the historic period.

- The existing fences outline the property ownership of the NPS prior to the purchase of the additional acreage to the south. The fence line also outlines the boundaries of the National Historic Landmark. Overgrown volunteer vegetation obscures the existing fencing. The original area of the farm, which included the Farm Home and yard, orchards, a garden, and a barnyard (with barn), is difficult to discern.
- The loss of fencing that once enclosed the various spaces of the farm makes it difficult to understand the historic spatial organization of the farm, and the importance of these spaces to the living and agricultural operations. In particular, the loss of fencing around the Farm Home, between the Farm Home and the non-extant barn, and the

loss of fencing around the barnyard diminishes the historic setting.

Loss of Spatial Relationships and Historic Views Diminishes the Historic Setting

The historic setting of the Farm Home offered expansive views across the land towards the north, east and south. The west view was primarily through the sugar maple grove, which has been partially restored with new trees.

- Today's views to the north are of a strip shopping center, which is less than desirable for a visitor experience. Views to the east are currently obscured by overgrown volunteer vegetation, as are views to the south.
- Views into the property are limited due to newer development being allowed to build closer to Blue Ridge Boulevard.
- Typical utilities such as light poles, utility boxes and other street elements interrupt the view from Blue Ridge Boulevard towards the Farm Home.

On-Site Vehicular Circulation and Parking Impacts the Integrity of the NHL

In 1983, prior to NPS ownership, a new entrance drive and parking area was installed for ease of visitor access. At the time, adjacent property was not available or affordable to accommodate visitors off-site.

- The wide asphalt drive and loop parking area detracts from the historic setting and impacts the integrity of the NHL. Although the route follows the historic drive, the width, material and extensive loop overwhelm the historic site.

Need for Life Safety/Code Compliance of the Buildings

The final determination of the use of each building on-site will trigger specific code considerations. Once uses are confirmed, a balance between safety,

code compliance, resource protection and potential Administrative Controls will need to be reached for these buildings. Administrative Controls are management agreements between park operations and code officials that define use limitations on buildings. These definitions can limit code required upgrades to only what is deemed reasonable for current/future uses by both parties.

Code considerations for the Farm Home include the following:

- Structural loading capacities (snow, live and dead loads).
- Egress routes including widths and handrails.
- Egress lighting levels.
- Two-story structure vs. code requirements.
- Tornado “Place of Refuge” would require use of the basement stair which is non-compliant.
- The Farm Home, while seemingly residential, is actually a public building with an Assembly Use due to the current guided tours. It should be noted that the park has a current Administrative Control limiting the tours to six people at one time who are accompanied by park staff.

Code considerations for the Garage include the following:

- Stabilizing the lateral system.
- Anchor the roof framing for wind uplift.

Code considerations for the Poultry House include the following:

- The building is in danger of collapse and should not be opened to the public or staff until mitigation can occur.
- The Poultry House is likely best suited to be viewed but not entered.

Need for Accessibility and Pedestrian Routes

The ABAAS (Architectural Barriers Act Accessibility Standards of 1968) requires universal access to facilities designed, built, altered, or leased with Federal funds. The 2004 ADA-ABA Accessibility Guidelines (ADA-ABA) should be utilized when undertaking alterations to the Truman Farm as they are the most current standards.¹²

- A wood ramp currently attempts to provide access to the first floor of the house, although the doors, hardware and thresholds have not been modified to meet full compliance. Access to the second floor of the house is not attainable without extensive modification to the historic features.
- An accessible route is provided between the non-contributing parking area and the Farm Home. The remainder of the site does not have pathways.
- As accommodations are made for accessible routes and access, the historic setting should also be protected as the primary resource.
- Neither the Garage nor the Poultry House are currently accessible.

Need for Code Compliant Utilities

The following have been identified as utility issues:

- The need for a code compliant backflow.
- The need to scope the existing basement preventer drain to determine where it drains.

12 U.S. Access Board. 23 July 2004. *Americans with Disabilities Act and Architectural Barriers Act Accessibility Guidelines*. Washington D.C. The ADA (Americans with Disabilities Act of 1990) prohibits discrimination on the basis of disability and establishes design requirements for the construction or alteration of facilities. In 1991, the Board (ADA) published the ADA Accessibility Guidelines (ADAAG), which served as the basis for enforceable standards. The ABA also maintained a set of guidelines which served as the basis for enforceable standards. In 2004, the ADA and the ABA jointly updated the guidelines for ABA facilities and ADA guidelines so a consistent level of accessibility was specified for both laws.

Issues with Site Drainage and Foundation Condition

The Truman Farm is on a fairly level site, with little natural positive drainage away from the Farm Home and other structures. Recent drainage improvements and foundation upgrades have directed some drainage away from the building and structures. However, additional drainage improvements may be necessary near some foundations.

Lack of Facilities Limits Interpretation and the Visitor Experience

Visitors to the Truman Farm currently access the site along the entrance drive, park in the parking area, and enter the Farm Home where they purchase tickets for guided tours. The site is open every day, but is only staffed Friday through Sunday from Memorial Day through Labor Day. Guided tours are offered every day the site is staffed.¹³

- Due to the size of the house, and the limited availability of park staff, guided tours are limited to six people. The location of the sales (cash register) area in the Farm Home diminishes the historic space, and the visitor experience.
- There is no permanent full-time staff for the Grandview Unit. Staffing the Farm Home in the summer when it is open for tours requires pulling employees from duties at the Truman Home and the visitor center in Independence; however, an existing volunteer and additional seasonal staff do help meet the limited summer staffing requirements.¹⁴
- The adjacent property and building

13 National Park Service, U.S. Department of the Interior. *Scope of Work, Historic Structures and Cultural Landscape Report with Environmental Assessment*. Truman Farm-Harry S Truman National Historic Site, May 2011, 3.

14 National Park Service, U.S. Department of the Interior. *Long-Range Interpretive Plan: Harry S Truman National Historic Site*. Harpers Ferry: Harpers Ferry Center Interpretive Planning, November 2000.

have recently been purchased by the NPS for use as visitor, administration, and maintenance facilities (a recommendation of the 1999 GMPA). The development of this building for these uses would likely alleviate many issues associated with visitor experience. It is estimated that the building is approximately 3,443 square feet.

NPS Maintenance Facilities Impact the Visitor Experience and the Integrity of the NHL

- NPS storage facilities have been built on-site and include a structure located behind the Garage, and another located in the Farm Home yard. The presence of these two buildings diminishes the historic setting and impacts the integrity of the NHL.

Need for Hazardous Material Removal

A limited amount of hazardous material has been found. Worker safety requirements and federal regulations will need to be met when handling these materials.

Opportunity for New Visitor, Administration, and Maintenance Facilities

The NPS recently purchased two additional tracts of land (Tracts 2 and 3), both of which are contiguous to the south property line, and were at one time part of the Truman family farm property. Both are intended to become a part of the site to assist with visitor management and to provide facilities for better management of the historic site. Tract 2 consists of a long linear field. Tract 3 includes a single-story building surrounded by a parking area, and two access drives that connect to Blue Ridge Boulevard.¹⁵

15 The legal property consists of three tracts, all of which were part of the Truman property at one time or another. Tract 1 is the original acreage where the Farm Home is located. Tract 2 is a field associated with the Truman Farm. Tract 3 includes a newer building and parking area, and was recently acquired by the NPS for future visitor amenities.

The purchase of these two tracts provides a significant opportunity for the HSTR to better serve their visitors and to manage the historic site. The building and acreage along Blue Ridge Boulevard offer a site and an enclosed space for visitor orientation, point of sale, and to house park administration offices. It also offers an opportunity to partner with local, regional and national agencies for visitor contact and office space.

The purchase of Tract 2, which is primarily a field, offers an opportunity to buffer the Truman Farm from adjacent uses, and to further interpret the Truman family, and President Truman's farm life by possibly using the acreage for crops.

As of December 2011, the NPS had not determined a use for the building on Tract 3 in part due to staffing and budget concerns. A broader evaluation of the property's opportunities and constraints is needed to further guide the park in its use decisions. In addition, an assessment of the building's condition will be needed to properly program a use, and to determine the extent of any necessary modifications.

RELATED PLANNING DOCUMENTS

Management Policies 2006

NPS Management Policies 2006 provide guidance for all management decisions, including management decisions related to cultural resources. Cultural resources, including cultural landscapes and historic structures, are addressed in section 5.0, which states the NPS cultural resources management program involves "... stewardship to ensure that cultural resources are preserved and protected, receive appropriate treatments (including maintenance) to achieve desired conditions, and are made available for public understanding and enjoyment." In addition to NPS management policies, the following park-specific documents provided information on park resources and management strategies and priorities.

General Management Plan

(NPS 1987) - The General Management Plan provides broad management direction for resource management, visitor use, and development 15 to 20 years into the future.

Historic Structure Report

(NPS 1987) - This report provides a structural history of the Truman Home in Independence, Missouri and an in-depth historical analysis of the home of Harry S and Bess Wallace Truman.

Cultural Landscape Report

(NPS 1989) - This report documents the historic landscape around the Truman Home in Independence and guides park staff in the maintenance of the property.

General Management Plan Amendment (1999

GMPA) - The General Management Plan as described above was revised in 1999.

Long Range Interpretive Plan

(2000 LRIP) - The Long Range Interpretive Plan articulates a vision for the park's interpretive future, and recommends the media and programs best suited for meeting visitor needs, achieving management goals, and telling the park stories.

Truman Farm Home: Historic Resource

Study (NPS 2001) - This study covers the history and significance of the Harry S Truman Farm in Grandview, MO, the Frank and George Wallace homes in Independence, and the Noland House in Independence.

Cultural Landscape Inventory (2010 CLI)

- This report identifies the historic landscape around the Harry S Truman National Historic Site in Grandview, Missouri.

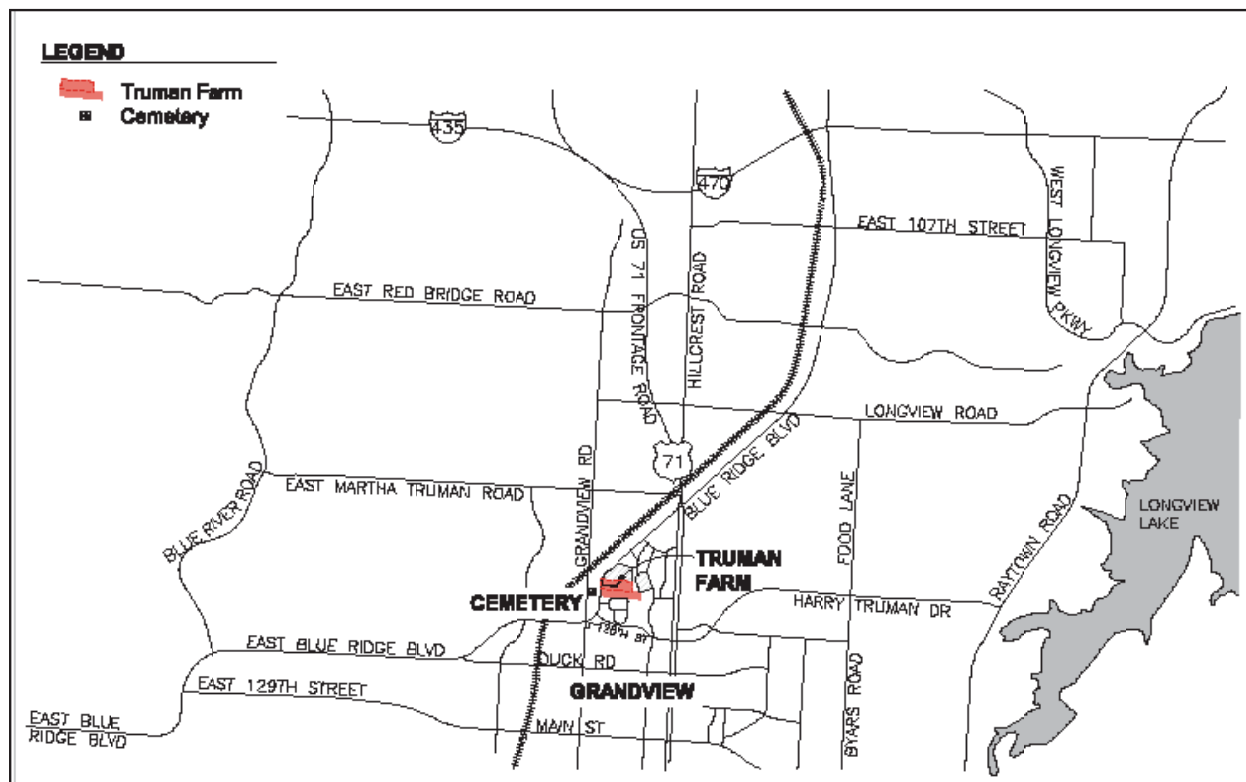


Figure 1-2. Vicinity Map

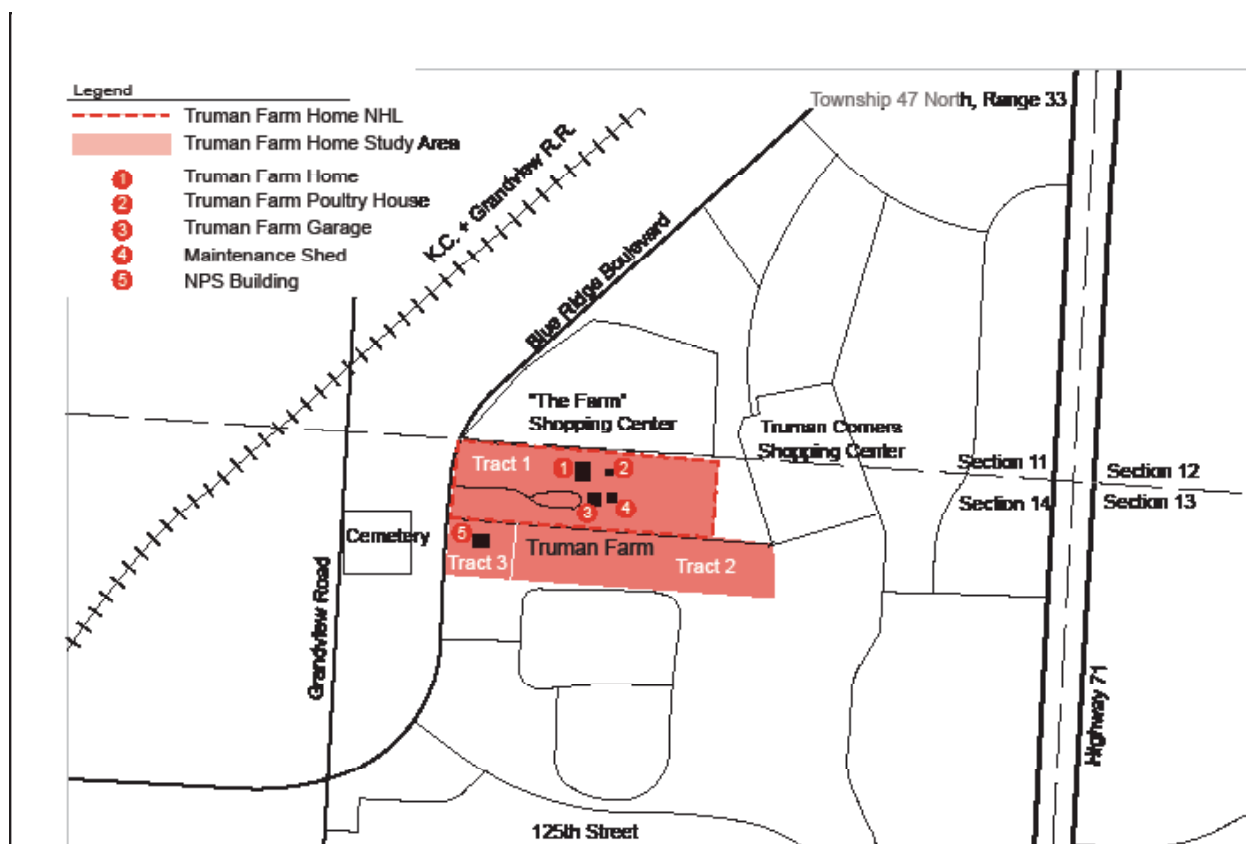


Figure 1-3. Study Area Map

DESCRIPTION OF THE STUDY

AREA

The Truman Farm is a nationally significant site associated with former U.S. President Harry S Truman, located in Grandview, Missouri, approximately 20 miles southwest of Independence, Missouri, and approximately 17 miles south of Kansas City, Missouri (Figure 1-3). The Truman Farm is within easy access of Interstates 470 and 435, and U.S. Highway 71.

The site is part of the Harry S Truman National Historic Site and is located near other prominent Truman-related sites including the Harry S. Truman Presidential Library and Museum, Jackson County Courthouse — Truman Administrative Courtroom, and the Harry S Truman National Historic Landmark District where the Truman Home is located. There are other secondary structures in the area that relate to Mr. Truman's life in Independence and Kansas City. Mr. Truman's birthplace is located 118 miles south of Independence on U.S. Highway 71 and is administered by the State of Missouri.

The Truman Farm is located on approximately eleven acres of the original 591 acres purchased and cultivated by President Truman's maternal grandfather beginning in 1867. Five and a quarter acres (5.25 AC), Tract 1, was added to the Harry S Truman National Historic Site on December 14, 1993, when the U.S. Congress authorized its acquisition, by donation, from Jackson County, Missouri. The subsequent five acres, Tracts 2 and 3, were added in 2011 by Public Law 108-396, which authorized the acquisition of additional land. The U.S. Congress also authorized and directed the Secretary of the Interior to provide appropriate political subdivisions of the State of Missouri with technical assistance for

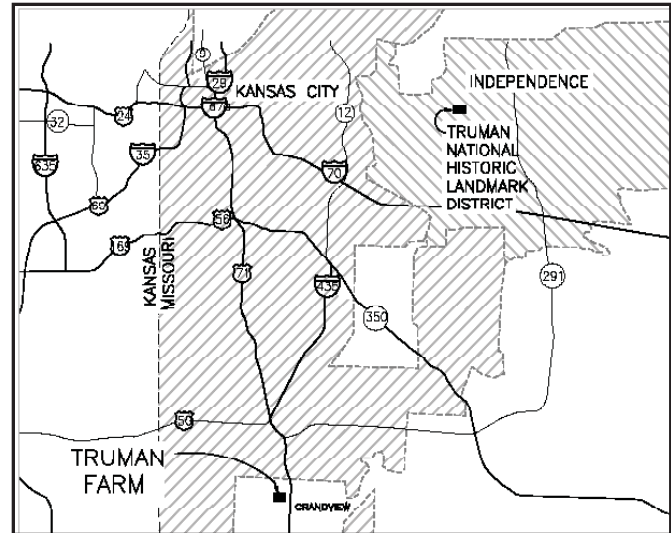


Figure 1-4. Location Map

the development and implementation of plans, programs, regulations, or other means for minimizing the adverse affects on the Truman Farm by the development and use of adjacent lands.

The Truman Farm is the last surviving remnant of the family farming operation that influenced the character and work ethic of Harry S Truman, and was where he lived and worked from 1906 through 1917.

The property is a small agrarian complex, set amongst a growing commercial and residential area, defined by a series of vernacular structures and the Truman Farm Home. In addition to the Farm Home, the grounds include a Poultry House, and Garage where Mr. Truman stored his Stafford automobile, all of which are original features of the farm. The site is characterized by relatively level topography, with some topographic changes associated with its use as a farmyard, orchard, garden and barnyard. Numerous archeological remains exist on-site related to non-extant agricultural structures and uses, including barn foundations.

The boundaries of the study area (Figure 1-2) include the Truman Farm Home NHL, which is fenced and is approximately five acres in size (Tract 1), the adjacent parcel to the south of the NHL (Tract 2), and a building with associated parking (Tract 3). The additional land tracts are both part of the original family farm.

The north boundary extends along a fence line, located just to the north of the Farm Home, separating the farm land from the adjacent development. This property boundary was defined in 1983, when the northern portion of the Truman family farm was sold and developed as a shopping mall.

The east boundary follows the top of a ridge when it is a part of the NHL property, and is also defined by a fence (with overgrown vegetation).

The south boundary of the study area follows a fence line and encloses the newer parcel of land, a level field that was sold and partially modified as part of President Truman's sale of the eastern 105 acres of the family farm in the 1950s for a state-of-the-art shopping mall.

The west boundary follows the right-of-way along Blue Ridge Boulevard.

Ownership

The Truman Farm Property includes 11.19 acres of land and is divided into three parcels, Tracts 1, 2 and 3. Each of the three parcels are east of Blue Ridge Boulevard. The northern parcel (Tract 1) is approximately 5.25 acres in size and includes the Truman Farm Home, which was constructed in 1894-1895. Tracts 1 and 2 were sold by the Trumans in 1983, and are now owned by the NPS which acquired the property in 1994. The NPS acquired Tract 3 to keep the three parcels under the same ownership and to maintain the integrity and historical value of the Truman homestead.

DOCUMENTATION RECOMMENDATIONS AND FUTURE STUDIES

The following future studies would be helpful to further inform park staff on management of the site:

- Document and assess the existing conditions of the building on Tract 3 (plan and elevations);
- Perform a hazardous material analysis of the building on Tract 3;
- Analysis of the interior of the building on Tract 3 for new use for visitor, administration and/or maintenance spaces;
- Utility analysis of the building on Tract 3 to accommodate any modifications to the building;
- Historic Furnishings Plan and Report (Farm Home);
- Exhibit Plans (Farm Home and Garage);
- Soils analysis and archeology within Tract 1;
- Scope the Farm Home sewer line;
- Tree coring;
- Additional photo analysis.

ENVIRONMENTAL ASSESSMENT IMPACT TOPICS

Impairment Standard

In addition to determining the environmental consequences of implementing the preferred and other alternatives, NPS *Management Policies 2006* (section 1.4) requires a determination of whether the effects of the preferred alternative would impair a park's resources and values. The fundamental purpose of the national park system, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. NPS managers must always seek ways to avoid, or to minimize to the greatest degree practicable, adverse impacts on park resources and values. The prohibited impairment is an impact that, in the professional judgment of the responsible NPS manager, would harm the integrity of park resources or values, including the opportunities that otherwise would be present for the enjoyment of those resources or values.¹⁶ Whether the proposed alternative would impair HSTR resources and values will be determined concurrent with the finding of the level of significance of the proposed alternative's environmental consequences.

Scoping

Scoping is an early and open process to determine the breadth of issues and alternatives to be addressed in an environmental assessment. The park staff and resource professionals of the NPS Midwest Regional Office conducted internal scoping. This interdisciplinary process defined the purpose and need, identified potential actions to address the need, determined the likely issues and impact topics, and identified the relationship of the preferred alternative to other planning efforts at the park.

¹⁶ NPS Management Policies 2006.

The park superintendent initiated public scoping on September 4, 2012.

The NHPA (16 United States Code [USC] 470 et seq.); NEPA; NPS Organic Act; NPS *Management Policies 2006*; DO – 12: *Conservation Planning, Environmental Impact Analysis, and Decision-making* (2001); and DO – 28: *Cultural Resources Management Guide-line* require the consideration of impacts on cultural resources, either listed in or eligible to be listed in, the National Register of Historic Places. The park notified the Missouri State Historic Preservation Office (SHPO) of the project in a letter sent September 4, 2012 and will provide the SHPO a copy of the EA for review and comment.

The park sent the U.S. Fish and Wildlife Service (USFWS) a scoping notice on September 4, 2012 to solicit input on threatened and endangered species concerns for the proposed visitor center. The NPS will provide the USFWS a copy of the EA for review and comment.

IMPACT TOPICS

An important part of the decision-making process is seeking to understand the consequences of making one decision over another. This CLR/HSR/EA identifies the anticipated impacts of possible actions on certain resources, park visitors, and neighbors. The impacts are organized by topic, such as “vegetation” or “public health and safety.” Impact topics serve to focus the environmental analysis and ensure the relevance of impact evaluation.

Impact topics were developed from the questions and comments brought forth during internal and external scoping. Some topics were dismissed from detailed analysis because the proposed alternatives would either have no effect on the impact topic or the effects would be negligible to minor. Some impact topics were retained even though the effects of the alternatives would be minor because the impact topic is a particularly sensitive resource or was identified as an important topic in scoping. The issues identified in scoping that are evaluated in this CLR/HSR/EA are potential effects on historic structures and cultural landscapes, archeological resources, visual resources, visitor experience, public health and safety, park operations, and vegetation. Table 1 presents the retained impact topics, the reasons for retaining the topic, and relevant laws, regulations, and policies.

Table 1. Impact Topics Retained and Relevant Laws, Regulations, and Policies

Impact Topic	Reasons for Retaining Impact Topic	Relevant Laws, Regulations, and Policies
Historic Structures and Cultural Landscapes	The future of the farm and its historic structures and cultural landscapes is a key issue of the CLR/HSR/EA. Changes to historic structures and the cultural landscapes that could result from implementing one or more of the alternatives would be of concern to visitors, the public, the SHPO, and NPS managers; therefore, this topic was retained for further analysis.	Sections 106 and 110 of the NHPA; ACHP implementing regulations regarding the “Protection of Historic Properties” (36 CFR 800); DO – 28: Cultural Resources Management Guideline; NPS Management Policies 2006; Secretary of the Interior’s Standards for the Treatment of Historic Properties; NEPA; Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes (1996)
Archeological Resources	Ground-disturbing construction activities and vegetation removal associated with the CLR/HSR/EA alternatives have the potential to impact archeological resources therefore, this topic was retained for further analysis.	Sections 106 and 110 of the NHPA; ACHP implementing regulations regarding the “Protection of Historic Properties” (36 CFR 800); DO – 28: Cultural Resources Management Guideline; NPS Management Policies 2006; Secretary of the Interior’s Standards for the Treatment of Historic Properties; NEPA; Secretary of the Interior’s Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes (1996)
Vegetation	Vegetation disturbance could occur and the introduction of invasive non-native species is possible from ground-disturbing activities. Because the alternatives have the potential to affect vegetation, this topic was retained for further analysis.	NPS Organic Act; NPS Management Policies 2006; Resource Management Guidelines (NPS-77); Federal Noxious Weed Control Act; Executive Order (EO) 13112, “Invasive Species” (1999)
Visitor Experience	The alternatives could affect overall visitor understanding of the farm, including interpretive and educational opportunities therefore, this topic was retained for further analysis.	NPS Organic Act; NPS Management Policies 2006

Impact Topic	Reasons for Retaining Impact Topic	Relevant Laws, Regulations, and Policies
Park Operations	Park operations could be affected by the alternatives, including additional facility needs and infrastructure maintenance therefore, this topic was retained for further analysis.	NPS Management Policies 2006
Visual Resources	The alternatives could affect the views to and from the site therefore, this topic was retained for further analysis.	NPS Management Policies 2006

IMPACT TOPICS DISMISSED FROM FURTHER CONSIDERATION

The following impact topics or issues were eliminated from consideration because the effects, if any, would be negligible to minor.

Geology. The NPS Organic Act and NPS *Management Policies 2006* direct the NPS to preserve and protect geologic resources and maintain natural geologic and coastal processes. The NPS must also comply with state and local requirements for work in coastal zones.

The geologic unit in the project area is the Kansas City group.¹⁷ The Kansas City group consists of cyclic deposits of limestone and shale with minor deposits of sandstone and shale.¹⁷ This unit is part of the Late Pennsylvanian age.¹⁸ The action alternatives would have little to no impact on site geology because no subsurface excavation is proposed. Geologic resources do not contribute to the significance of the park and no important or unusual geologic formations would be affected by the alternatives. As a result, at most, the action alternatives would have local long-term negligible adverse effects on geologic resources in the project area. The no action alternative would have no effect on geologic resources. Because impacts to geologic resources would be negligible, this impact topic was dismissed from further analysis.

Soils. The National Resource Conservation Service (NRCS) mapped soils at the farm as Sibley-urban land complex, 2 to 5 percent slopes, which consist of silt loam to silty clay loam soils found

on interfluvies.¹⁹ The entire project area has been disturbed on the surface by land clearing, grading, and agricultural activities. Any activities proposed on the farm would have negligible effects on soils because activities would occur within previously disturbed areas, would not significantly affect the soil profile, and would not result in increases in soil erosion. Because impacts to soils would be negligible to minor, this impact topic was dismissed from further analysis.

Prime or Unique Farmland. In 1980, the Council on Environmental Quality (CEQ) directed federal agencies to assess the effects of their actions on farmland soils classified as prime or unique by the United States Department of Agriculture, NRCS. Prime or unique farmland is defined as soil that particularly produces general crops such as common foods, forage, fiber, and oil seed; and unique farmland produces specialty crops such as fruits, vegetables, and nuts. None of the project area is mapped as prime farmland or farmland of statewide importance.²⁰ Because there would be no impacts to prime or unique farmland, this impact topic was dismissed from further analysis.

Wetlands. EO 11990, NPS *Management Policies 2006*, and DO 77-1 direct that wetlands be protected, and that wetlands and wetland functions and values be preserved. These orders and policies further direct that direct or indirect impacts to wetlands be avoided when practicable alternatives exist. No wetlands occur within the project area.

17 U.S. Geological Survey (USGS). 2012. *Mineral Resources On-Line Spatial Data*. Downloaded on February 21, 2012. Available at: <http://tin.er.usgs.gov/geology/state/ak/akgeo-unit.php?unit=>.

17 USGS Mineral Resources On-Line Spatial Data

18 USGS Mineral Resources On-Line Spatial Data

19 Natural Resource Conservation Service (NRCS). 2012. *Custom Soil Report*. Downloaded on January 19, 2012. Available at: <http://websoilsurvey.nrcs.usda.gov/app>.

20 NRCS. *Custom Soil Report*. Downloaded on January 19, 2012

Because the alternatives would have no effect on wetlands, this topic was dismissed from further analysis.

Wildlife. A variety of wildlife species are found in Missouri grasslands, including various bird species, reptiles, amphibians, and mammals. The farm provides limited wildlife habitat because the entire project area has been previously disturbed by agricultural, clearing and grading activities. The trees and shrubs present along the southern and eastern boundary of the farm provide some bird habitat. The action alternatives would result in the loss or disturbance of no more than one acre of vegetation, which would have a local long-term minor adverse effect on wildlife. Because similar habitat is readily available in surrounding areas, on a regional level, loss of wildlife habitat under the action alternatives would be negligible. There would be no impact to wildlife under the no action alternative. Because impacts to wildlife under the action alternatives would be minor on a local level and negligible on a regional level, wildlife was dismissed as an impact topic.

Special Status Species. Special status species include species listed as threatened or endangered under the Endangered Species Act (ESA) and other species considered sensitive by the park, including any state-listed threatened or endangered species. The U.S. Fish and Wildlife Service indicated that the only federally listed species that may be present at Truman Farm is Indiana bat (*Myotis sodalis*).²¹ Although habitat requirements are not well understood for Indiana bat, the following habitats are considered important:

- 1) live or overly-mature trees and snags with peeling or exfoliating bark, split tree

trunks, or cavities, which may be used as maternity or bachelor roosts; 2) tree species including shellbark or shagbark hickory, white oak, cottonwood, and maple; and 3) stream corridors, riparian areas, and upland woodlots that provide foraging habitat.²² Adverse effects to Indiana bat can be avoided by removing trees during the species' hibernation period of November 1 to March 31. Most of the trees that would be removed under the proposed action alternatives do not meet the description of Indiana bat habitat, but to ensure there would be no adverse effect, the NPS would remove trees during the hibernation period.

Because the NPS would remove trees during the hibernation period and there would be no effect on Indiana bat, this topic was dismissed from further consideration.

Water Resources. The Clean Water Act and NPS *Management Policies 2006* direct the NPS to protect park waters and avoid pollution of park waters by human activities. No perennial rivers or lakes occur in the immediate project area where activities are proposed. Revegetating disturbed areas and other permanent drainage and erosion-control measures would minimize the potential for short-term adverse effects to water quality. The potential for impacts to water quality from the action alternatives would be local, short-term, and minor. The no action alternative would have no effect on water resources. For these reasons, water resources was dismissed as an impact topic.

Floodplains. EO 11988, "Floodplain Management" requires an examination of impacts to floodplains and potential risks involved in placing facilities within floodplains. NPS *Management Policies 2006*

21 USFWS, A. Salveter, Field Supervisor, Jefferson City, MO. letter to L. Villalva, National Park Service, Independence, October 16, 2012

22 Ibid.

and DO – 77-2: *Floodplain Management* provides guidelines for proposed actions in floodplains. The project area is not located in a floodplain.²³ Because there would be no impacts to floodplains, floodplains was dismissed as an impact topic.

Air Quality. The project area is an area designated as “nonattainment” for ozone standards and “attainment” for all other regulated air pollutants.²⁴ The local and short-term changes in air quality associated with emissions from construction equipment during implementation of the proposed action alternatives would have a negligible effect on air quality. Neither overall park air quality nor regional air quality would be affected by the action alternatives. Because there would be a negligible effect on air quality from the proposed project, this impact topic was dismissed from further analysis.

Climate Change. As discussed above, any emissions associated with the proposed project would be negligible. These emissions would have an indiscernible effect on climate change. Changes in visitor use following implementation of the action alternatives would not result in a substantial increase in traffic to the park. Because the proposed project would result in indiscernible contributions to climate change, this impact topic was dismissed from further analysis.

Paleontological Resources. NPS *Management Policies 2006* directs the NPS to protect, preserve, and manage paleontological resources. Because the farm is not

known to contain scientifically important paleontological resources, it is unlikely there would be any effects on paleontological resources. Therefore, paleontological resources was dismissed as an impact topic.

Indian Trust Resources. Secretarial Order 3175 requires that any anticipated impacts to Indian trust resources from a proposed project or action by Department of the Interior agencies be explicitly addressed in environmental documents. The federal Indian trust responsibility is a legally enforceable fiduciary obligation on the part of the United States to protect tribal lands, assets, resources, and treaty rights. The order represents a duty to carry out the mandates of federal law with respect to American Indian and Alaska Native tribes. None of the project area is an Indian trust resource according to this definition. In addition, any Indian titles to such lands now within the park have been extinguished through cession or sale. Therefore, Indian trust resources was dismissed as an impact topic.

Ethnographic Resources. Ethnographic resources are defined by the NPS as any “site, subsistence, or other significance in the cultural system of a group traditionally associated with it.”²⁵ No specific issues related to ethnographic resources have been identified. Because it is unlikely that ethnographic resources would be affected by any of the alternatives, and because appropriate steps would be taken to protect any ethnographic resources that are inadvertently discovered, ethnographic resources was dismissed as an impact topic.

Environmental Justice. EO 12898, “General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” requires all federal

23 Federal Emergency Management Agency. 2012. Map Services Center- Flood Maps. Available at: <https://msc.fema.gov/webapp/wcs/stores/servlet/StoreCatalogDisplay?storeId=10001&catalogId=10001&langId=-1&userType=G>

24 Missouri Department of Natural Resources. 2012. Air Pollution Control Program – National Ambient Air Quality Standard Area Boundary Designations. Available at: <http://dnr.mo.gov/env/apcp/naaqsboundarydesignations.htm>.

25 NPS, DO – 28.

agencies to incorporate environmental justice into their missions by identifying and addressing the disproportionately high and/or adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. According to the Environmental Protection Agency (EPA), environmental justice is the

...fair treatment and meaningful involvement of all people, regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including a racial, ethnic, or socioeconomic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.

The goal of 'fair treatment' is not to shift risks among populations, but to identify potentially disproportionately high and adverse effects, and identify alternatives that may mitigate these impacts. No actions in the alternatives would have disproportionate health or environmental effects on minorities or low-income populations or communities as defined in the EPA's "Draft Environmental Justice Guidance" (July 1996); therefore, environmental justice was dismissed as an impact topic.

Wilderness. The Wilderness Act and NPS *Management Policies 2006* require that all lands administered by the NPS be evaluated for their suitability for inclusion within the National Wilderness Preservation System. Areas suitable for wilderness designation are those that

generally have the qualities of being untrammeled, natural, undeveloped, and offering solitude or a primitive and unconfined type of recreation. The project area is not within existing or proposed wilderness boundaries and, therefore, is not subject to Wilderness Act requirements. Because there would be no direct effects on wilderness resources and values, this topic was dismissed from further evaluation.

Wild and Scenic Rivers. No rivers in or near the project area are included in the nationwide rivers inventory, or are proposed for wild and scenic river study; therefore, wild and scenic rivers was dismissed as an impact topic.

Natural Soundscape. An important part of the NPS mission is preservation of natural soundscapes associated with national park units as indicated in NPS *Management Policies 2006* and DO – 47: *Sound Preservation and Noise Management*. Natural soundscapes exist in the absence of human-caused sound. The natural ambient soundscape is the aggregate of all natural sounds within the park, together with the physical capacity for transmitting natural sound through air, water, or solid material. Acceptable frequencies, magnitudes, and durations of human-caused sound varies among national park units, as well as potentially throughout each park unit, but are generally greater in developed areas and less in undeveloped areas. The Truman Farm is in a high use area with consistent vehicle traffic and background noise. None of the proposed alternatives would introduce additional noise and traffic from visitors and park staff. Because the proposed project would not increase noise levels, natural soundscapes was dismissed as an impact topic.

Lightscape. In accordance with NPS *Management Policies 2006*, the NPS strives

to preserve natural ambient lightscapes, which are natural resources and values that exist in the absence of human-caused light. The actions proposed in the alternatives could result in the expanded use of nighttime lighting, specifically at the Farm Home and/or at the entrance of the farm. However, the effects of this lighting would be localized and minor. Only a small area would be affected by the additional lighting. In addition, due to the surrounding urban development, the additional lighting would have a negligible impact on the night sky. Therefore, lightscape was dismissed as an impact topic.

Chapter 2. History

INTRODUCTION

This chapter presents the history of the Truman Farm, including its establishment by Harry S Truman's maternal grandparents, the time period in which Truman lived and worked on the farm, through its final sale by Harry S Truman to his nephews in 1965. More recent history of the farm is also included, as efforts have been made by the Harry S Truman Farm Home Foundation and the NPS to repair the property to convey its relationship to the president.

This chapter begins with an overview of the history of the farm in relationship to Harry S Truman. It provides a historic context that addresses the influence the farm had on President Truman. The Truman family's development of the land is also discussed. This is followed by a statement of significance that describes the historical significance of the Farm Home, including its designations as a NRHP site and an NHL, and presents the period of significance as 1906 to 1965 to include the years the president lived and worked on the family farm and his on-going relationship with the farm through 1965 when he sold the last parcel.

This chapter concludes with a presentation of seven periods of landscape development for the property, including four periods that are within the period of significance.

HISTORY SUMMARY

In 1906 Harry S Truman moved in Grandview, Missouri, to work on the family farm. The 22-year-old bank clerk had never farmed before, and he was leaving a job that paid an admirable \$100 a week. His friends doubted that he would stick with the grueling work for very long, but he surprised them, and maybe he surprised himself, by succeeding at farming for the next 11 years.

The lessons the young bachelor learned on the farm formed much of his character and prepared him for the challenges of his future. Although he moved away when he was 33, Harry Truman remained connected to the farm and to his family's struggles to stay on the land. Forty years later the land sustained the Truman family in ways that they could not have possibly foreseen in those early years on the farm.

Historic Context

The Truman Family Farm was originally developed by Harry S Truman's maternal grandparents, Harriet and Solomon Young. In 1841, the Youngs joined a stream of settlers from Kentucky in search of land and opportunity. The Youngs and their two children travelled by steam boat up the Missouri River to a community known as Westport Landing that would later become Kansas City. From there they looked for good farm land. The Youngs bought their first property in 1844 with funds from the sale of their land in Shelby County, Kentucky. They gradually expanded their holdings by applying for patents on public lands. By 1859 the Youngs had obtained more than 20 patents on public land. Harriet and Solomon were the kind of people that

Congress had in mind when it opened federal lands to new settlement. The Land Law of 1820 allowed pioneers like the Youngs to buy federal property at \$1.25 an acre with a minimum purchase of 80 acres. The Youngs took full advantage of this and other federal land programs. When Congress passed the Homestead Act in 1862, Harriet patented land in her name.

While Harriet Young managed the farming operations and raised their growing family, Solomon developed a freighting business. He transported goods to the west via ox-drawn wagons and led caravans over the Santa Fe and Oregon Trails. He returned home to Missouri to stay in 1870 and the couple concentrated on farming and raising livestock. Like many farmers, they found their products in high demand after the Civil War and were able to take advantage of the rapidly expanding railroad system.

The railroads made it economically feasible to transport grain and cattle to distant markets. The newly accessible market for farm products changed the family farm from a subsistence operation to a profitable enterprise with cash crops and livestock. Grandview area farmers also benefitted from a rapidly growing local market in nearby Kansas City, where the population soared from 3,500 in 1865 to an astounding 32,000 in 1870.¹ In 1867 the Youngs acquired 398 additional acres and built a large home. This purchase brought their total holdings up to a little less than 2,000 acres. The next year, in 1868, Solomon and his daughter, Martha, planted stately rows of maples in front of the home. The Youngs were well-known in the area. An 1877 atlas for Jackson County lists the Youngs, with their seven children, as prominent

farmers and stock raisers.

Martha Ellen Young was the second youngest child. She met and married John Truman, whose parents had also come from Kentucky. John Truman's family owned a nearby 200-acre farm. The couple married in 1881 and moved to Lamar, Missouri, where they shared their new home with John Truman's father, Anderson Shipp Truman.

In Lamar, John traded livestock from the lot across the street from the house. Their son, Harry, was born on May 8, 1884. In 1887, after attempts at farming on small acreages at a couple of locations, the Trumans moved in with Martha's parents, and helped the Youngs manage their sizable holdings.

The Trumans and the Youngs all lived in Solomon and Harriet's large house. Harry's younger brother, Vivian, was born in 1886 and was about a year old when they moved to the Young's farm. His sister, Mary Jane, was born on the farm in 1889. Their paternal grandfather, Anderson Shipp Truman, also lived in the house for a short time before he died in July 1887. The children enjoyed only a few years of farm life before Martha insisted they move into Independence to attend school. In his autobiography, Harry remembered his first years at the farm very fondly, as almost any child would who was allowed to play on a farm, surrounded by loving grandparents.

In 1892 Solomon Young died at the age of 77, and Harry's uncle, Harrison Young, took over the management of the farm. Two years later, in 1894, the original Farm Home burned to the ground. Harriet and Harrison Young quickly built a new, smaller, home and planned to rebuild a grander home at a later date.

The Trumans remained in Independence. The children were still in school in 1901

¹ Lawrence Christensen and Gary Kremer, *A History of Missouri Volume IV: 1875 to 1919*. Columbia, Missouri: University of Missouri Press, 1997. Page 44.

when John Truman gambled on a grain futures investment and lost all of the family's savings, including money that would have paid for Harry's college education. The family moved to Kansas City where Harry went to work for the railroad, and later found a job as a bank clerk.

When Harrison Young announced his plans to retire from farming in 1905, Harry's parents and his sister Mary Jane returned to run the farm. Brothers Harry and Vivian left their city jobs to join the family. By 1906 the entire Truman family was back on the farm and living in Grandmother Young's house. Harry and Vivian shared the bedroom over the kitchen. Martha and John Truman had the bedroom on the south side of the second floor. Mary Jane presumably shared the bedroom on the north side with her grandmother.

The farm in 1906 was much reduced from the Youngs' earlier holdings. When Solomon died without a will, Harriet gave 160 acres to each of the seven children, along with about \$50,000 to \$60,000 in personal property to be divided among them. She retained the 600-acre farm, which was still very large for the times. The average Missouri farm in the early 1900s had less than 125 acres. There were about 277,000 farms in Missouri in 1910, and only about 3,500 of those farms were greater than 500 acres.²

The country around the farm had also changed during the Trumans' absence. The St. Louis and San Francisco Railroad and the Kansas City Southern Railroad now extended into the region. The town of Grandview was formed in December 1889 near the stock pens and depot serving the two railroads. In 1891 the Grandview

Baptist church moved their church building from the edge of the Young's farm into the new town. The church had been established by the Blue Ridge Missionary Baptist Congregation in 1848. The congregation moved the church off the property, leaving a cemetery behind. The cemetery was established by Oliver "Pete" Thompson in 1848. Pete's wife, Matilda, was buried there in 1858.

The Truman family returned to the Young farm in what has been called the golden age of agriculture. During the first two decades of the twentieth century, American farms tripled in value and doubled in gross income. Farm commodities prices soared. In Missouri, corn and wheat prices more than doubled between 1906 and 1916. Agricultural land values also went up. In Jackson County the average property market value for farmland grew from \$71 per acre in 1900 to \$152 per acre in 1910, and then to \$229 per acre in 1920.³ The extraordinarily rich soils, long growing season and abundant rainfall combined with the close proximity of the railroads and the growing demands of Kansas City made Jackson County farmland among the most valuable in the state.

All of the Trumans worked hard on the farm. Under John Truman's direction, Harry and his siblings completed the endless rounds of chores and tasks. Martha ran the household and cared for her mother, who by then was in her late eighties. John employed two daily workers and hired additional help during the busiest times. The hired hands in the area earned a minimum of ten cents an hour, but the Trumans paid 15 to 20 cents an hour and included meals.

Farming in the 1910s relied on animal power. Tractors were introduced in 1913, but were slow to catch on. In 1919 there

2 Richard Kirkendall, "Harry S. Truman, A Missouri Farmer in the Golden Age", in *Agricultural History*, October, 1974. Page 473.

3 Ibid Page 471.

were over a million horses and mules on Missouri farms, and only 7,200 tractors. A horse or mule drawn plow could till an acre in about an hour and a half. A farmer would be happy to see eight to ten acres plowed in a day.

Harry offered an insightful memory of his hours behind a gang plow, made by the Emerson Plow Company and consisting of two twelve-inch moldboards on a three-wheeled frame. The plow was pulled by four horses or mules. He noted “I’ve settled all the ills of mankind in one way and another while riding along seeing that each animal pulled his part of the load.”⁴ Some of that tilling time went into growing crops to feed the horses and mules at the rate of about five acres per animal.

The Trumans planted the wheat and oats using a twelve-disc drill that covered eight feet. They cut the wheat with a horse or mule drawn binder, a machine that replaced the old method of hand-cutting with a cradle-scythe, or cradle. The binders in operation in the early 1900s could also tie the cut stalks into shocks. The thresher, which separates the wheat kernels from the straw stalks, was a big steam-powered machine. Grandview resident Leslie C. Hall owned several threshing machines, moving them from farm to farm where a group of farmers worked together, much to the dismay of Martha Truman. When the men arrived at their farm she had to help prepare huge meals to feed them. Martha did not like to cook and left that chore to others—usually Harry and Mary Jane—whenever she could.

Corn harvests were equally tough. In order to make enough room for the mechanical cutter, Harry would pick two rows of corn by hand, using a curved

husking knife or a peg strapped to the palm of a heavy glove. A farmer hand-picking the corn walked down each row, picking corn from stalks on the right and left, twisting each ear from the stalk and tossing it into a wagon pulled by horses. Harry wrote in a letter that this chore was surely a job invented by Satan.

Hay had its own challenges. At about 80 pounds per bale, moving a load of some 250 bales was an exhausting job. Perhaps the worst part was loading the bales into a railroad car. The rail lines crossed through the Young’s farm with stops located a mile south in Grandview and a little farther to the north in Hickman’s Mill. Managing the weeds, fertilizing, and maximizing the crops kept the Trumans busy, but they also built two new barns, installed an outhouse and improved the hog pen.

The Trumans planted about half of the farm acreage, and used the other half as pasture. They employed new techniques to improve the soil by spreading manure on their fields, and rotating crops. They planted “clover”, a nitrogen-fixing plant that could replace the nutrients depleted by wheat and corn. They followed the clover with corn, then oats, and then wheat. The rotation boosted crop production and the clover provided additional feed for the cattle.

Most of the corn crop went toward feeding the farm animals. Harry got up every morning at five a.m. to do this chore, while his father did the milking.

Cattle could be sold to nearby consumers in Kansas City, or shipped farther away on the train. The Trumans had some registered Shorthorns. Harry was not fond of cattle, particularly after one cantankerous calf bucked Harry over his head, breaking his leg. The Trumans raised hogs, specializing in the Hampshire

⁴ Robert Ferrell, editor. *The Autobiography of Harry Truman*. Boulder: Colorado Associated University Press. 1980. Page 30.

breed. A cholera epidemic killed most of the hogs in 1912, but by 1917, the farm had 40 hogs. The Trumans also raised chickens, a necessity, if only because fried chicken was the only meal Martha liked to make. The family had quite a few chickens, counting 65 in a 1910 report.

After 42 years on the farm, Harriet Young died at the age of 91 in 1909. Harriet left the property to Martha and Harrison. The other siblings challenged their mother's will in a lawsuit that questioned their sister and brother's character, which dragged on for over five years. The Truman family continued to farm during the legal battle over who actually owned the land.

Vivian married in 1911 and moved away to start his own farm. John Truman hired a worker to replace Vivian and Harry found himself sharing his bedroom with hired hands. A heavy blow came when John died in November 1914. It is not totally clear how John died. He apparently had an obstruction in his stomach related to a hernia he developed when moving a large boulder as part of his non-farm job as a county road overseer. After John's death, the burden of running a 600-acre farm fell to 30-year-old Harry Truman. Harry worked hard to manage the daily operations and realized a profit for the farm.

Up until his father's death, Harry's life had been exceedingly full. His non-farm activities filled every extra hour. He was a member of Company B of the Missouri National Guard for two terms from 1905 to 1911. He was a Mason, and a member of the Farm Bureau, the Grandview Commercial Club and the Modern Woodmen. Except for the National Guard, he was elected by the members to leadership roles in each of these organizations.

He did not let up after John's death. Harry resumed his father's position as a county road overseer until political changes ended his appointment in 1916. He applied for, and was appointed to, the postmaster job in Grandview in December 1914, only to assign the duties and salary for the year 1915 to another. He also filled a vacated position on the Hickman Mills School District board from 1916 to 1917.

All of these extra-curricular activities paled in comparison to his enthusiastic courtship of his future wife. Bess Wallace was a "city girl" he had known in school in Independence. During their courtship from 1910 to 1917, Harry wrote weekly letters to Bess and visited her almost every weekend.

Harry's regular trips to see Bess and his travels to other chapters of the Masonic organization took him away from the farm on a regular basis. He was impressed by the automobile, a brand new invention that promised to make his travels a little easier. In April 1914, Martha Truman provided Harry with \$650 to buy a 1911 Stafford automobile, a five-passenger touring car with the top attached by straps to the front part of the frame.

The open car needed shelter from Missouri weather. Harry purchased a store building in Grandview, moved it onto the farm, and converted it into a garage. Harry Truman's nephew would later remark that he had been told the garage was a former Grandview post office that his uncle moved after his term as postmaster ended in the middle of 1915. The Truman Library archives provide a clue to the origin of the store. The archives contain a copy of a deed from 1915, wherein Harry purchased a barber shop on Lot 4 of Block 10 in Grandview from G.A. Kinchloe.⁵ The deed described the purchased goods as a metal

5 HSTL, General File 1876-1951, Box 23.

barbershop with two barber chairs and all of the associated contents of the shop. It is possible the post office was also located in this shop until 1915, when he moved it to the farm.

The automobile was a useful but significant expense for the Trumans in 1914. The protracted lawsuit over Harriet Young's estate was finally settled that year, affirming Martha Truman and Harrison Young as the rightful owners of the farm. This made them responsible for a \$9,500 cash settlement to their siblings and \$3,000 in attorney fees. Martha mortgaged the farm for \$7,500 to pay these debts.

Feeling the pinch of the farm debt and the desire to make enough money to meet the expectations of his future wife and mother-in-law, Harry considered land speculation in South Dakota and Texas, losing money in investments in a lead and zinc mine and an oil venture. The failed ventures drew down on the farm profits as Harry's mother helped him pay off his debts.

Martha Truman increased the mortgage to \$25,000 in 1917. The increase may not have been too alarming for the times. Farm lands and commodities prices were still going up and the Trumans agreed with the widely-held belief that farm land values would continue to rise. A \$25,000 mortgage on a 600-acre farm valued the land at a little more than \$41 an acre, a value that was way below Jackson County farm values for the time.

Harry was probably not worried about the mortgage when he enlisted in the Army and went to Europe to fight in World War I. In June 1917 he rejoined the Missouri National Guard and was elected first lieutenant of Battery F, 2nd Missouri Artillery. In August he was sworn into regular army service as a

member of 129th Field Artillery regiment and went to Camp Doniphan at Fort Sill, Oklahoma. His regiment shipped out to France in April 1918 and remained there until April 1919.

While Harry was away, Mary Jane managed the farm with the help of a hired man who lived in a separate house on the property. Many years later, Mary Jane remembered that even though they had difficulty in war time finding additional good help, the farm was productive in those years.

Harry returned in 1919 to marry Bess. Mary Jane was reluctant to continue running the farm on her own, so the family sold their farm equipment and leased the land. Harry sold his part of the ownership in the property to his mother, and moved in with Bess and her mother in Independence.

Mary Jane and Martha stayed on the farm, living in the house. They may not have realized it at the time, but the Trumans ended farming at the end of farming's golden age. Farm prices peaked in 1920 and began a long, nation-wide decline. Missouri farm property values dropped 40% in the 1920s. State taxes tripled in that decade and about half of all Missouri farms were mortgaged.⁶

In the 1920s, progress encroached on Grandview and the Truman Farm. The Trumans granted rights-of-way to the Kansas City and Grandview Railway, and to Jackson County to extend Blue Ridge Boulevard through their land. They also granted right-of-ways to the Missouri Highway Department for the extension of State Highway 71 through the property, and to the Kansas City Power and Light Company. The negotiations with the

⁶ Statistics on Missouri farms in this paragraph are from Richard Kirkendal, *A History of Missouri Volume V, 1919 to 1953*. Columbia: University of Missouri Press, 1986. Page 56.

power company in 1929 likely brought electricity to the property. In this respect the Trumans were well ahead of the rest of rural Missouri. By 1940, only 18% of Missouri farms had electricity.⁷

In 1927, Vivian and his wife, Luella, purchased some of the former Young farm property located to the north of his grandparents' house. They built a home there in 1930 and farmed the land. Their oldest son, John, managed the farm in the first half of the 1930s.

In 1922, Martha subdivided approximately 60 acres of the property into 11 lots and sold them as the Truman Subdivision. Even with the sale of 60 acres, she only managed to pay the interest on the farm mortgage. Things came to a head during the Depression, when the holder of the mortgage told the Trumans they would need to find another entity to take over the note. In an unusual move, the local school district agreed in April 1938 to assume a \$35,000 mortgage on the farm. The mortgage was increased from \$25,000 to consolidate other debts. The Trumans did not make the one-year payment schedule. After a few years of attempts to renegotiate the note, Jackson County foreclosed on the farm on July 16, 1940.

The foreclosure forced Mary Jane and Martha to leave their family home in 1940. They moved into a house in Grandview at 1003 High Grove Road. Jackson County rented out the Farm Home from 1940 to 1945, when the county put the land up for sale. A family friend, Charles F. Curry, led an effort to return the land to the Truman family. Working with E. Kemper Carver and Tom Evans, he submitted the winning bid of \$43,500 to the Jackson County Court to purchase the land. Vivian Truman had already committed to provide \$20,000 to buy the

Farm Home and its associated 87 acres from the partnership. He purchased the land in 1945 and deeded it to his brother Harry in 1946. The partnership sold the remaining 200 acres in 1946 to Harry Truman for \$20,000.

Harry Truman participated in this brief but anguish-filled period of land transactions from a distance. He left the farm in 1919 to start a men's clothing business in Kansas City. When his business failed, he turned to politics and won a seat as a Jackson County Judge, which was actually the equivalent of a county commissioner position. He served as a county judge from 1923 to 1935 with a two year break from 1926 to 1927, when he lost that election. He went on to a seat in the United States Senate in 1935. His 1940 campaign for re-election to the senate included political maneuvers from his opponent, who raised the issue of the family farm mortgage and pressured the foreclosure on the property.

Truman won the 1940 election and remained in the senate until he was elected vice-president to Franklin D. Roosevelt in the 1944 election. While his family struggled with the farm note, Truman struggled with his own finances. He finished paying off his debts from the failed clothing store in 1935, but his senate campaigns created new financial burdens. He was on such a tight budget during his campaign for the senate in 1940, that one night he could not afford a hotel room, so he slept in his car. Truman finally settled his debts and became solvent after the 1940 senatorial race. Fortunately, the Democratic Party funded a large part of the vice-presidential campaign.

Upon the death of President Franklin D. Roosevelt and with less than three months of experience as vice-president, Harry Truman assumed the presidency

⁷ Ibid. Page 303.

on April 12, 1945. The new president was consumed by the demands of the job. His first year in office included some of his most important actions and must have absorbed all of his time and energy. The critical farm land purchase had just been completed on February 25. Without the help of Vivian in Grandview, the Truman farm transactions might not have happened. President Truman, with Vivian's help, found time to make some additional small land purchases to add to the farm holdings.

Even though the Trumans had reclaimed the Farm Home, Martha was now too frail to return to her old home. She broke her hip in 1945 and moved with Mary Jane into a one-story home at 604 (now 602) High Grove Road in Grandview, where she died in 1947 at the age of 95.

Vivian, with his sons Gilbert and Harry, worked the farm in the 1940s and 1950s. Young Harry moved into the dilapidated Farm Home with his wife Dorothy in 1948. They had no indoor plumbing the first year they lived there. In 1949, water from the Grandview municipal water system was connected to the house and the Trumans built a bathroom on the first floor. The farm report used for President Truman's 1949 tax return showed the new bathroom cost \$500.69 for plumbing, carpentry, electrical work and fixtures.

The young Trumans enjoyed many benefits of mechanized farming that had developed since the animal-powered days of the 1910s. They focused on dairy farming, building a milk barn complete with a vacuum milking system, a hot water heater and a milk cooler.

During his second presidential term, President Truman contemplated developing his presidential library on the farm. He approached the architectural firm Neild-Somdal Associates in 1950

to develop conceptual drawings with a particular emphasis on reconstructing the old Solomon and Harriet Young house.

The plans for the Truman Library stayed on the table until early 1954. The now-retired president hesitated on the Grandview location. Historians suggest a variety of factors that created the uncertainty in Mr. Truman's mind. The location was not convenient to the Truman's Independence home; the town of Grandview did not offer much lodging or ease of access for out-of-town researchers, and the donation of the acreage for the library facility reduced the land available for development. In July 1954, the City of Independence offered a site for the library, which Truman accepted.

The presidential library was one of two significant developments proposed for Grandview in the early 1950s. The Air Force planned to convert the Grandview airport into a large base. The 19 million dollar project would have expanded the airport to support the Continental Air Command and the Central Air Defense Headquarters. The proposed development sent Grandview area land prices soaring for a short time before the project was disbanded.

Although neither the library nor the air base were developed, Grandview experienced its share of growth. The prosperity and expansion of Kansas City after World War II transformed many of the area's rural properties into suburban developments. While reporting on the two projects, U.S. News and World Report painted a clear picture of the boom in Grandview. "Even before this prospect developed, however, the demand for property had been making some land too valuable for ordinary farming. A few of the larger farms had become estates for city

people....Other farms are subdivided....for suburban homes.”⁸

The U.S. News and World Report article also offered some insight into the Truman holdings. “All of this has made the Truman farm, one of the largest and best in the area, a matter of lively interest to real estate developers. Would-be buyers show up every week or so. Brokers report many offers for the land....Estimates are that the farm now would bring \$350,000 to \$500,000 if subdivided and sold. The best acreage would undoubtedly sell for \$800 to \$1,250 an acre.”⁹

Harry S Truman’s decision to locate his presidential library in Independence opened other options for the farm. The potential profits from developing the farm land were particularly important to the former president who left Washington, D.C. in early 1953 without a steady income. Congress did not authorize presidential pensions until 1958. He planned to cover the immediate family expenses with income from publishing his autobiography.

Under Harry’s leadership, the Truman family went into the land development business. In August 1955, the Trumans sold 105 acres to Columbus, Ohio developer Don Casto for approximately \$130,295. Known for his development of automobile-focused shopping centers in the Midwest, Don M. Casto, Sr. established a firm that built 27 regional shopping centers and malls. Radio commentator Paul Harvey described him as “the man who changed the shopping habits of the free world.” Many of the Casto developments were called “Town and Country” shopping centers with a descriptive prefix related to the location of

the center. Casto and his son, Don Casto Jr., planned to develop the farm land into the Truman Corners Town and Country Shoppers City.

Gilbert and Harry Truman, who had been farming on the land, sold 74 dairy cattle at an auction in August 1955 and moved their operations to a 400-acre farm in Louisburg, Kansas.

In 1955, the Trumans also sold 18 $\frac{3}{4}$ acres to the Mary Don Company, a Kansas City real estate firm owned by Mary Agnes Donnelly and her husband Cornelius Edelbrok. The Mary Don Company subdivided the land into 71 lots.¹⁰

The next year, in 1956, the Trumans sold a strip of land on the east side of Highway 71 to the Missouri Highway Department for \$13,864. The sale was a win-win for the Highway Department, which would expand the highway and for the Trumans who could offer better access to their properties.

With the development underway, the Trumans rented out the old Farm Home to the Williams family for \$65 a month. While living in the house, the Williams family did some repairs to the foundation, installed concrete floors on the porch and patio, and re-shingled the roof. In spite of their work, the house continued to decline.

The Truman Corners Town and Country Shoppers City opened to great fanfare on September 12, 1957. Harry, Vivian and Mary Jane attended the opening ceremonies, which included remarks by the former president and the unveiling

8 U.S. News and World Report article photocopy located in the Vertical File on the Grandview Farm at the Truman Library. Article date estimated 1953. Specific date unavailable.

9 Ibid.

10 These sales amounts were listed by Harry Truman in one of his personal accounting ledgers and are located in the Harry S Truman Library. Harry S Truman Post Presidential Papers 1953-1973 Box 492. It was not completely clear from the ledger entries if this sale was for \$65,000 or for \$45,000.

of a plaque. The planned August opening had been delayed by a massive tornado that tore through the Grandview area, ripping the last of Solomon Young's maple trees from the ground and blowing down the old hog house on the farm.

In January 1958, Ben Weinberg of the Triangle Development Company in Kansas City bought the last big piece of the farm. He paid \$220,000 for 220 acres located across Highway 71 from Truman Corners. Weinberg planned a multi-use development of commercial, multi-family and single family housing to be called Truman Village.

The sale to Weinberg left about 40 acres in Truman ownership. Half was the land associated with Vivian's house. Harry S Truman transferred all of his remaining holdings to his nephews Harry and Gilbert in late 1964 and early 1965. After Vivian died in 1965 his wife, Luella, moved to Kansas to live with her sons. They rented their house, and extended the lease of the Farm Home to the Williams Family. The next year in 1966, Solomon Young's big barn burned to the ground.

After Vivian's death, Harry and Gilbert inquired through their attorney if Jackson County would be interested in acquiring and preserving the Farm Home. The County could not meet the asking price of \$200,000, so the Trumans continued to rent the house to the Williams family, who stayed until 1983.

Harry S Truman died in 1972, followed six years later by Mary Jane and Luella. Bess Truman died in 1982. Harry and Gilbert eventually sold Vivian's home and a shopping center was built on the land in 1987.

Various efforts were made to preserve the Farm Home. The Grandview Chamber of Commerce started a fundraising effort

to purchase the house, and was able to have the property listed on the National Register of Historic Places on May 5, 1978. The Harry S Truman Farm Home Foundation formed in 1980 and assisted Jackson County in their negotiations to purchase the Farm Home on 5.26 acres from the Trumans in 1983. The appraised value of the property by then had grown to \$700,000. The Truman brothers agreed to sell the site for half the appraised value and the Foundation worked with Jackson County officials to obtain a \$378,250 grant from the Department of the Interior's Land and Water Conservation Fund State Assistance Program. The Harry S Truman Farm Home Foundation raised funds to repair the home and supported the designation of the site as a National Historic Landmark on February 4, 1985.

The repair of the Farm Home cost at least \$142,198 and was conducted under the direction of George Fogelsong. In addition to the extensive work on the house, a small maple grove was planted and volunteers placed a new smokehouse and privy on the property. An archeological study of the grounds was also conducted. The foundation ran into financial trouble and Jackson County resumed full responsibility for the site in 1987 with a "Friends of the Truman Farm" auxiliary group providing tours.

Jackson County found it difficult to market, manage and maintain the property within its budgetary constraints. In mid-1989, county officials began to work with Missouri congressmen to approach the National Park Service about the property. After considerable review and consideration, Congress passed a resolution authorizing the approval of a donation of the property to the Department of the Interior. Jackson County conveyed the property to the federal government on April 4, 1994. The Truman Farm opened to the public

in 1996. The NPS has since completed a restoration of the garage (2009) and several projects to preserve the historic Farm Home. The NPS continues to maintain the buildings and grounds.



Figure 2-1. The Truman Farm from Blue Ridge Boulevard in Grandview, Missouri, BN 11/23/11

STATEMENT OF SIGNIFICANCE

The historic significance of the Truman Farm is defined in the National Register nomination form and the National Historic Landmark documentation. The farm was listed as the Solomon Young Farm on the National Register of Historic Places (1978 NRHP) on May 5, 1978. The National Register nomination was prepared in 1977, and states the property is significant for its association with Harry S Truman. The 1978 NHRP established the period of significance to be between 1906 to 1917 to correlate with the eleven years Truman spent working on the family farm.

The farm was designated the Harry S Truman Farm Home National Historic Landmark in 1985. The significance stated in this documentation expands the period of significance beyond 1917 to include the on-going relationship that Mr. Truman had with the property after he left the farm. The significance discussion describes how Truman's experiences as a young farmer affected his electability and informed some of his policies when he served in elected office. It also describes the family's use of the property, their struggles to maintain possession of the land, and their ultimate decision and actions to sell the land.

Period of Significance

The period of significance for the Truman Farm is 1906 to 1965, which represents the time Harry S Truman had a primary role in the management and operations of his family's farm. This period includes the years between 1906 and 1917 when Harry lived and worked on the family farm in Grandview, Missouri.

The "Specific dates" indicated in the significance discussion in the National Historic Landmark documentation are

"1867–present." It is not clear if the reference to the present means the date when the Landmark documentation was prepared (1984) or the present moment for the reader. New information has come to light since the NHL documentation was completed. This new information offers a rationale for changing the end date of the period of significance to 1965.

In June 2011, the Truman Library released new documents to the public. Much of the newly released information concerns the Trumans' business dealings after 1954. This information clarifies some of the details about the Truman Corners Shopping Center, the Truman Heights project and other development of the former farm land. The recently released data verifies that the Truman family farmed and managed the property until 1955 and then, under the leadership of Harry S Truman, participated in the development and sale of the farm land. By late 1964 or early 1965, Harry Truman had transferred all of his remaining ownership in parcels in the Grandview area, including the Young Farm Home, to his nephews. Since these last transfers ended his life-long association with the Grandview properties, it would be appropriate to end the period of significance in 1965 to reflect the end of his involvement in the Grandview properties.

Comparison to Other Agrarian Properties in the Region

The remaining small parcel that comprises the Harry S Truman Farm Home National Historic Landmark is a remnant of the large original farm. The Truman Farm conveys the sense of an agrarian property, but it no longer retains the original barns and long-distance vistas of land that are typical character-defining features of farms.

The Farm Home, with its vernacular form and modest trim is a typical rural home. The form, known as an I-House, was ubiquitous throughout rural Missouri, beginning in about 1840.¹¹ It was a very popular house form in the Grandview area up until the 1930s.¹²

Consultation with David Jackson of the Jackson County Historical Society and via an email exchange with Judith Deel of the Missouri State Historic Preservation Office did not identify any well-known outstanding examples of vernacular farm houses in the region. However, a windshield survey of the area surrounding Grandview determined that other vernacular farmhouses of a similar size exist in the region. Many of these houses did not appear to have any association with farm land and may have survived piecemeal development of their associated land, just as the Truman Farm did. The National Register of Historic Places does not include any agrarian properties with vernacular farmhouses in Jackson County. The register has some very large farms that thrived in the 1920s and later, but they are not comparable to the Truman Farm. They include the Longview Farm, located on Longview

Road in Lees Summit, and the Four Gates Farm, located at 13001 Little Blue Road in Kansas City, which was more of a rural retreat for a wealthy owner. One somewhat comparable farm on the NRHP is located at the edge of the community of Lees Summit, about ten miles east-northeast of Grandview. It is the Bailey Family Farm, which was established by 1880 and continues to operate today. The Bailey Farm is listed as a historic district on the NRHP and has character-defining features such as open spaces and fields, barns and a house. The farm has about 240 acres. The farmhouse, however, is not a vernacular form. It was built in 1914 to replace a former house and is a very good example of Prairie School-style architecture.

The historic resources located in Lees Summit have also been documented and described as part of a listing on the NRHP via a multiple property listing nomination. The nomination indicates there are numerous similar vernacular homes in the community, as they were a common building form up to the late 1890s.

11 Howard Wight Marshall. *Vernacular Architecture in Rural and Small Town Missouri*. Columbia, Missouri: University of Missouri Extension Publications. 1994.

12 Sally F. Schwenk. "National Register of Historic Places Inventory/Nomination Form for the Grandview Residential Historic District". National Park Service. 2005. Section 8, Page 38.

PERIODS OF LANDSCAPE DEVELOPMENT

The following periods of landscape development describe the physical evolution of the Truman Farm's cultural landscape from the mid-19th century through present day.

The beginning and end of each period corresponds to, and documents, points of major change in the management of the farm. Some of these dates also correspond to major physical changes.

Pre-History (pre-1856)

Young Farm (1844 to 1905)

Harry S Truman Farm (1906 to 1917)

**Martha Ellen and Mary Jane Truman
Farm
(1917 to 1940)**

**Farm Foreclosure and Repurchase
(1940 to 1955)**

**Truman Corners Development and Selling
the Farm (1955 to 1965)**

Modern Day (1965 to present day)

The following narrative text, photographs, drawings, and illustrations present the periods of landscape development.

Pre-History (pre-1856)

Prior to cultivation, the land of the Truman Farm was a long-grass prairie interspersed with woodland groves, typical for the region. Situated between the Big Blue and Little Blue Rivers, the landscape would have been open prairie with glades of trees that followed the natural drainages.

Before European-American settlement, the land was inhabited primarily by the Osage people, who lived in decentralized villages that extended from the Mississippi Valley to the eastern Plains to the Ozark Mountains.¹³ The Osage hunted game and made semi-annual trips to hunt buffalo on the Plains, while also growing corn, squash and other vegetables near their villages.¹⁴

In the late 18th century, Missouri was part of Upper Louisiana which was technically part of France at the time. By the 1800s, increasing numbers of Europeans moved into the area. After the Louisiana Purchase in 1803, Missouri became a state in 1821.

The increasing migration of homesteaders moving west from the eastern states from the 1830s to the 1860s, resulted in Missouri's population almost doubling with every decade. Most of the newcomers were American-born farmers who practiced subsistence farming prior to the Civil War.¹⁵

pre-1800

The Osage people farmed and hunted at the border of the Plains and Woodlands in the area now known as Jackson County, Missouri.

1821

Missouri became the 24th state of the Union.

1841

Solomon and Harriet Louisa Gregg Young, Harry S Truman's maternal grandparents, moved to Jackson County, Missouri from Kentucky.

While in their early twenties Solomon and Harriet married and farmed in Kentucky. They moved to Missouri with two children (the couple would have seven). They sought public land as part of the Preemption Act of 1841, which granted ownership rights to U.S. citizens and aliens who had established farms on unclaimed public lands.¹⁶

¹³ Peter J. Kastor, *Making Missouri American: A Crowded Frontier in the Age of Lewis and Clark*, State Historical Society of Missouri, 2004.

¹⁴ Ibid.

¹⁵ Ibid.

¹⁶ Gail E.H. Evans-Hatch and D. Michael Evans-Hatch, *Farm Roots and Family Ties: Historic Resource Study, The Harry S Truman Grandview Farm, the Wallace Houses, and the Noland House in Independence*. Silverton, Oregon: Evans-Hatch Assoc., 2001, 3.



Figure 2-2. The Solomon Young Barn was built in 1867 and modified twice in later years, before burning to the ground in 1966. It was originally built as a crib-style barn, a style most typically associated with areas of Kentucky and Tennessee. Their style was typified by a central drive running the interior length of the barn with stalls for animals located on either side. At the Truman Farm, a large flattened and fenced barnyard extended to the south of the barn. HSTL 84-12-04, c.1900

Young Farm (1844 to 1905)

This period of development captures the time in which Harry S Truman's maternal grandfather, Solomon Young, purchased the land, developed the farm, and expanded his holdings. It includes the death of Solomon Young in 1893, at which time his widow, Harriet Louisa, ran the farm with the assistance of Harrison Young, Harry S Truman's uncle. This period also captures the birth of Harry S Truman in 1884, and the movements of his family as they moved from Lamar to the farm for three years, then to Independence, and back to the farm in 1905. The period ends in 1905, when Harrison Young recruited his brother-in-law, John Truman, to take his place on the farm. John Truman, with his wife Martha Ellen and daughter Mary Jane, Harry's father, mother, and sister respectively, moved to the farm in 1905.

The Young Farm was originally situated on 398 acres of land north of Grandview, in Township 47 North Range 33 West, Section 14. Their landholdings soon expanded to 591.55 acres.

The first building on the property was a small cabin, located to the east of the present Farm Home. The second home was built in 1867 and burned in 1894, and was replaced by the current house shortly afterwards. Other structures built by the Youngs included barns and outbuildings necessary for operation of the farm and household. A portion of the farm land was cultivated while the remainder was used as pasture for cattle.

1844

After emigrating from Kentucky in 1841 to Jackson County, Missouri, Solomon and Harriet Louisa Young purchased the first portion of what would later become the Truman Farm in 1844.

Solomon Young, Harry S Truman's maternal grandfather, acquired 398 acres of farmland north of Grandview, Missouri.

A small brush-roofed log cabin was already located on the property.

1850 to 1851

Solomon Young acquired parcels in Section 13, Township 47N Range 33W, adding to the acreage of his original farmland.

1851

John A. Truman, Harry's father, was born to Anderson Shipp Truman and Mary Jane Holmes Truman, in Jackson County, Missouri.

1852

Martha Ellen Young, Harry S Truman's mother, was born in Jackson County, Missouri. She was the seventh and second to last child of Solomon and Harriet Young.

1853

The Youngs and the Blue Ridge Baptist Church had conflicting claims on who owned the property along Grandview Road. The Baptist Church had been built, and a cemetery was also located on the property.

1861 to 1865

During the Civil War, the Young family lost animals and supplies, and were forced to feed and house Union Soldiers. Later, they were evicted from the farm in 1863 by General Order 11 and forced to move to Platte County, Missouri until after the war.

1867

Harriet Young bought land in sections 11 and 13 from Thomas A Smart.

Solomon Young built a wood frame house on a limestone foundation that measured 43' x 18'.

He also built outbuildings associated with farm operations, including a large barn (Solomon Young Barn), a coalhouse located near the house, and a 200 gallon cistern east of the barn.¹⁷ Solomon Young may have also built the smokehouse, granary, and small barn but this is not fully documented.¹⁸

1868

Solomon Young planted a sugar maple grove west of the 1867 house that extended towards the entrance gate on Grandview Road.¹⁹ The entrance to the house was along a dirt road, located just south of the grove.

1881

John Anderson Truman and Martha Ellen Young were married in Grandview, Missouri. They moved to Lamar, Missouri where John Truman traded livestock.

1884

Solomon Young purchased 160 acres in section 11 from JF Musselman, adding to the farm's acreage.

1884, May 8

Harry S Truman was born to John and Martha Ellen Truman in Lamar, Missouri.

17 National Park Service, *Cultural Landscapes Inventory, Truman Farm, Harry S Truman National Historic Site*. Omaha NE: Midwest Regional Office, National Park Service, 2010, 18.

18 Robert T. Bray, *Archaeological Survey and Testing at the Truman Farm Home and Grounds – Grandview, Missouri*. Independence: Truman Farm Home Foundation, 1983. 37, 48..Archeological evidence suggests the foundation remains of these barns date to the Solomon Young period.

19 NPS, *CLI*, 53.

1886

John Vivian, Harry's brother, was born to John and Martha Ellen Truman in Lamar, Missouri.

1887

John and Martha Ellen with Harry and Vivian moved to the family farm. The family lived there for three years, from 1887 to 1890.

1889

Mary Jane, Harry's sister, was born to John and Martha Ellen Truman on the family farm.

The Kansas City Southern and San Francisco Railroad was built, crossing the Young's property in Section 11.

The town of Grandview was platted near the depot serving the St. Louis and San Francisco Railroad, and the Kansas City Southern Railroad.

1890

The Truman family moved from the farm to Independence, Missouri, where the children could attend better schools.

1891

The Youngs quit filing competing land claims with the Blue Ridge Baptist Church, then located on Grandview Road, after the church was moved off the property and into Grandview. The cemetery remained.

1893

Solomon Young died in 1893. At the time of his death, he owned at least 1,500 acres of land, however it is unclear how much of it was contiguous. Solomon died without a will, and Harriet Louisa gave 160 acres to each of the seven children, along with \$50,000 to \$60,000 in personal property to

be divided among them. She retained the 600-acre farm and operated it with the help of her son, Harrison Young, Harry's uncle.

1894, October

In October 1894, the original 1867 house built by Solomon and Harriet Young was destroyed by fire. Nothing was saved but some bedding.²⁰

1894 to 1895

Between the end of 1894 and sometime in 1895, Harrison Young built the house that now stands.²¹

The extant Farm Home appears to have been completed in two stages. The central section of the east wing was built first, constructed above a full basement of fieldstone set in primarily clay mortar and was probably the root cellar of the original Young 1867 house. The front (west) two-story portion with the sitting room, parlor and two bedrooms was built later, on a brick foundation, as was a one-story kitchen, on brick piers.²²

c.1900

The extant poultry house was built and was located north of the Farm Home.

1901

Harry graduated from High School in Independence, Missouri.

John Truman lost all of the family's savings, including money that would have paid for Harry's college, on grain futures investments.

The family moved to Kansas City. Harry worked for a railroad.

1904

A plat book from 1904 indicates Harriet Louisa Young owned 519 acres, and Harrison Young owned 80 acres.

1903

The Truman family moved from Independence to Kansas City, Missouri.

1905

John, Martha Ellen, and Mary Jane moved from Kansas City to Clinton, Missouri. Mary Jane was 16, Harry and Vivian stayed in Kansas City working as bank clerks.

Harrison Young recruited his brother-in-law, John Truman, to take his place in the management of the farm. Soon, John requested his two sons move to the farm to assist with the farm operations.

Harry enlisted with the Missouri National Guard, Battery B.²³

1905, late

Vivian Truman, Harry's brother, moved to the farm.

²⁰ NPS, *CLI*, 18.

²¹ *Ibid.*

²² Evans-Hatch, *Historic Resource Study*, 17.

²³ Jon Taylor, *Truman's Grandview Farm*, Charleston: The History Press, 2011, 56.



Figure 2-3. Harry S Truman moved to the Grandview farm in 1906, pictured here with his mother Martha Ellen, on left, and grandmother Harriet Louisa Young, seated. A small barn can be seen in the background at right, as well as the well and windlass. A downspout leads from the corner of the back porch to a rain barrel. At the left of the photograph, just north of the house is a small structure, which was possibly the original location of the poultry house. At the right is a large pine tree; the remainder of the yard is unornamented and covered with short grass. HSTL 84-13, c.1906-1909

Harry S Truman Farm (1906 to 1917)

This period captures the 11 years Harry S Truman lived and worked on the family farm. Beginning in 1906, Truman worked as an agricultural laborer, supervised other laborers, and as his father's health declined, he took over accounting and management. This period ends in 1917, when Truman left the farm to serve in World War I. He would never live on the farm again, but would instead influence its management from a distance.

During this period, the family built numerous outbuildings, including at least one new barn, garage, and an outhouse. The poultry house was located north of the Farm Home (it was moved c.1940 to its present location), and an L-shaped chicken yard framed the house. Prior to 1911, a wood woven fence enclosed the house yard, and another wood fence enclosed the barnyard.

The Trumans raised horses, mules, chickens, Shorthorns (a cattle breed good for dairy as well as beef), and Hampshire hogs. For their own use, the Truman's had a garden that included a large asparagus bed, an apple and peach tree orchard, a grape arbor, a blackberry and strawberry patch, and a small kitchen garden. The garden was located east of the house, between the chicken yard and the Solomon Young Barn. According to Truman, a large sycamore tree grew to the east of the large Solomon Young barn.

During this time, Harry S Truman courted Elizabeth "Bess" Wallace, his future wife, who was living in Independence, 20 miles and a day's trip away. Their courtship is documented through their many letters.

Although managing the farm was already a full-time job, Harry also served in the U.S. Army National Guard, was the Grandview postmaster, joined the Farm Bureau, and

was a Free Masons during this time. He was active in his community in other ways, including serving as Road Overseer, and helping the adjacent cemetery with digging graves.

This period ends in 1917, the year Harry S Truman left the family farm to serve in World War I as an artillery officer.

1906, late

In 1906, Harry S Truman left his job in Kansas City where he was working as a bank clerk, and moved to the family farm to assist with the farm operations.

The entire family was now living on the farm, sharing the Farm Home with their maternal grandmother.

By 1906, the smokehouse with storage wings on each side, located near the garage, and the icehouse located just east of the smokehouse are evident in historic photographs although these structures may have been constructed earlier.

In 1906, the farm was much reduced from the Youngs' earlier holdings. When Solomon died without a will, Harriet gave 160 acres to each of the seven children, along with about \$50,000 to \$60,000 in personal property to be divided among them. She retained the 600-acre farm.

Pre-1909

The small barn located just east of the Farm Home was built.

1909

Harriet Young, Harry's maternal



Figure 2-4. Solomon Young planted a large sugar maple grove, left of photograph. Pine trees were located around the Farm Home. A network of wood fences delineated the yard around the house from that of the barnyard and pastureland. A small barn, non-extant, possibly built by Solomon Young, is at far right. HSTL 72-3585, c.1912-1920



Figure 2-5. Left, a young Mary Jane with grandmother Harriet Louisa and uncle Harrison Young. The exact location is unknown, but the barn, on left, appears to be the same as the non-extant barn that was located immediately behind the house. The wooden fence enclosed the house yard. Right, Mary Jane and others around the well with the small non-extant barn in the background, and the large barn (Solomon Young Barn) in the far distance at right. A small structure is north of the small barn, likely a privy. Wood barrels at the corners of the house and porch were likely for capturing rainwater. HSTL 84-12-01, c.1905; HSTL 84-12-09, c.1905

grandmother, died in 1909. A legal dispute amongst her children ensued over her will. Of her seven children, Harrison and Martha Ellen were the only two who inherited her estate. The other five children received five dollars and contested the will.

1909 to 1919

Between 1909 and 1919, Harry raised Shorthorn cattle, at least 15 animals in total.

1910

While visiting his aunt and uncle, Joseph T. and Ethel Noland in Independence, Harry returned a cake plate to their neighbors across the street at 219 North Delaware, and was re-introduced to his old childhood sweetheart, Bess Wallace. A period of long courtship began. Harry became a regular visitor to the Wallace home, travelling by train from Grandview to Kansas City and from there to Independence.²⁴

1911

A plat map dated 1911 noted that 591.55 acres belonged to Solomon Young and Harriet Louisa Young, of which 193.55 acres belonged to Harriet with 398 acres belonging to Solomon. However, since Solomon Young died in 1893, it is possible that the plat map dated 1911 is misdated and these records are actually from an earlier time.²⁵

Vivian married Luella in 1911 and moved from the Farm Home into his own home. He continued farming, moving around the area before settling on land just north of the Farm Home and building a home there in 1930.

24 Ron Cockrell. *Historic Structures Report, History and Significance, Harry S Truman National Historic Site*, Independence, Missouri. Omaha: National Park Service, 1984, 59.
25 Berry Publishing Company, Twnshp 47 North, Range 33 West, HST Archives Grandview Farm Verticle File.

1911, April 17

Harry noted in a letter to Bess that a barn was to be built with an estimated completion in July. “When we get our new barn done we are going to have a barn dance... there will be a smooth floor 50 by 72 and I think that is large enough.”²⁶

1911, August 27

Harry built a grass tennis court in the yard, its exact location is unknown.²⁷

1911, November 28

In a letter to Bess, Harry asked: “Don’t you think a violent green gate will look good with these white stone posts?” He also noted that he was busy the previous day, “making a new gate for the back lot,” which he painted green. He noted that “green is not suitable for the front gate — white is the only safe color for the front gate — gets dark there.” It is possible that the front gate he referred to was located within the sugar maple grove — it would have been located in front of the house and the trees would have made that area dark.

It is unknown where the stone posts were located at this time. They could have been near the house or elsewhere on the large farm, or at the entrance posts at Grandview Road.

1912

By 1912, a one-story kitchen, on brick piers, was built on the east side of the Farm Home.²⁸

Historic photographs indicate that pine

26 Truman, Harry S. *Dear Bess: The Letters from Harry Truman to Bess Truman, 1910-1959*. Edited by Robert H. Ferrell. New York, NY: W.W. Norton & Co., 1983. Letter April 17, 1911. It is unknown where this barn was located, although the dimensions roughly correspond to those of the Solomon Young Barn.

27 Truman, *Dear Bess*, Letter August 27, 1911.

28 Evans-Hatch, *Historic Resource Study*, 17.



Figure 2-6. The Solomon Young barn, left, was built in 1867. A new hay barn built was built c.1911. Both barns are non-extant. HSTL 84-17, c.1911



Figure 2-7. Vivian and Luella Truman were married in 1911 and moved to a neighboring farm. Photographs taken at this time show that the wood fence that had enclosed the house yard had been removed or had fallen into disrepair. It had been replaced with a post and wire fence, which still enclosed the front and sides of the house yard. The sugar maple grove is in the background. HSTL 80-07, c.1911; HSTL 72-3594, c.1911

trees were planted on both the north and south sides of the house.

1912, May 8

Harry noted that “the girls” have made the tennis court into a croquet ground. The exact location of this area is unknown.²⁹

1912, May 21

Harry noted in his letter to Bess in May that he painted the pump handle white. It had originally been black. The pump stood in front of the back door. On a dark night Harry ran into it so he decided to paint the pump white so he could see it at night.³⁰ It is possible that this was also the year the pump was added to the well, replacing the earlier windlass and bucket.

Harry noted in the same letter that the front gate, which was made of cypress, was given “another coat.”³¹

post-1912

After 1912, an addition was built onto the porch at the southeast corner of the Farm Home.

1913

Harry proposed marriage to Elizabeth ‘Bess’ Wallace, but dating continued due to Truman’s desire to make a more lucrative living than farming, and Bess’s family obligations.³²

1914

The legal dispute over Harriet Young’s will was finally settled in 1914. Harrison and Martha Ellen won the suit against their siblings but had to pay a settlement

of \$9,500 to their siblings and \$3,000 to their attorney. Martha took out a \$7,500 mortgage on the farm to cover expenses.

Harry was elected postmaster for Grandview. He did not do any of the work but instead appointed Mrs. Hall, a local widow, to do the job and draw his salary.³³

Harry purchased a Stafford car for 650 dollars. The car helped Harry make more frequent and quicker trips to Independence to visit Bess.³⁴

1914, July

In Harry’s letter to Bess, he noted that Mary Jane ran into a gate and bent the front axle of his car. He stated, “I am very thankful that she hit the gate instead of a stone post.”³⁵

1914, November 3

John Truman, Harry’s father, died. Harry was made the sole manager of the family farm. The farm remained in the ownership of Martha Ellen, his mother.

1914, November to 1916

Harry served as Road Overseer for Jackson County, responsible for collecting the poll tax, which was used to pay for road improvements.

1915

Harry purchased a barbershop with two chairs and associated contents. He moved the building to the farm where he modified it to serve as a garage, presumably to house his new Stafford car. The building had also previously functioned as the Grandview Post Office.³⁶

29 Truman, *Dear Bess*, Letter May 8 1912.

30 Letter to Bess, May 21 1912

31 Truman, Harry S. *Dear Bess: The Letters from Harry Truman to Bess Truman, 1910-1959*. Edited by Robert H. Ferrell. New York, NY: W.W. Norton & Co., 1983. Letter May 21, 1912.

32 Cockrell, Ron. *Historic Structures Report, History and Significance, Harry S Truman National Historic Site*, 60.

33 Truman, *Dear Bess*, 172-3.

34 Cockrell, Ron. *Historic Structures Report, History and Significance, Harry S Truman National Historic Site*, 60..

35 Truman, *Dear Bess*, Letter July 1914.

36 HSTL, General File 1876-1951, Box 23.

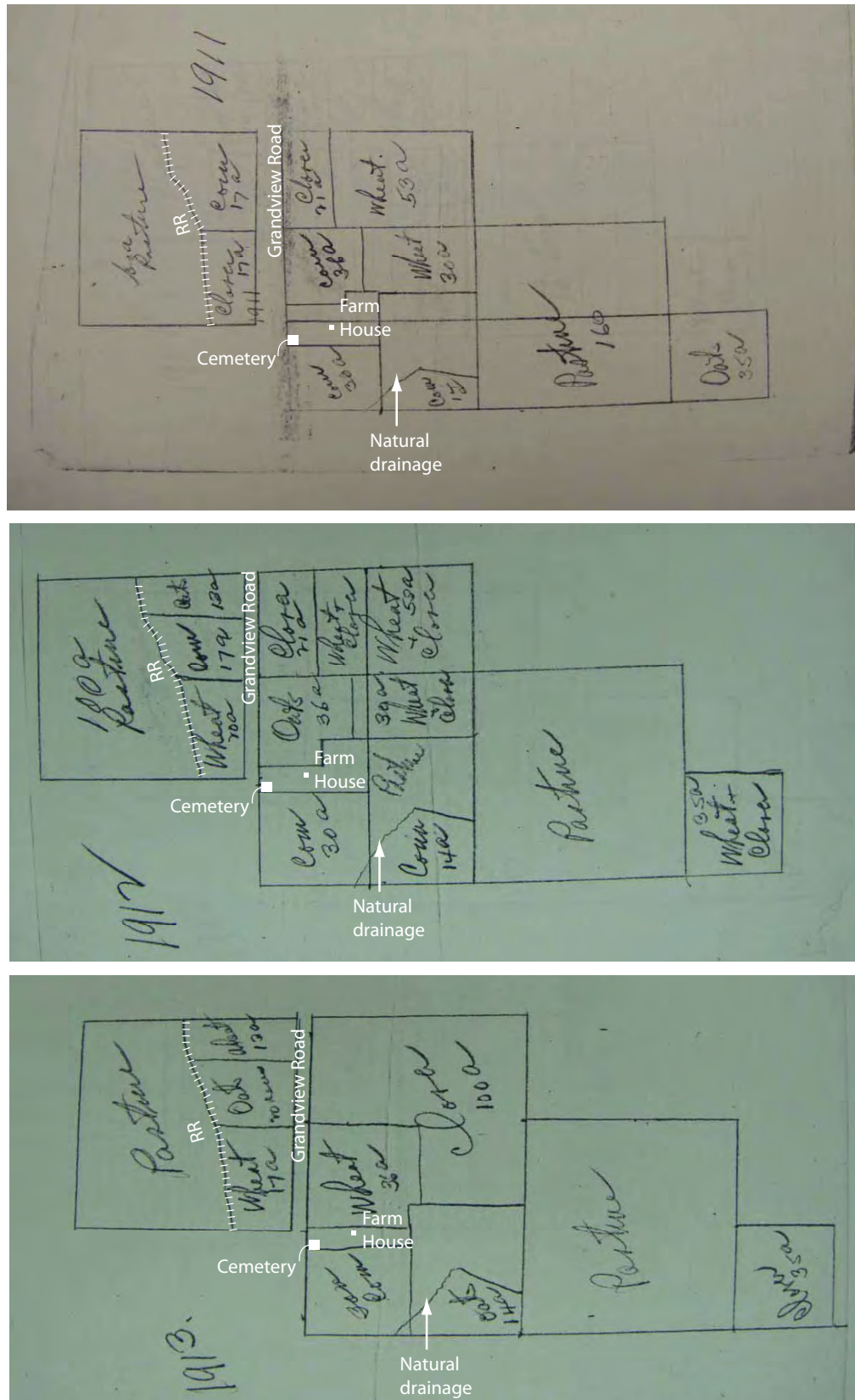


Figure 2-8. Harry Truman kept records of the different crops grown on the farm from year-to-year. Crop rotation improved the soil and prevented erosion, ultimately leading to increased crop yields. HSTL, Mary Jane Truman Papers, Box 1, 1911, 1912, 1913

1916

On February 2, 1916, Harry S Truman wrote in a letter to Bess that “the old house is going to wreck for want of repairs,” indicating the Farm Home was in a period of structural decline. The property was declining “because I must pay interest on a debt I had no hand in making and my dream has to keep waiting.” He also noted that he did not want to remedy the situation by selling the “place that’s been home to her (his mother) so long.”

1917, February

Martha Ellen increased the farm’s mortgage to \$25,000. She was further in debt due to Harry’s failed business speculations which she helped to finance.

1917, June

Harry rejoined the Missouri National Guard and was elected first lieutenant of Battery F, 2nd Missouri Artillery, leaving the farm to serve in World War I. He remained involved in the decisions and management of the family farm from a distance. However, he never lived or worked on the farm again.

1917, August

Harry was sworn into regular army service as a member of 129th Field Artillery regiment and went to Camp Doniphan at Fort Sill, Oklahoma.



Figure 2-9. From left to right, Mary Jane, Harry S, Martha Ellen Truman, Myra Colgan Hornbuckle, Vivian Truman, and Nellie Noland. The Solomon Young barn (non-extant) is in the background, in its 1867 form. HSTL 62-425, c.1906

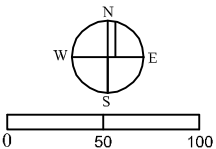
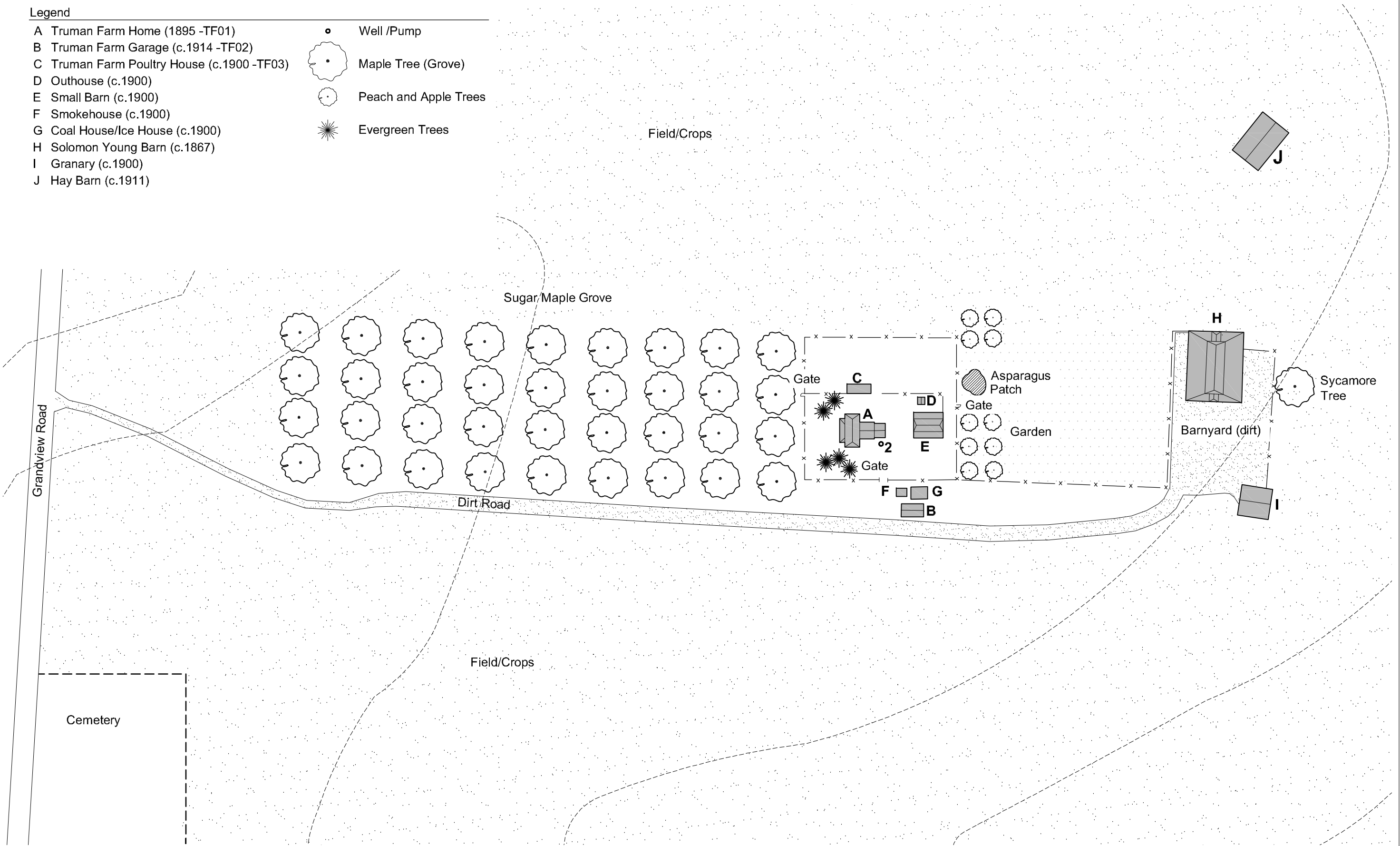


Figure 2-10. Mary Jane with horse Bill, at far right. The granary is just behind, and the Solomon Young barn with modified dormers, is to the left. Another outbuilding is at the far left, perhaps it is the icehouse. HSTL 80-8, c. 1910s.

Legend

- A Truman Farm Home (1895 -TF01)
- B Truman Farm Garage (c.1914 -TF02)
- C Truman Farm Poultry House (c.1900 -TF03)
- D Outhouse (c.1900)
- E Small Barn (c.1900)
- F Smokehouse (c.1900)
- G Coal House/Ice House (c.1900)
- H Solomon Young Barn (c.1867)
- I Granary (c.1900)
- J Hay Barn (c.1911)

- Well /Pump
- Maple Tree (Grove)
- Peach and Apple Trees
- Evergreen Trees



MARCH 2012		FIGURE	
UNITED STATES DEPARTMENT OF THE INTERIOR TRUMAN FARM NATIONAL HISTORIC SITE		TITLE OF PROJECT TRUMAN FARM CULTURAL LANDSCAPE REPORT	
		TITLE OF DRAWING 1906 - 1917 FARM LAYOUT	
		NAME OF PARK TRUMAN FARM - HARRY S TRUMAN NATIONAL HISTORIC SITE	
		REGION MIDWEST	COUNTY JACKSON
		STATE MISSOURI	

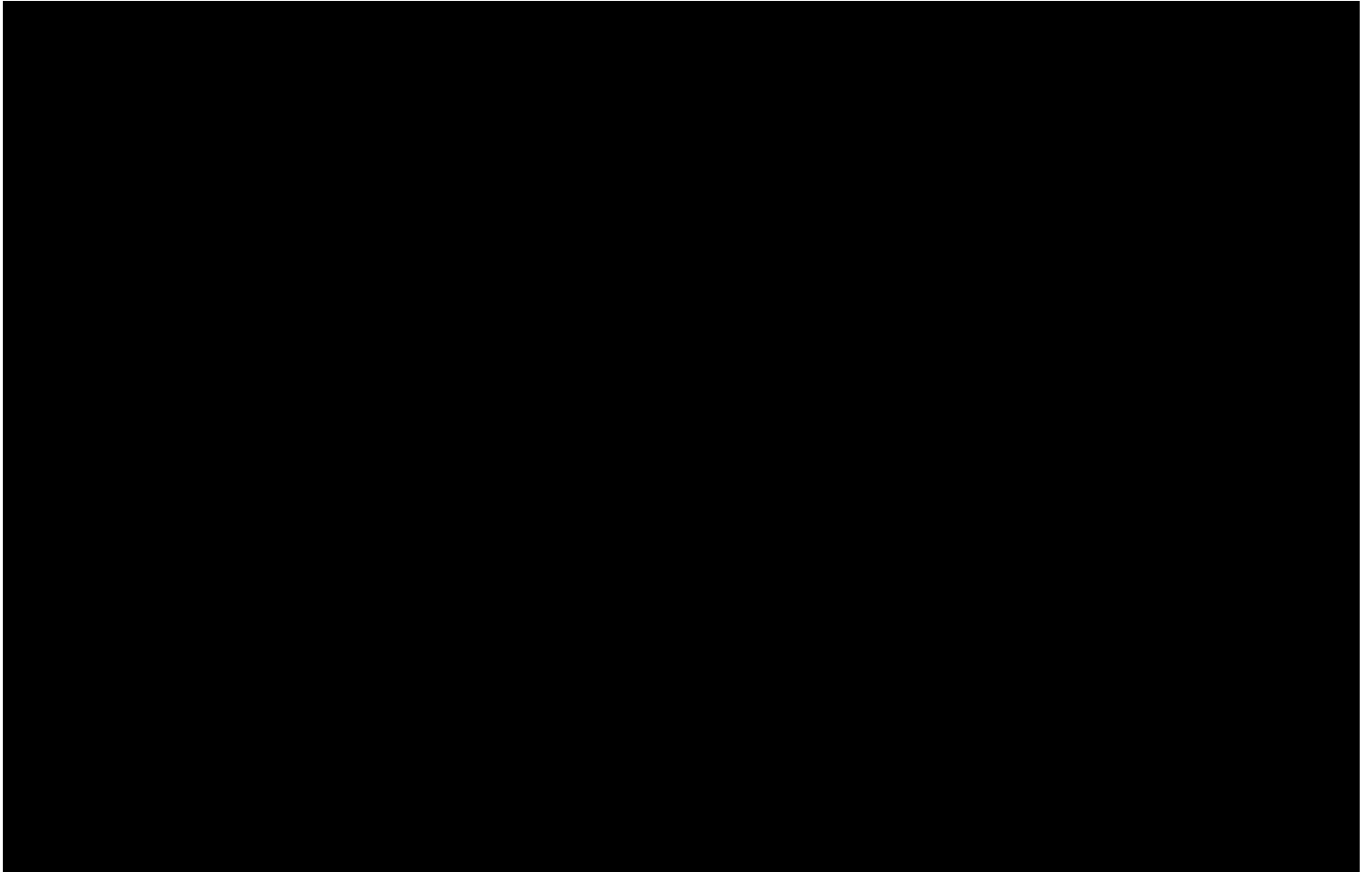


Figure 2-11. By 1920 the Solomon Young Barn was modified with dormers/hay hoods on both the south and north ends. The hay barn is in the background at right. HSTL 62-385, c.1920 - image redacted due to copyright protection.

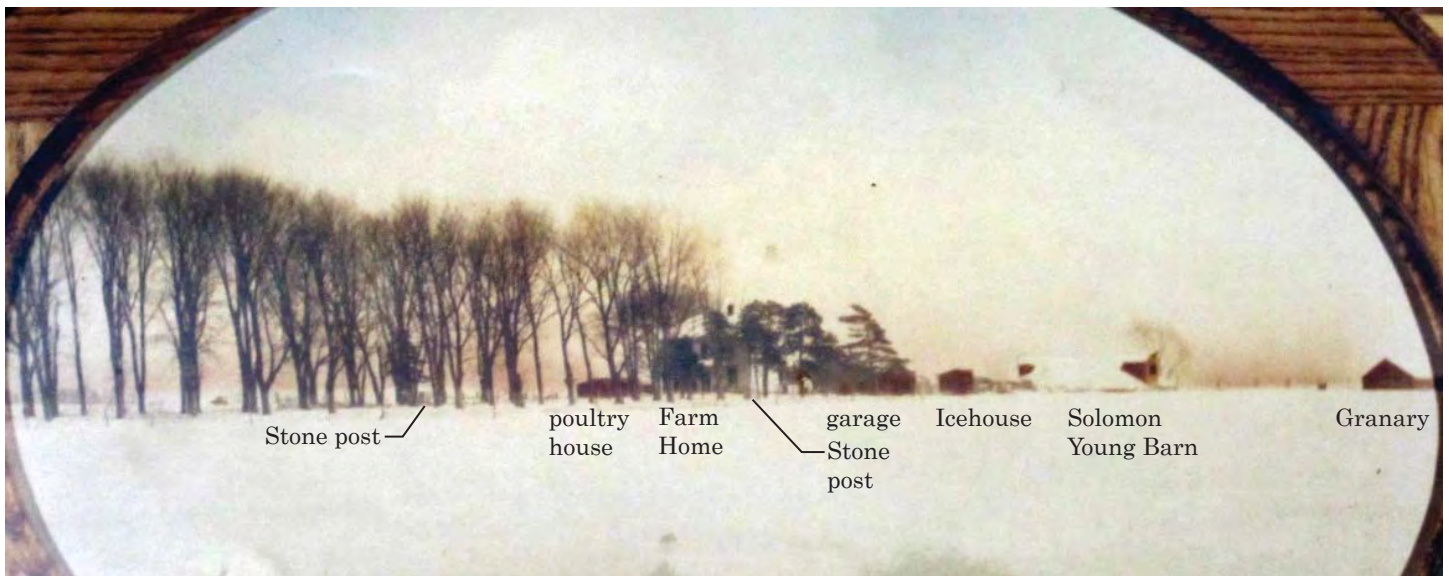


Figure 2-12. This circa 1920 to 1930 view of the farm shows the Solomon Young Barn with its later appearance (hay-hoods). The poultry house is just to the left (north) of the Farm Home, it was moved to its current location c.1940. Just visible are the stone posts at the corners of the Farm Home yard. HSTL 83-127, c.1920-1930



Figure 2-13. The garage was moved onto the farm in 1915, far right. The small shed between the garage and house may have been the smokehouse, icehouse, or coal house. It is unknown if the sheep belonged to the Trumans as no records indicate their ownership. It is possible that they belonged to a neighboring farm, or that the raising of sheep was a temporary business venture. HSTL 84-72, 1930-1940

Martha Ellen and Mary Jane Truman Farm (1917 to 1940)

This period begins in 1917, the year Harry left to serve in World War I and includes the time in which Martha Ellen and Mary Jane managed the farm. This period also includes the initial selling of farm land, 200 acres, for the 'Truman Subdivision' in Section 11, between the Kansas City Southern and San Francisco Railroad and Grandview Road. This period ends with the foreclosure of the farm in 1940.

After Harry left for the war, Mary Jane, his sister, managed the family farm. Upon his return the family gave up farming, leasing much of the land and selling parts. Harry briefly visited the farm upon returning from the war, and then married Elizabeth "Bess" Wallace in 1919 and settled in Independence, Missouri.

During this time, Harry S Truman participated in the farm transactions from a distance. In 1919, he started a men's clothing store in Kansas City. When the business failed, he won a seat as a Jackson County Judge, similar to a county commissioner position, serving in this position from 1923 to 1935 (with a break in 1926 to 1927). In 1935, he was elected to the Missouri State Senate.

Physical changes to the farm during this time period included the removal of the small barn behind the house, the addition of Vivian's home and outbuildings on the land north of the house, and the probable construction of ten stone fence posts, set at corners of the house yard and barnyard.³⁷ It was also during this period that the Solomon Young barn was first modified.

³⁷ References made to the stone posts from HST's letters indicate that these posts may have been in place in 1911 and 1914. However, the posts are not documented in photographs until the 1930s. There is still some uncertainty about their date of origin.

By 1935, a two-story addition was built onto the east wing of the house, replacing an earlier one-story kitchen, and the back porch was fully extended along the house's south side. The poultry house was moved from north of the house to its present location northeast of the house.

1917 to 1919

Mary Jane ran the farm while Harry served in World War I. She also served as Assistant Postmistress for Grandview.

1918, April

Harry's regiment was shipped out to France.

1919, April

In the spring of 1919, Captain Harry S Truman returned from World War I and briefly returned to the family farm. The family soon ceased farming operations. Equipment and livestock were auctioned, and much of the land was leased out.³⁸ Despite this, Martha Ellen and Mary Jane Truman continued to live on the farm until 1940, leasing the land for farming.

1919, May

Harry and Elizabeth "Bess" Wallace were married and settled in Independence, Missouri.

c.1920

The Solomon Young barn was modified, by the addition of dormers on either end to serve as hay hoods.

c.1922

The small barn directly to the east of the Farm Home was removed.³⁹ The date of

³⁸ Evans-Hatch, *Historic Resource Study*, 82-83.

³⁹ Oral History Interview With Martha Ann Swoyer; July 9, 1991; Oskaloosa, Kansas Interviewed By Jim Williams Oral History #1991-5, Transcript, Harry S Truman National



Figure 2-14. Martha Ellen and Mary Jane, Harry's mother and sister, managed the farm when Harry left to serve in World War I. Upon his return they ceased farming, leasing much of the land and selling some parcels. The two women continued to live there. Around this time, a rose arbor was built at the front gate to the Farm Home and roses were lined along the south fence. The fence on the left separated the Farm Home and land from Vivian's land to the north. The hay barn is visible in the background at left and the Solomon Young barn is just to the left and behind the Farm Home. HSTL 84-9, date unknown, prior to 1957

the small barn's construction is unknown but it appears in early photographs prior to 1909.

1922

Martha Truman platted 60 acres and sold several of the plats to a real estate developer. Named the 'Trumans Subdivision,' this portion of land was west of Grandview Road but east of the Kansas City Southern and San Francisco Railroad.⁴⁰

1924

Separate right-of-ways were deeded to Missouri Highway Department for Highway 71 from Martha, Mary Jane, and Vivian.

c.1927

In the 1920s, Vivian Truman purchased a parcel of land to the north of the Farm Home. In 1930, he built a house, a barn, and several outbuildings.⁴¹

1927

Right-of-way granted to the Kansas City & Grandview Railway company from Martha, Mary Jane and Vivian. This new railroad route followed the general alignment of Blue Ridge Boulevard.⁴²

Highway 71 was built, splitting the Truman Farm property along the section line between Sections 11, 12, 13 and 14.

1929

Martha granted right-of-way to Kansas City Power and Light Co. The first electricity reached the farm.⁴³

Historic Site, NPS. Martha did not remember the small barn, indicating it must have been removed before she was born or when she was very young.

40 Evans-Hatch, *Historic Resource Study*, 296.

41 Ibid, 84.

42 HSTL, Post Presidential Papers, Box 941, Warranty Deeds.

43 Ibid.

Martha, Mary Jane, and Vivian deeded separate right-of-ways to Jackson County for the extension of Blue Ridge Boulevard, bisecting the property and separating the west portion of the sugar maple grove and the cemetery from the Farm Home.

1930s

According to Harry's niece, Martha Ann Swoyer, an asparagus bed was located east of the Farm Home just north of the east yard fence, and an L-shaped chicken lot surrounded the yard.⁴⁴ Also, a smokehouse was located near the garage; this could have been the same smokehouse that stood from the time Harry lived on the farm.⁴⁵

c.1930

The ten stone posts are documented in photographs, noticeable at the front of the house yard.

1931

An Atlas Map indicates that Martha E Truman owned approximately 446.5 acres and that Luella Truman, Vivian's wife, owned around 80 acres. The map also illustrates the Trumans Subdivision, approximately 80 acres, between Grandview Road and the Kansas City Southern and San Francisco Railroad.⁴⁶

1932

Martha sold the remainder of the Truman subdivision, 60 acres, to Willock Realty.⁴⁷

1934, post

The house was painted entirely white without the green trim, which had been the color scheme since it was completed in 1895.

44 Interview with Martha Ann Swoyer, 63.

45 Oral History Interview With Fred L. Truman June 18, 1991; Raymore, Missouri; Interviewed By Jim Williams; Oral History #1991-1, Transcript; Harry S Truman National Historic Site, NPS, 29.

46 Evans-Hatch, *Historic Resource Study*, 296.

47 HSTL, Post Presidential Papers, Box 941, Warranty Deeds.



Figure 2-15. The rose arbor on the south side of the house framed the entrance to the back porch. The farm's entrance drive is visible behind the gate. HSTL 84-82-1, c.1920s-1953



Figure 2-16. Harry S Truman's nephews built a milk barn, west of the hay barn, on Vivian Truman's land. HSTL 66-3778, c.1940

1935

By 1935, a two-story addition was built onto the east wing of the house, and the porch was fully extended along the house's south side.

1935 to 1945

Harry S Truman was elected United States Senator of Missouri in 1935, and served in this capacity until 1945 when he was elected Vice President of the United States.

1938

By 1938, the Truman family had sold more than half of the farm's original acreage (<600 acres) with only 287 acres remaining.⁴⁸ The property mortgage was to \$35,000.⁴⁹

1940 to 1944

Alteration and extension of the east wing of the house is evident in historic photographs.

1940, July

On July 26, 1940, a mortgage held on the farm by Jackson County was foreclosed upon, forcing Martha and Mary Jane Truman to move from the family farm.⁵⁰

This was seen to be largely a political move by the opposing political party in an effort to embarrass Senator Truman as he sought re-election.⁵¹

48 Evans-Hatch, *Historic Resource Study*, 87.

49 HSTL, Post Presidential Papers, Box 941, Warranty Deeds.

50 Evans-Hatch, *Historic Resource Study*, 86-88.

51 National Park Service, *National Register of Historic Places Inventory - Nomination Form, Harry S Truman Farm Home*, Missouri: U.S. Department of the Interior, 1984, Form 2.



Figure 2-17. The Truman Farm in 1945, as published in *The Modern Woodman*. The sugar maple grove is in poor condition. The Solomon Young barn, the poultry house, and two other small buildings (unknown) are to the left of the house. The garage is on the right, with another small structure just to the north. One of the stone posts is visible just to the left of the garage. A fence and arbor frames the house. HSTL 2008-311, 1945

Farm Foreclosure and Repurchase (1941 to 1955)

The Truman Farm was foreclosed upon in 1940, in what was likely a political move that would embarrass Harry S Truman as he sought re-election to the U.S. Senate. This period includes the repurchase of the farmland by Truman and his brother, and the continuation of farming by Harry Truman's nephews. The period spans the time in which Harry S Truman served as Vice President of the United States, under Franklin Delano Roosevelt, and the time Truman served as 33rd President of the United States. It ends with the sale of parcels of the Truman Farm by Harry S Truman for commercial development in 1955.

1940 to 1945

Jackson County leases the farm to renters, putting the land up for sale in 1945.

1941

Mary Jane deeded a four-foot wide strip of land to the Jackson County Public Water Supply Division.⁵²

1944 to 1954

During this time, the Solomon Young barn was modified. The entire roof was modified to be a broken pitch gable, with the ends extended to encompass the sections that were previously hipped.

1945

Harry S Truman became Vice President of the United States under Franklin Delano Roosevelt.

1945, April 12

Harry S Truman became the 33rd

President of the United States following death of Franklin Delano Roosevelt. Harry S Truman served as President of the United States from 1945 to 1953.

1945, February

On February 24, 1945, Charles F. Curry, E. Kemper Carter, and Tom Evans, friends of President Truman from Kansas City, purchased the 287-acre Truman farm from Jackson County for \$43,500.⁵³

Vivian repurchased the Farm Home and the 87 acres immediately surrounding it for \$20,000.⁵⁴ In October 1945, Harry purchased this acreage from Vivian.⁵⁵

1946 to 1949

President Truman purchased the 200 acres of farmland back from his friends for \$23,000 as he came up with the money.⁵⁶

1947

Martha Truman died in Grandview, Missouri, aged 94.

Additional land holdings were added to the farm. President Truman listed four 1947 land purchases in sections 12, 13, and 14 in a hand written ledger. Purchases totaled \$65,578.

1948 to 1953

Harry S Truman was re-elected President of the United States.

Truman's campaign focused on his agricultural background and knowledge, and was made famous by his Whistle

⁵³ NPS, *CLI*, 17.

⁵⁴ NPS, *NRHP*.

⁵⁵ HSTL, Post Presidential Papers, Box 941, Warranty Deeds.

⁵⁶ Evans-Hatch, *Historic Resource Study*, 92-93.

⁵² HSTL, Post Presidential Papers, Box 941, Warranty Deeds.

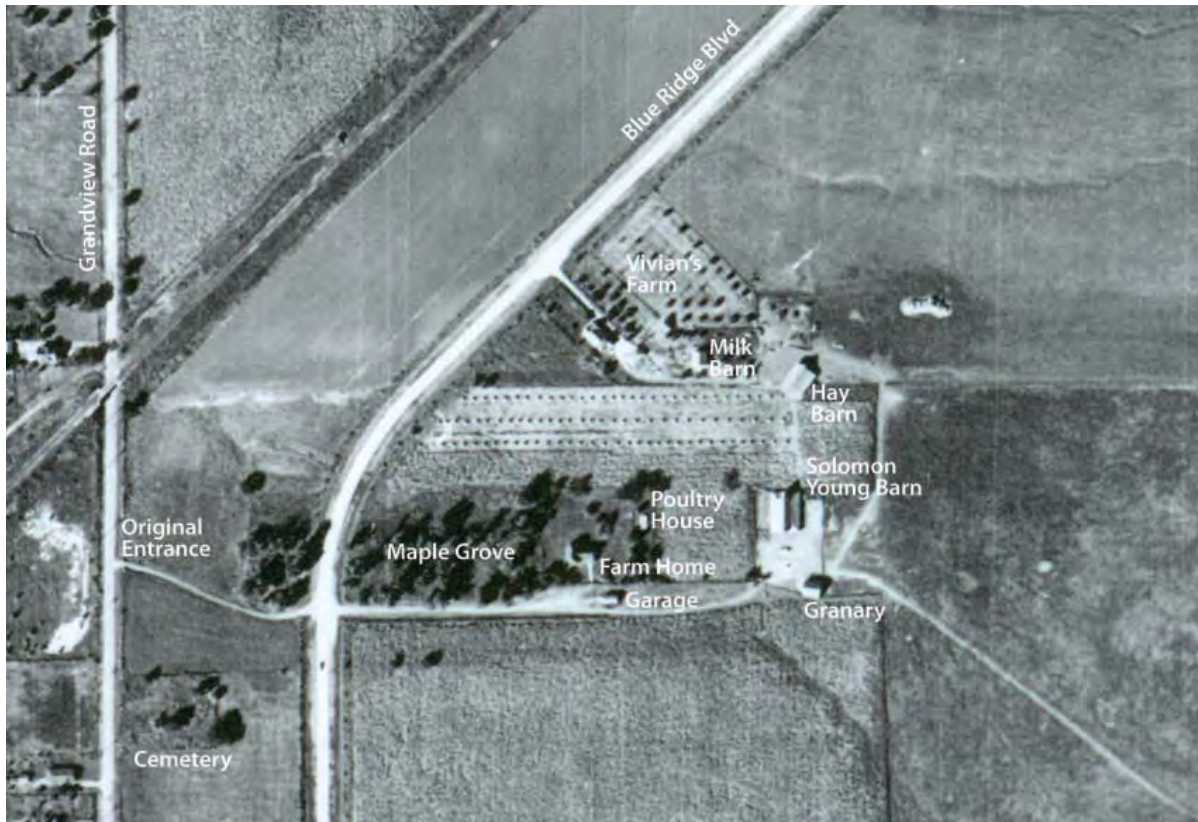


Figure 2-19. Aerial from 1944 showing the layout of the Truman Farm at that time. HSTL, United States Soil Conservation Service aerial, 1944



Figure 2-18. This 1953 photograph is the first color photograph of the farm. The milk barn is on the far left. The red hay barn is in the center, and the distant outline of the Solomon Young barn is just left of the Farm Home. Another structure is in front of the Solomon Young barn, but its outline appears different from the poultry house. Also, fences demark the land between Vivian's land to the north and the Farm Home. HSTL 11/23/1953

Stop Tour of rural America. As president, Truman developed a federal farm program.

1948

Vivian's son Harry A. and his wife, Dorothy, move into the Farm Home.

1948-1951

Vivian and his sons, Harry A. and Gilbert, leased the property from Harry. They focused on dairy farming with a 33-cow dairy herd, and built a milk barn complete with a vacuum milking system, hot water heater, and milk cooler.

1949

City water is piped to the Farm Home, and a bathroom is installed on the first floor.

c.1949

By 1949 the Trumans had re-purchased 540 acres of the farmland previously lost due to the foreclosure. The land repurchased was nearly the original extent of farmland owned by Solomon Young. However, the 60 acres in Section 11 that had been platted and sold in the 1920s and 1930s was not re-purchased.

1950, June 26

President Truman contacted architect Edward F. Neild of Neild-Somdal Associates to begin the design of the Presidential Library, which the President envisioned being located on the family farm.

In President Truman's detailed letter to Mr. Neild, dated November 20, 1950, he described the restorations to the farm that should be made, including rebuilding the old smokehouse, and the old icehouse behind it. He also specified restoring the asparagus bed, grape arbor, peach trees,

and the sycamore tree to the east of the Solomon Young Barn.⁵⁷

1950

By 1950, Mary Jane owned the north half and Vivian owned the south half of the SE ¹/₄ of Section 11, Township 47N Range 33W.

1950s

Vivian, with his sons Gilbert and Harry A. worked the farm in the 1940s and 1950s. The young Trumans enjoyed many benefits of mechanized farming that had developed since the animal-powered days of the 1910s. They focused on dairy farming in addition to growing crops.

1951

Mary Jane resided in a third house on the family farm, however the exact building or location is unknown.⁵⁸

1952, December 20

Plans for the Presidential Library to be built on the family farm were announced in a press release, noting construction was to begin in 1953.⁵⁹ However the construction never occurred.

1954, July 8

After considering other sites for the Truman Presidential Library, a site in Independence, Missouri was selected as it was close to a densely populated area, and near the family home on Delaware Street.⁶⁰ The City of Independence donated the land for the library.

57 HST Letter to E. Neild, Nov 20, 1950, HSTL, PPP, Box 18.

58 U.S. News & World Report, 22 September, 1952.

59 U.S. News & World Report, 22 September, 1952.

60 Evans-Hatch, *Historic Resource Study*, 95.



Figure 2-20. By the 1960s, the setting of the Farm Home had deteriorated. The maple grove had been mostly destroyed by a tornado in 1957, the rose arbor was in disrepair, and adjacent development filled the previously open landscape. The Solomon Young barn, right of Farm Home, had been modified by the addition of an extended gable roof which obscured the earlier hayhoods/dormers. HSTL 61-66-01, 1961

Truman Corners Development and Selling the Farm (1955 to 1965)

This period begins in 1955 with the first sale of farmland for commercial development. Soon after repurchasing the farmland lost due to foreclosure, the Truman's began to sell parcels of the farm for development. Harry S Truman played an active role in the selling of the land, and its future development. The sale of the farm went to fund his retirement after his presidency, but Truman also embraced the new land use with enthusiasm.

The most notable commercial development was the 105-acre Truman Corners Town and Country Shoppers City, a new suburban shopping center which embodied hopefulness in the future of America after World War II. Truman was active in the design, offering his planning advice to the developers and was present when the shopping center was inaugurated in 1957. This first development was soon followed by the selling of 220 acres of the farm property to B.F. Weinberg and Associates who planned a residential and commercial development. By 1965, only 40 acres remained of the original family farm.

This period ends in 1965, as Harry S Truman's involvement in the farm ended with his sale of the remainder of the farm to his nephews.

1955

All three siblings are credited with selling 105 acres to Don Casto to develop Truman Corners. Harry provided leadership in the planning, design, and orchestration of the new shopping center.

Harry sold 18 3/4 acres to the Mary Don Company (aka Edelbrock, Inc), a Kansas City real estate firm, for either \$45,000

or \$65,000. A plat shows the property was located near the southeast corner of Grandview Road and 125th Street and extended east to Highway 71. They subdivided the land into 71 lots.

Gilbert and Harry A. Truman, who had been farming on the land, sold 74 dairy cattle at auction and moved their operations to a 400-acre farm in Louisburg, Kansas.

1955 to 1958

In 1955, Harry S Truman's continued financial woes following his presidency spurred Congress to begin crafting legislation to provide for presidential pension benefits.

1956

Harry S Truman sold a strip of land on the east side of Highway 71 to the Missouri Highway Department for \$13,864 for expansion of the highway.

1956 to 1982

The Williams family rented and occupied the Farm Home. Harry received 65 dollars per month in rent. They replaced the old stone columns that supported the kitchen with a concrete foundation, screened in the back porch, and a concrete patio off the kitchen door, installed a concrete floor for the front porch, and shingled the roof. Despite these improvements, the property remained in a state of decline.⁶¹

1957

Truman Corners Town and Country Shoppers City opened to fanfare in 1957 as a state-of-the-art shopping experience.

⁶¹ Evans-Hatch, *Historic Resource Study*, 88-89.



Figure 2-21. The Truman Corners Town & Country Shoppers City was designed as an automobile focused regional shopping center, which would “change the shopping habits of the free world.” The Trumans sold 105 acres to Don Casto to develop Truman Corners in 1955 (in blue). The remaining portions of the farm (in green) were gradually sold over the next several years. HSTL 1954



Figure 2-22. Harry S Truman, Vivian Truman, Luella Truman, and Mary Jane Truman at the inauguration ceremony for Truman Corners. The Solomon Young barn is in the background. HSTL 97-42, 1957



Figure 2-23. The Truman Corners plan of 1956 included several department stores arranged around a central parking area. The land around the Farm Home remained agricultural, upper left of drawing. HSTL 1956

The sugar maple grove planted by Solomon Young c.1867, was destroyed by a tornado along with a hog shed. The Farm Home was also damaged, resulting in the Williams family repairing the roof and exterior.

1958

Harry, Vivian, and Mary Jane Truman sold 220 acres of the farm property to B.F. Weinberg and Associates for \$220,000.

This land was located across Highway 71 from Truman Corners, where Wienberg planned a development of commercial, multi-family, and single family housing to be called Truman Village. This site left only 40 acres remaining of the original farm, half of which was associated with Vivian's house.

During this time, the Farm Home and grounds were in disrepair. The grounds were rarely maintained and the house had unpainted, rotting siding and a leaky roof.

The Former Presidents Act was passed into federal law in 1958, providing a pension to previous Presidents of the United States.

1959 to 1965

The granary was removed.

1961

Electric poles were installed north of the Farm Home yard.

A photograph from this time indicates that the rose arbor was in disrepair and that the pump had been removed.⁶²

1965

In late 1964 and early 1965, Gilbert and Harry A. Truman, Vivian Truman's sons,

purchased the remainder of the farm from Harry S Truman.⁶³ The property at this time included part of section 14, lots 9-10 in Shelton's first addition, and lots 5 to 7 and 9 to 11 in Truman Blue Ridge Heights.

John Vivian Truman died on July 8, 1965. His widow Luella moved to Kansas to live with her sons. Her house, located north of the Farm Home, was rented.

⁶² HSTL, photograph 61-66-02.

⁶³ NPS, *CLI*, 20.



Figure 2-24. In 1984 the Farm Home and adjacent landscape were repaired. The Farm Home was in poor condition and the adjacent vegetation had overgrown obscuring the historic appearance of the farm landscape. Al O'Bright 1983



Figure 2-25. The Farm Home and adjacent landscape underwent extensive repair in 1984. Much of the Farm Home's wood exterior was replaced, interior portions were repaired, and more recent additions removed. Outside, the sugar maple grove was replanted and an outhouse and smokehouse were added to the site to convey to visitors the farm landscape, although they were not placed in historically accurate locations. (The milk barn is visible in the background at the left). Jill O'Bright 1984

Modern Day (1965 to present)

This period begins in 1965, once the sale of the land to Harry's nephews was complete. This period includes the leasing of the land and the Farm Home, and the later efforts to preserve the property. After Vivian's death in 1965, the brothers tried to sell the property to Jackson County, Missouri, but the County did not have the funds at the time, and so the Farm Home continued to be rented.

By the 1970s efforts had begun to preserve the Farm Home and its adjacent land. In 1978 the Harry S Truman Farm Home was listed on National Register of Historic Places. The Harry S Truman Farm Home Foundation actively worked to preserve the property.

Physical changes to the property during this period include the loss of the Solomon Young barn in 1966 to fire, as well as the loss of the hay and milk barns (located on Vivian's farm) and five of the stone posts. These were removed in the 1980s for the commercial development to the north. The posts were piled on the Truman Farm property.

The Grandview Chamber of Commerce started a fundraising effort to purchase the house. The Harry S Truman Farm Home Foundation formed in 1980 and assisted Jackson County in their negotiations to purchase the Farm Home in 1983.

In 1984, the Farm Home was extensively repaired. The front porch was rebuilt, exterior siding was completely replaced, modern additions were removed, the roofing was replaced, chimneys were rebuilt, the interior was renovated, and extensive woodwork was replaced. A new sugar maple grove was planted and additional outbuildings were added.

Due to financial difficulties in operating the property, Jackson County transferred management to the National Park Service in 1994. The NPS continues to manage it as part of the Harry S Truman National Historic Site.

1966

On November 6, 1966, the Solomon Young Barn was destroyed by fire. Following the fire, all of the surrounding wooden fencing was bulldozed.⁶⁴

1971, November 11

The Harry S Truman Historic District was designated a National Historic Landmark for the period of 1919 to 1971 in Independence, MO, meeting Criterion 2—association with life of person nationally significant.

1972

President Harry S Truman died on December 26, 1972 and was buried at the Harry S Truman Presidential Library and Museum in Independence, Missouri.

1974 to 1983

Between 1974 and 1983 the slope of the Farm Home's shed roof (over the south porch) was increased. It covered the lower half of the south facing second story windows.

1978

The Harry S Truman Farm Home was registered on National Register of Historic Places.

Mary Jane Truman died in Independence, Missouri, at age 89.

c. 1980

The Harry S Truman Farm Home

⁶⁴ NPS, *CLI*, 20.

Foundation was actively working to preserve the property. They organized the purchase of the remaining property by Jackson County through a grant of \$378,250 provided by the Department of the Interior.

1982

Bess Truman died at age 97 in Independence, Missouri.

1983

The Truman family agreed to sell the property to Jackson County for half of its \$700,000 value.

The first archeological survey of the Truman Farm was conducted.⁶⁵

1983 to 1985

Between 1984 and 1985, the Truman Farm Home Foundation undertook extensive repairs to the Farm Home, led by George Fogelsong.

The front porch was rebuilt, exterior siding was completely replaced, modern additions were removed, the roof was replaced, chimneys were rebuilt, the interior was renovated, and extensive woodwork was replaced.

A new sugar maple grove was planted and additional outbuildings were added.

1985

In 1985, the Truman Farm Home Foundation moved two structures to the property, a smokehouse and a privy. Neither structure was original to the property.

The Harry S Truman Farm Home was designated a National Historic Landmark.

mid-1980s

Paved walkways were built. These walks do not follow established historic circulation routes.

1987

In 1987, construction of the Truman Farm Shopping Center began on the parcel adjacent to the north boundary of the present-day Truman Farm. This parcel was the Vivian Truman Farm, which historically was part of the original farm. Several structures were razed including the milk barn (and possibly the hay barn). Five stone posts were removed and relocated to the present-day Truman Farm.⁶⁶

The National Association of Retired Federal Employees planted a native pin oak tree about 15 feet east of the Farm Home. This tree does not represent a historic planting.

1993

On December 14, 1993, Congress authorized the acquisition of the Truman Farm Home, by donation, from Jackson County, Missouri. Congress also authorized and directed the Secretary of the Interior to provide appropriate political subdivisions of the State of Missouri with technical assistance for the development and implementation of plans, programs, regulations, or other means for minimizing the adverse affects on the Truman Farm of the development and use of adjacent lands.⁶⁷

1994

Jackson County and the Truman Farm Home Foundation lacked the funding to adequately maintain the Truman Farm. On April 4, 1994, Jackson County conveyed the Truman Farm deed to the

⁶⁶ NPS, *CLI*, 20.

⁶⁷ National Park Service, *Long-Range Interpretive Plan: Harry S Truman National Historic Site*. Harpers Ferry: Harpers Ferry Center Interpretive Planning, November 2000, 3.

⁶⁵ Bray, *Archaeological Survey and Testing*.

federal government and the NPS assumed management of the property. The property became part of the Grandview Unit of the Harry S Truman National Historic Site.

1994 to 2009

Beginning in 1994, and occurring in stages until 2009, the NPS completed extensive repair to the garage, including internal stabilization with cabling.

During this time the Farm Home was shingled and painted, and gutters were added. Floorings were also replaced on the front and south porches.

1995

The National Park Service built a maintenance storage shed next to the garage.

1996

A wood ramp providing universal accessibility was built connecting the south side of the Farm Home to the parking area.

1996 to 1997

New wayside exhibits were installed, and were later updated in the 2000s.

1999

A General Management Plan (1999 GMPA) and Long Range Interpretive Plan (2000 LRIP) were developed for the Truman Farm.

2003

The NPS received funds to perform additional stabilization on the garage.

2005

Repairs to the Farm Home included in-kind replacement of windows, deteriorated siding, and chimney caps, tuck-pointing the foundation, and installation of updated security lights.

A NPS woodcrafter replaced rough sawn rafters in the poultry house. Roof sheathing was also replaced using metal sheets and the original roofing material was replaced.

2006

In 2006, a geothermal heating/cooling system was installed for the Farm Home. The parking lot was repaired after installation of the geothermal system.

2008

The parking lot was repaired with the use of a petroleum based asphalt sealing product, used to fill in large cracks, and the entire surface was coated to prolong the life of the pavement.

2009

The NPS acquired five acres of open field adjacent to the south boundary of the Truman Farm, Tract 2.

2010

The heating and cooling system units supplied by the geothermal system were destroyed by flooding and were replaced.

The exterior of the Farm Home was repainted and minor repairs were made to exterior wood surfaces.

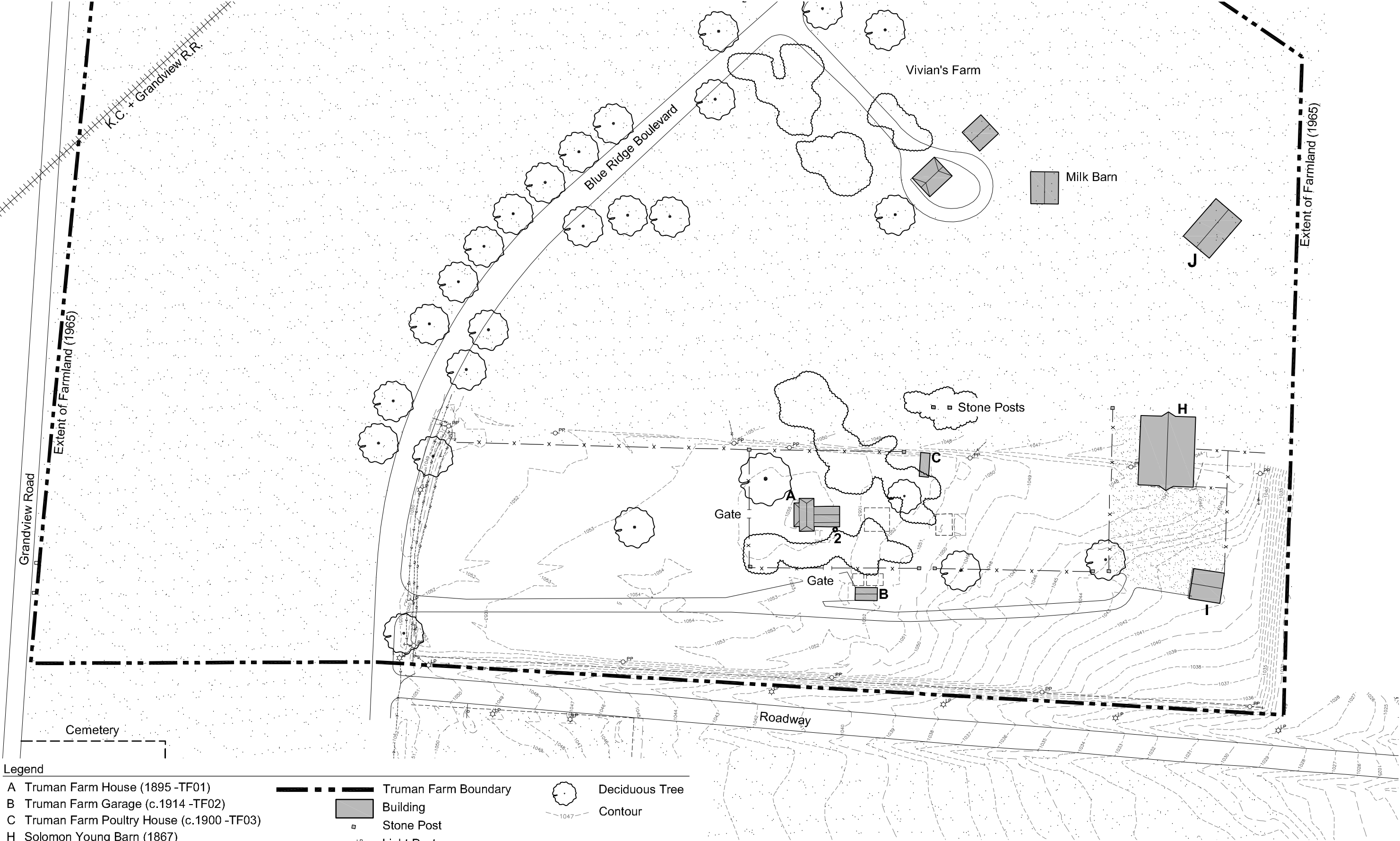
2011

The Harry S Truman National Historic District in Independence was expanded to include three additional discontinuous parcels: the Missouri Pacific Railroad Depot, 131 East Farmer Street, and 409 North Liberty Street.

NPS acquired Tract 101-08 immediately adjacent to the property on the south side. The transaction included the acquisition of a building, previously used as a paint store. Possibilities for the reuse of the building were noted by the 1999 GMPA to include visitor facilities, administrative

offices including curatorial staff and the function to care for museum collections, maintenance, storage and curatorial storage. A joint use with other local and regional partners was also noted as being possible.

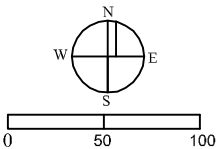
Portions of the maple grove were replanted.



Legend

- A Truman Farm House (1895 -TF01)
- B Truman Farm Garage (c.1914 -TF02)
- C Truman Farm Poultry House (c.1900 -TF03)
- H Solomon Young Barn (1867)
- I Granary (c.1900)
- J Hay Barn (c.1911)
- 2 Truman Farm Well (TF05) (No Pump)

- Truman Farm Boundary
- Building
- Stone Post
- Light Post
- Overhead Electrical
- Deciduous Tree
- Contour



MARCH 2012		FIGURE	
UNITED STATES DEPARTMENT OF THE INTERIOR TRUMAN FARM NATIONAL HISTORIC SITE		TITLE OF PROJECT TRUMAN FARM CULTURAL LANDSCAPE REPORT TITLE OF DRAWING 1965 FARM LAYOUT	
		NAME OF PARK TRUMAN FARM - HARRY S TRUMAN NATIONAL HISTORIC SITE	
		REGION MIDWEST	STATE MISSOURI

Chapter 3. Existing Conditions and Analysis

INTRODUCTION

This chapter provides a summary and analysis of the current condition of the cultural landscape and contributing, extant buildings at the Truman Farm. Narrative text, diagrams, and photographs describe the condition of the cultural landscape and buildings, and analyze and evaluate each characteristic. The cultural landscape is presented first, followed by the buildings.

CULTURAL LANDSCAPE

Site investigations recorded the existing condition of the Truman Farm cultural landscape. Field reconnaissance occurred in December 2011. Documented features included those landscape characteristics noted below. The assessment is undertaken to understand the cultural landscape as a whole, and to identify and document those qualities that contribute to its historic character, and those individual features that contribute to its significance.

The existing condition of each landscape characteristic is evaluated using the following criteria.

Good – Those features of the landscape that do not require intervention. Only minor or routine maintenance is needed at this time.

Fair – Some deterioration, decline, or damage is noticeable; the feature may require immediate intervention. If intervention is deferred, the feature will require extensive attention in a few years.

Poor – Deterioration, decline, or damage is serious; the feature is seriously deteriorated or damaged, or presents a

hazardous condition. Due to the level of deterioration, damage or danger, the feature requires extensive and immediate attention.

The existing condition assessment and landscape analysis is presented for the following landscape characteristics.

Natural Systems and Features are those natural aspects that have influenced the development and physical form of the Truman Farm. These include the native grasslands of western Missouri, the natural rolling topography, and the neighboring drainages of the Little and Big Blue Rivers, both which drain to the Missouri River.

Archeological Sites are the ruins, traces, or deposited artifacts in the landscape, evidenced by the presence of either surface or subsurface features. The identification of archeological features is provided by the 1983 Archeological Survey and Testing Report, conducted by Robert Bray.¹

Land Use is the organization, form, and shape of the landscape in response to land use.

Spatial Organization is the arrangement of elements creating the ground, vertical and overhead planes that define and create space, including the arrangement of topography, buildings, structures, and vegetation.

Topography and Landform is the three-dimensional configuration of

¹ Robert T. Bray, *Archaeological Survey and Testing at the Truman Farm Home and Grounds, Grandview, Missouri*. Kansas City: 1983.

the landscape surface characterized by features and orientation including cut slopes and rock outcroppings, fill slopes, and other man-made topographic features. The relationship of the farm to natural formations is included.

Views and Vistas are features that create or allow a range of vision, which can be natural, or designed and controlled.

Circulation are those features and materials that constitute systems of movement including vehicular routes such as the entrance drive and Blue Ridge Boulevard, and pedestrian routes.

Small Scale Features are the human-scaled elements that provide detail and diversity combined with function and aesthetics. These include stone posts, light posts, and fencing.

Vegetation is indigenous or introduced trees, shrubs, vines, ground covers, and herbaceous materials and gardens.

Utilities are the underground piping and overhead utilities that service the property. These include water, sanitary sewer, storm sewer, and electrical.

Assessment of Integrity

Integrity is the ability of a property to convey its significance. In addition to being listed in the National Register of Historic Places, a property must also have integrity, which is grounded in a property's physical features and how they relate to its significance. Integrity is defined by seven aspects or qualities: location, design, setting, materials, workmanship, feeling, and association.

Location is the place where the cultural landscape was constructed or the landscape where the historic event occurred.

Design is the combination of elements that create the form, plan, space, structure, and style of a cultural landscape.

Setting is the physical environment of the cultural landscape.

Materials are the physical elements that were combined or deposited during the particular period(s) of time and in a particular pattern or configuration to form the cultural landscape.

Workmanship includes the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory.

Feeling is the cultural landscape's expression of the aesthetic or historic sense of a particular period of time.

Association is the direct link between the important historic event or person and a cultural landscape.

Summary of Integrity

The Truman Farm retains integrity in six aspects including location, setting, materials, workmanship, feeling and association although the loss of farm acreage and some original historic fabric has diminished integrity for a few aspects.

The current acreage of the Truman Farm is less than the acreage owned at end of the period of significance, and substantially smaller than the acreage at the time Harry S Truman lived and managed the farm. However the core of the farm has been preserved.

At approximately 11 acres, the Truman Farm today comprises the key acreage associated with the farm life depicted in spaces, features and associations directly connected to Harry S Truman, 33rd

President of the United States. The Truman Farm has integrity in location and setting as it remains in its original location and its contributing features remain in their original locations. The setting reflects the original characteristics of the farm as reflected in the extant historic residential area, farm yards, and agricultural fields.

The residential area and farm yards are approximately five acres in size, and comprise the listing in the NRHP district and NHL. The remaining six acres were historically an agricultural field, modified near the end of the period of significance as President Truman sold this land for planned commercial development. The relationship of the residential area to the farm yards, and the relationship of these spaces to the agricultural fields remain as they were historically.

Truman Farm also retains the original relationship to commercial development to the east where the remnants of Truman Corners remain. At the end of the period of significance, President Truman sold farm land and influenced commercial development on this property. The setting of the Truman Farm has been diminished on the north and south edges by the addition of newer commercial and residential development. The most intrusive is the development to the north on lands that were historically associated with Vivian Truman's farm, President Truman's brother.

Contributing features including the Farm Home, Garage, sugar maple grove, barnyard, foundations of the Solomon Young Barn and granary, and small scale features such as the stone posts that remain in their original location and relationship to one another. However, the loss of historic structures such as the Solomon Young Barn, granary and other outbuildings, and fencing of farm spaces

such as the barnyard and garden has diminished the feeling of the farm as it is difficult to discern the three-dimensional qualities of the farm and its spaces. The removal and deposition of several stone posts has obscured the relationship between the original Farm Home and adjacent agricultural lands, mainly Vivian Truman's farm to the north.

Most contributing features retain original historic fabric and materials, and reflect the workmanship of the historic construction. The brick and stone Farm Home foundation, and the stone foundation of the Garage retain their original materials. The stone posts and stone threshold (TF09) remain and are of original construction of native local stone often used in the area during the period of significance. The Poultry House and its concrete pad and fence remain with original materials, and reflect the workmanship of the period.

The greatest modifications to historic materials and workmanship is associated with the Farm Home, which was significantly altered in the 1980s during repair of the building. It appears that much of the historic material was removed and new materials installed. The Farm Home reflects the workmanship of the late 19th century, although it is unknown if these elements are from the historic period.

Contributing Features, Character-Defining Features, and Non-Contributing Features

Contributing Features are features that contribute to the Truman Farm's historic significance and include individual elements and other characteristics that remain from the period of significance. Individual features that contribute to the significance of the Truman Farm include buildings, sites of former structures, and small scale features built during the period of significance.

Character-Defining Features provide defining characteristics, but have been identified as non-contributing. These elements are important to the significance of the Truman Farm and are features that replaced historic features that were present during the period of significance. These more recent features are character-defining elements of the Truman Farm as the replacement or modification retains the form, mass, scale, and/or material of the original feature and they continue to assist in maintaining the historic character of the Truman Farm.

Non-Contributing Features are features that have been added to the Truman Farm since the end of the period of significance, and do not assist in maintaining the historic character of the Truman Farm.

Contributing Features

Truman Farm Home (1895) (TF01)
Truman Farm Garage (c.1914) (TF02)
Truman Farm Poultry House (c.1900) (TF03)
Smokehouse Site (c.1900-c.1940)
Coalhouse/Icehouse Site (c.1900-c.1940)
Solomon Young Barn Site (1867-1966)
Granary Site (c.1900-c.1960)
Small Barn Site (c.1900-c.1922)
Unknown Structure Site/Topographic depression

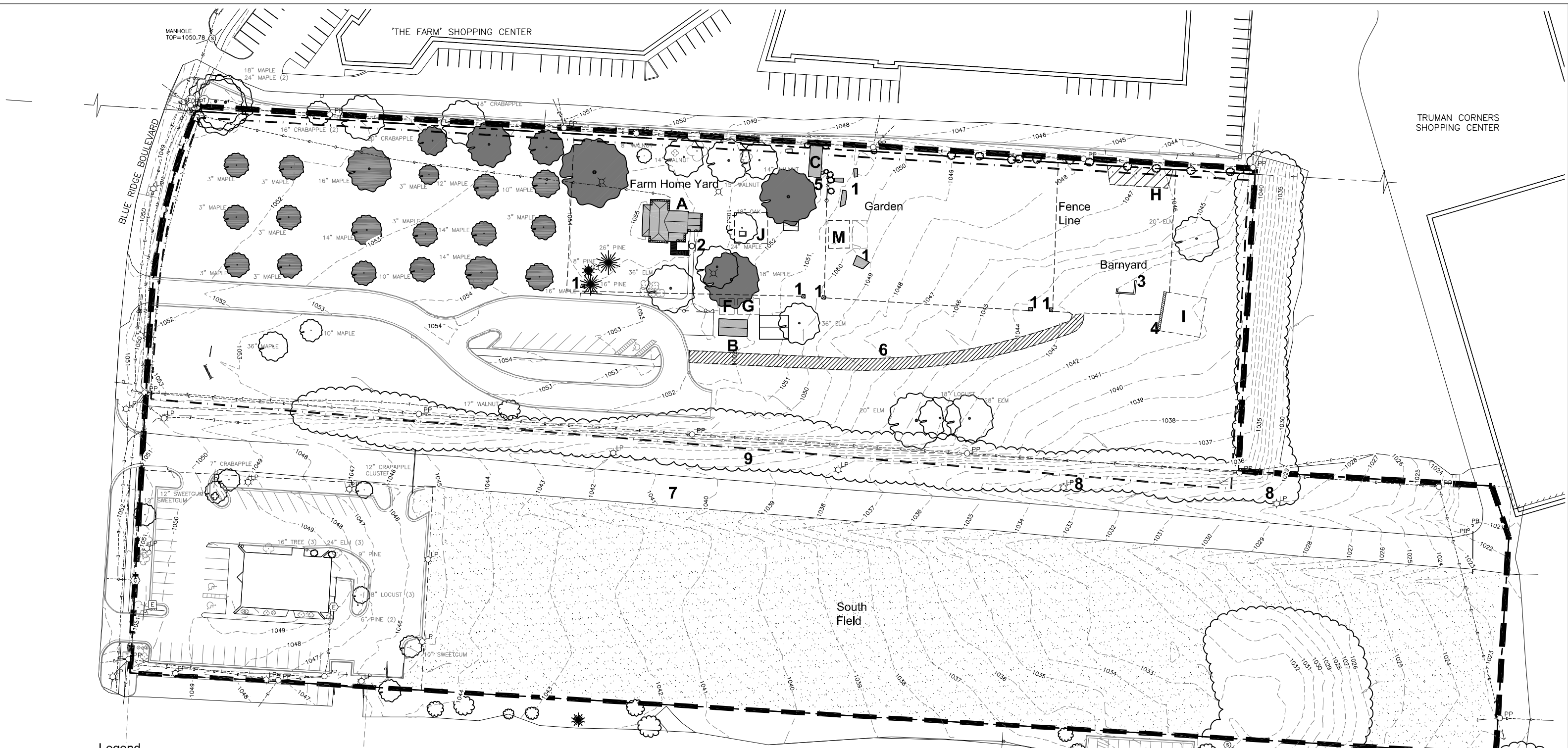
Stone Posts (c.1920-1930) (TF04)
Truman Farm Well & Pump (TF05)
Concrete Foundation
Stone Threshold/Truman Farm Barn Foundation (TF09)
Fence at Poultry House
Road Trace
1950s Roadway
1950s light posts
1950s slope

Character-Defining Features

Sugar Maple Grove
Pine trees at Farm Home
Canopy trees around Farm Home

Non-Contributing Features

Maintenance Shed (1995)
Smokehouse (TF07) (1985)
Privy (TF08) (1985)
Pin Oak Plaque (TF06)

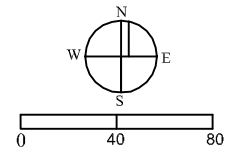


Legend

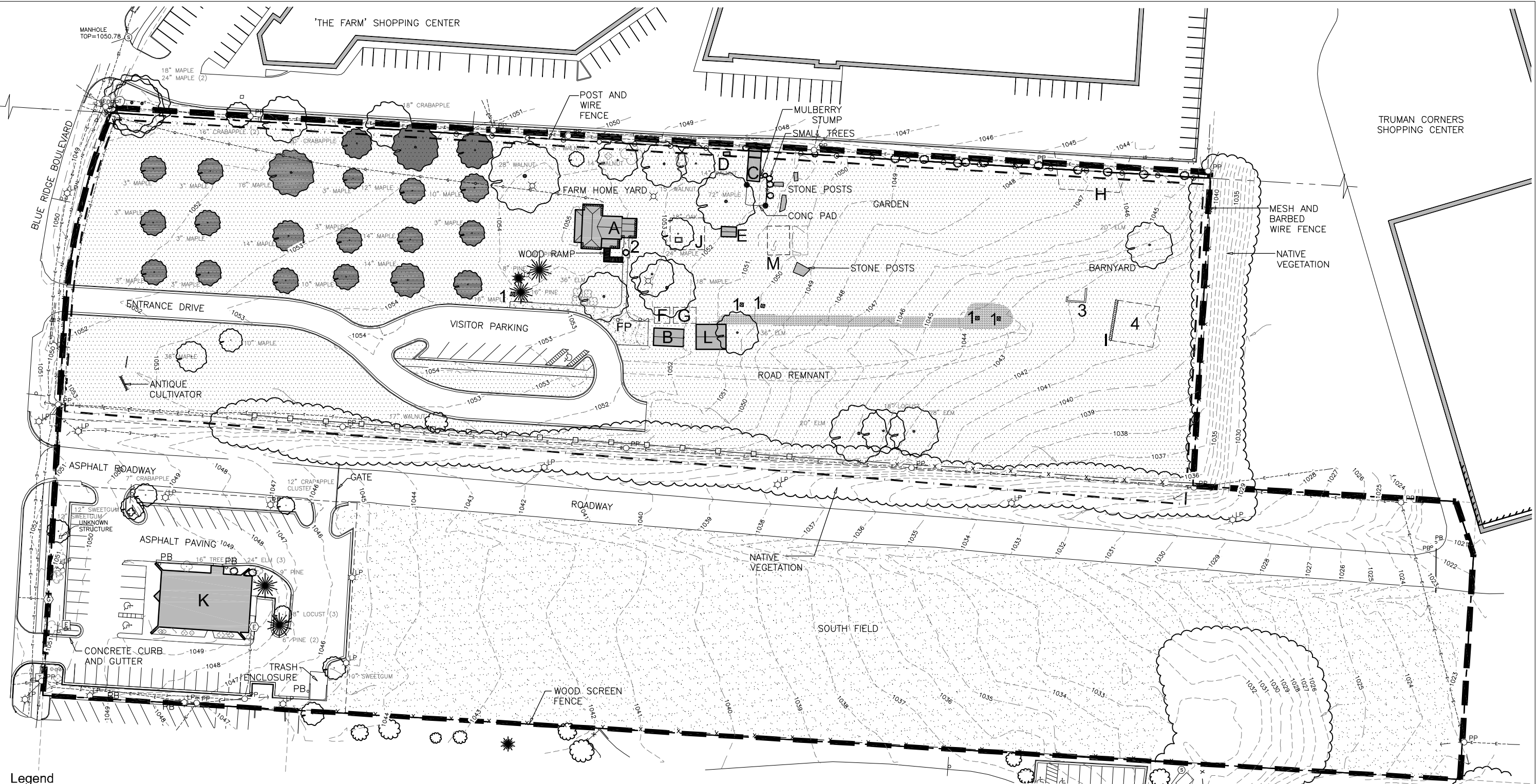
- A Truman Farm Home (1895) (TF01)
- B Truman Farm Garage (c.1914) (TF02)
- C Truman Farm Poultry House (c.1900) (TF03)
- F Smokehouse (c.1900-c.1940)
- G Coalhouse/Icehouse (c.1900-c.1940)
- H Solomon Young Barn (1867-1966)
- I Granary (c.1900-c.1960)
- J Small Barn (c.1900-c.1922)
- M Unknown Structure
- 1 Stone Posts (date unknown, c.1930-1940) (TF04)
- 2 Truman Farm Well & Pump (TF05)
- 3 Concrete Foundation
- 4 Stone Threshold/ Truman Farm Barn Foundation (TF09)
- 5 Fence at Poultry House
- 6 Road Trace

- NHL Boundary
- NPS Property Boundary
- Building
- Stone Column
- Fence Line (non-extant)
- 1950s Roadway
- 1950s Lightposts
- 1950s Slope

- Deciduous Tree
- Character-Defining Tree
- Character-Defining Evergreen Tree
- Solomon Barn/Footprint
- Field



DECEMBER 2012		HSTR 492 116050	
UNITED STATES DEPARTMENT OF THE INTERIOR TRUMAN FARM NATIONAL HISTORIC SITE		TITLE OF PROJECT TRUMAN FARM CULTURAL LANDSCAPE REPORT TITLE OF DRAWING CONTRIBUTING FEATURES	
		NAME OF PARK TRUMAN FARM - HARRY S TRUMAN NATIONAL HISTORIC SITE	
REGION MIDWEST		COUNTY JACKSON	STATE MISSOURI



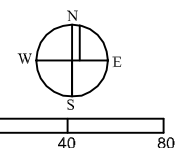
Legend

- A Truman Farm Home (1895) (TF01)
- B Truman Farm Garage (c.1914) (TF02)
- C Truman Farm Poultry House (c.1900, moved c.1940) (TF03)
- D Privy (1895) (TF08)
- E Shed/Smokehouse (1895) (TF07)
- F Smokehouse (c.1900-c.1940)
- G Coalhouse/Icehouse (c.1900-c.1940)
- H Solomon Young Barn (1867-1966)
- I Granary (c.1900-c.1960)
- J Small Barn (c.1900-c.1922)
- K NPS Building
- L Maintenance Shed (1995)
- M Unknown Structure

- 1 Stone Posts (date unknown, c.1930-1940) (TF04)
- 2 Truman Farm Well & Pump (TF05)
- 3 Concrete Foundation
- 4 Stone Threshold/ Truman Farm Barn Foundation (TF09)

- NHL Boundary
- NPS Property Boundary
- Building
- Stone Post
- ⊗ Yard Light
- ⊙ LP Light Post
- Sign
- Overhead Electrical
- Underground Comm
- 1047 Contour
- Wood Post

- Deciduous Tree
- Sugar maple grove
- ⊗ Shrub
- ⊙ Evergreen Tree
- Non-Extant Building
- Lawn
- Field
- Concrete
- Mown Path
- Post and Wire Fence
- Barbed Wire Fence
- × Mesh and Barbed Wire Fence
- Pine Oak Plaque
- FP Flagpole



HSTR 492 116050

DECEMBER 2012	TITLE OF PROJECT TRUMAN FARM CULTURAL LANDSCAPE REPORT	
UNITED STATES DEPARTMENT OF THE INTERIOR TRUMAN FARM NATIONAL HISTORIC SITE	TITLE OF DRAWING EXISTING CONDITION PLAN	
	NAME OF PARK TRUMAN FARM - HARRY S TRUMAN NATIONAL HISTORIC SITE	
	REGION MIDWEST	STATE MISSOURI

Natural Systems and Features

Existing Condition

Natural aspects of the greater Grandview area originally influenced the development and physical form of the Truman Farm. These include the native grasslands of western Missouri, the natural rolling topography, and neighboring drainages of the Little and Big Blue Rivers, both of which drain to the Missouri River. These natural aspects also include the underlying soils and geology.

Grandview, Missouri is situated on rolling topography at elevations between 920 and 1,060 feet above sea level. The rolling topography descends toward the Big Blue River to the west, and the Little Blue River to the east. Both of these streams are approximately 805 feet above sea level, and both drain to the Missouri River, which lies to the north.

The area of the Truman Farm is relatively flat, situated at an elevation of 1,030 to 1,050 feet. The Truman Farm Home is situated on a slight rise, at an elevation of approximately 1,054 feet above sea-level with gentle topography sloping toward the southeast and west.

The geology of the Grandview area includes Iola limestone, uppermost member of the Kansas City Group, Middle Pennsylvanian System.²

Soils of the Truman Farm belong to the Sharpsburg-Grundy-Ladoga-Pershing association. All were derived ultimately from loess that once blanketed the area to a depth of many feet.³ The topsoil around

2 Robert T. Bray, *Archaeological Survey and Testing*. This creates the characteristic soils and topography that resulted from the influence of Pleistocene glaciation about 400,000 years ago. Additional underlying strata include Chanute shale, Westerville limestone, Cherryville shale, Winterset limestone, Galesburg shale, Ladore shale, and Hertha limestone.

3 Bray, *Archaeological Survey and Testing*, 4.

the Truman Farm is 20 to 24 inches thick. Presumably, it is considerably less in those areas of the farm that were cultivated—particularly, on the gentle east slopes. Residual stones are very rare. These soils were formed under a prairie environment and are classed as high to very high in inherent fertility.⁴

The natural systems of the Grandview area created a unique system of adapted plants to the climatic region. The area is classified as part of the Glaciated Plains Natural Division, which roughly encompasses the northern one-third of the state of Missouri.⁵

Upland and bottomland deciduous forest and prairie were the main pre-settlement vegetation, with prairie comprising about 45 percent of this area. Woodlands suitable for forest interior breeding birds are rare except at a few of the region's state parks and conservation areas.⁶

The area, where undeveloped, supports tall grass prairie vegetation. Big bluestem, little bluestem, indiangrass, and switchgrass are the dominant species. Portions of the landscape support trees—red oak, white oak, and shagbark hickory are major species. Islands of tall grass prairie vegetation are common.

This diversity extends to animals as well. Historically, greater prairie-chicken, black-tailed jackrabbit, prairie king snake and a variety of other birds, mammals, reptiles and amphibians have lived in the tall grass prairie and adjacent woodlands.⁷

4 Bray, *Archaeological Survey and Testing*, 4.

5 Missouri Department of Conservation, online Atlas.

6 Missouri Department of Conservation.

7 Ibid.



Figure 3-1. Northwest Missouri supports tall grass prairie vegetation interspersed with woodlands that follow ridgelines and drainages. Big bluestem, little bluestem, indiangrass, and switchgrass are the dominant grass species, and trees include red oak, white oak, and shagbark hickory. SS 12/6/11

The average annual precipitation is 90 to 105 centimeters. Maximum precipitation is from late in spring through autumn. Annual snowfall ranges from about 12 centimeters in the south to 45 centimeters in the north. Average annual temperature is from 13 to 17°C with the average freeze-free period from 190 to 235 days.

The moderate precipitation is adequate for crops and pasture most years, but occasional summer droughts reduce crop yields. In much of the area, shallow wells are the principal source of water for domestic use and for livestock, but small ponds and reservoirs on individual farms are increasingly important sources of water for livestock. Deep wells, in limestone areas, also provide water.⁸

Analysis

The natural systems of the Truman Farm influenced the settlement of the area by Solomon and Harriet Young, who established their farm on the fertile soil of the Great Plains. The extraordinarily rich soils, long growing season and abundant rainfall combined with the close proximity of the railroads and the growing demands of Kansas City made Jackson County farmland among the most valuable in the state.

Since the period of significance, the natural systems have changed slightly. Major changes are primarily associated with change in land use, particularly, the transition of agricultural land to development.

The changes to the natural systems include alterations to the natural topography surrounding the Truman Farm Home and alterations to vegetation.

While farming was the initial action that altered much of the indigenous vegetation and natural systems, it originally gently

yielded to natural constraints, such as steep embankments and natural drainages which hindered farming activities.

The natural climate dictated which types of crops that could be grown, influencing the development of the land as cropland with crops such as wheat, oats, and corn.

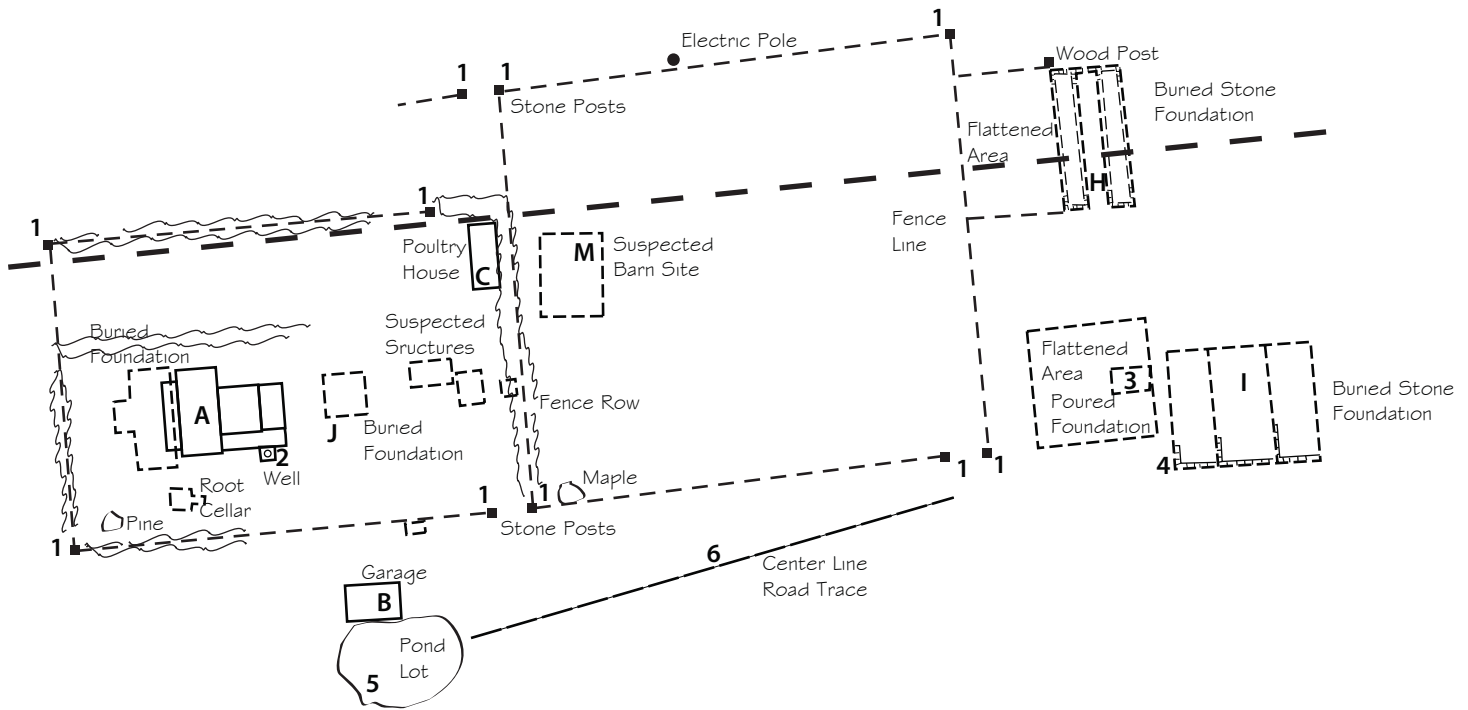
Since the time farming ceased on the Truman Farm, the property's vegetation has naturalized on the east, north, and south edges of the property, near the fencelines.

The precipitation patterns of the Grandview area, which included occasional drought, influenced water usage on the Truman Farm during the period of significance and within the larger community. This led to building an on-site temporary pond south of the Garage, as well as the use of rain barrels around the Farm Home. In the broader community, this led to building reservoirs to store water.

The natural geology of the Grandview area was beneficial to the development of the Truman Farm. Rocks were used to build foundations and footings for the Farm Home and Garage—Hertha limestone and Ladore shale were likely obtained from the nearby river valleys.⁹

⁸ University of Missouri; *Cooperative Soil Survey*.

⁹ NPS, *CLI*, 58.



Legend

- | | |
|----------------------------------------------------------|------------------------------------------------------|
| A Truman Farm Home (1895) (TF01) | 1 Stone Posts (date unknown, c.1930-1940)(TF04) |
| B Truman Farm Garage (c.1914) (TF02) | 2 Truman Farm Well & Pump (TF05) |
| C Truman Farm Poultry House (c.1900, moved c.1940)(TF03) | 3 Concrete Foundation |
| M Unknown Structure | 4 Stone Threshold/Truman Farm Barn Foundation (TF09) |
| H Solomon Young Barn (c. 1867) | 5 Pond |
| I Granary (c. 1900) | 6 Road Trace |
| J Small Barn (c. 1900-1922) | |

Figure 3-2. Archeological survey and testing was undertaken in 1983. Through surface inspection, sub-surface probing, and limited archeological excavation, archeologist Robert T. Bray identified thirteen features including the Solomon Young Barn foundation and other barn foundations, as well as the foundation of the original Farm Home, and the road trace of the original entrance drive. MB, Archeology Plan based on Bray, Archeological Survey and Testing 1983

Archeological Sites

Existing Condition and Analysis

Several known archeological features exist within the Truman Farm. These are primarily in areas historically used as barnyards to the east of the Farm Home. Most are likely remnants of former barns or outbuildings.

Archeological survey and testing was undertaken in 1983 by Robert T. Bray, who identified 13 archeological sites and features below present grades.¹⁰ Using a combination of surface inspection, sub-surface probing, and limited archeological excavation, Bray identified archeological features that are evident (visible) in the landscape today and non-visible remains including buried stone foundations of the Solomon Young Barn, the small barn, and the original 1867 house.

- The original house foundation (built 1867 and burned 1894) was found west of the extant Farm Home, along with a root cellar that could have belonged to either house.¹¹ During dry weather, a foundation, likely from the original 1867 house, is evident in the grass to the west of the extant front porch.
- Small Barn - a buried stone foundation exists 18-feet east of the Farm Home, measuring approximately 17-feet square. Evidence indicates the barn was removed rather than burned. This foundation and the foundation of the first house appear similar in composition and construction.¹² This was likely the location of the small barn that is visible in several historic photographs (see Buildings and Structures) and was in use while Harry S Truman lived on the farm. This foundation is visible off the

northeast corner of the extant kitchen. It is approximately 10-feet from the Farm Home and the lines delineating what are believed to be the foundation are visible.

- Solomon Young Barn - is located on the northeast corner of the property. It is a foundation composed of massive, rough-hewn limestone blocks. All lines around the 59' x 27' foundation are an average of 24-inches wide, except for an open portion of 10-feet on the south end. Charcoal evidence indicated that this is the location of the Solomon Young Barn that burned in 1966.¹³ There was evidence of a flattened area just to the west of this foundation.
- Stone Foundation/Truman Farm Barn Foundation- Another foundation (TF09) is located in the southeast corner of the field. Bray identified it as the oldest of the three barns identified in his survey, and dated it to the mid-19th century, concluding that since portions of the foundation have been robbed it was possible that the stones were used in the foundation of a later barn.¹⁴ However, based on aerial and historic photographs from the 1940s and 1950s this is also the site of the granary. If Bray is correct in his dates, the granary may have been built c.1867, or it was built on top of the old foundation. While the remnant stone (TF09) may share an overlapping footprint with the granary site, the stone foundation is not necessarily a remnant of the granary. The granary was removed between 1959 and 1965.
- Concrete Foundation- A poured concrete foundation measuring 12' x 17' is east of the foundation. Bray dated the concrete foundation to the early 20th century. The interior of this

¹⁰ Bray, *Archaeological Survey and Testing*, 15.

¹¹ Ibid, 29.

¹² Ibid, 36-37.

¹³ Ibid, 42.

¹⁴ Ibid, 48.



Figure 3-3.The concrete foundation in the east field. It was possibly poured as a foundation for a hog house and is a contributing feature. SS 12/6/11

foundation was filled with a pavement of rocks. “Function of the structure was uncertain, but it was probably a hog house. Time of use was almost certainly Truman period.”¹⁵

- Barnyard- A flattened, somewhat depressed yard lay mostly west of the buried concrete foundation. It was presumably fenced, the east line tied into the northeast and southeast corners of the concrete foundation. The west fence line would have coincided with the north-south fence line between the two stone gate posts on the south and the stone fence post on the north.¹⁶ There is no other evidence that a hog house existed in this location, a plan based on oral history from John Truman (Harry Truman’s nephew) noted that a scale once sat in this general location. It is possible that the concrete foundation was poured as a level space for the scale.

¹⁵ Ibid.

¹⁶ Bray, *Archaeological Survey and Testing*, 48.

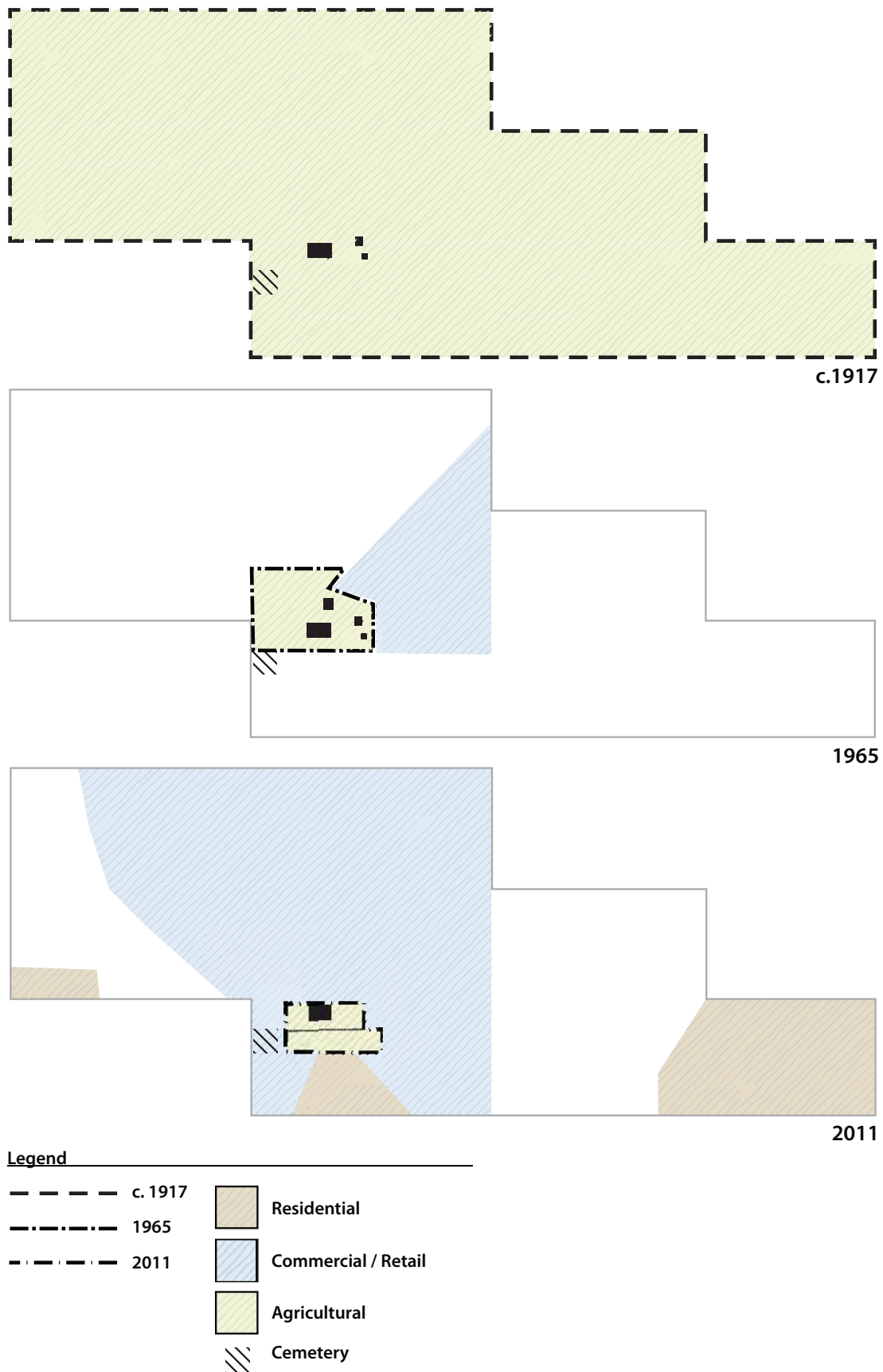


Figure 3-4. Land use has changed from all agricultural in 1917 to mostly commercial in 2011. By 1965, only 40 acres of the Truman Farm remained. MBD

Land Use

Existing Condition

The Truman Farm is managed as the Grandview Unit, Harry S Truman National Historic Site. The current land use is a historic site with associated maintenance, administration, and visitor facilities. The site's museum program preserves and maintains museum collections inside the Farm Home that includes both original Truman family artifacts and period pieces transferred from Jackson County, Missouri to the National Park Service. As part of the Harry S Truman National Historic Site (NHS), the Truman Farm serves as a destination and connecting point to other portions of the NHS, located 20 miles to the north in Independence, Missouri.

The Truman Farm property includes 11.19 acres of land and is divided into three parcels, Tracts 1, 2 and 3. Each of the three parcels lie adjacent to the east side of Blue Ridge Boulevard. The northern parcel (Tract 1) is approximately 5.25 acres in size and is the setting of the Truman Farm Home, built in 1894 to 1895. Tract 1 was sold by the Truman family in 1983 to Jackson County and is now owned by the National Park Service who acquired the property in 1994. In 2009 the NPS acquired Tract 2, an open field to the south of the Farm Home, which was also previously Truman family-owned land. In 2011, the NPS acquired Tract 3 to the west, another previously Truman family-owned parcel, to keep the three parcels under the same ownership and possible use for parking facilities. Current zoning is Residential - Improved Land, according to Jefferson County, Missouri records. Adjacent parcels are zoned Commercial-Improved Land, and Commercial-Vacant Land.

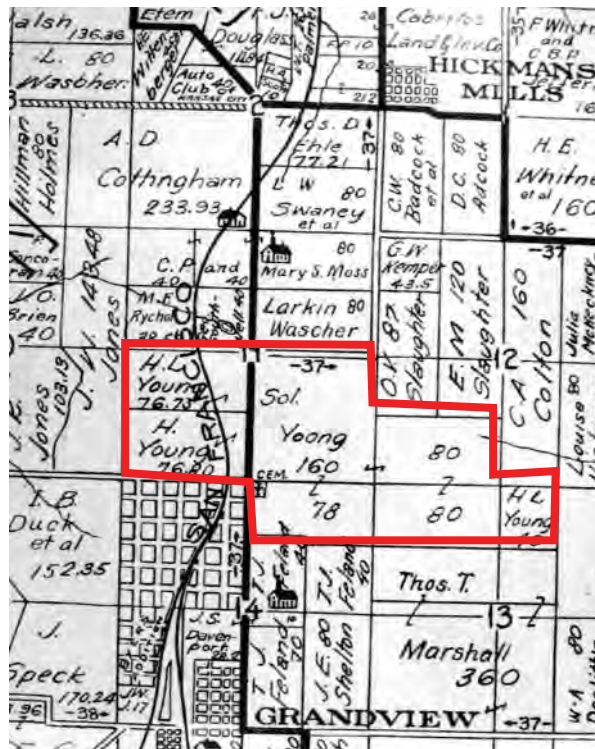
The property interprets the farm's history as related to President Harry S Truman, focusing on interpreting, guiding, and



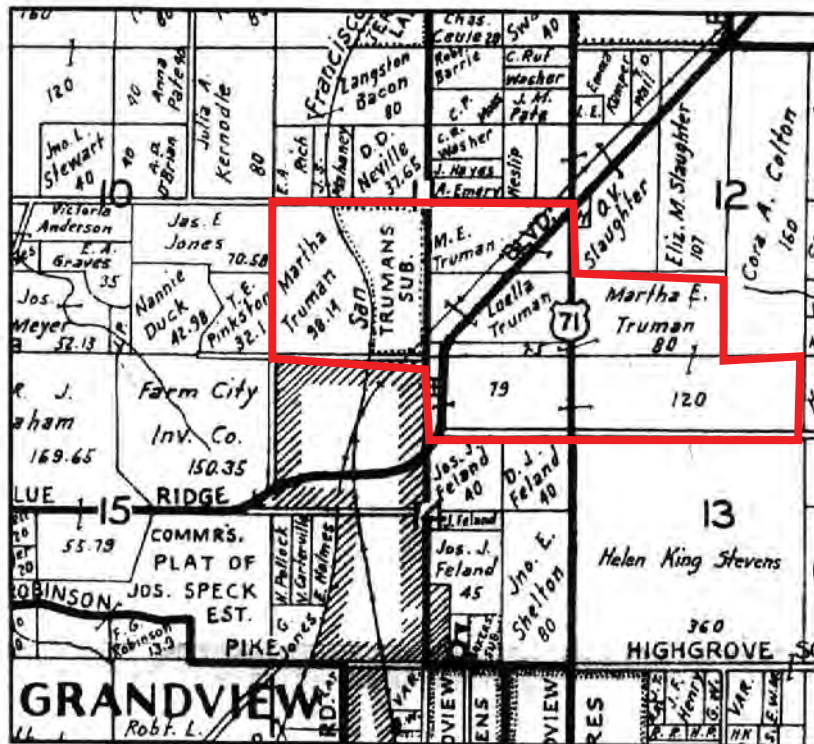
Figure 3-5. The existing land use of the Truman Farm is a historical site with associated visitor facilities and development related to administrative and maintenance activities. SS 12/6/11

allowing enjoyment of the cultural attraction and adjacent park-like setting. Maintenance storage is located in a shed behind the Farm Home, and a sales area is located within the Farm Home kitchen.

Visitor facilities include parking and interpretive activities that provide information by way of interpretive signage, brochures, cell-phone tours, and guided tours (limited to six people at a time). The property is open to visitors daily year-round, for self-guided activities. The Farm Home is open to visitors Friday through Sunday, Memorial Day to Labor Day with guided tours given by park staff who interpret the life and times of President Harry S Truman while he lived and worked on his family farm. The various outbuildings are also used to interpret these themes, as are the sugar maple grove and pines near the Farm Home, and the open field to the east.



c.1893



c.1925

Figure 3-6. A plat map dated 1911 indicates that Solomon Young owned 398 acres and Harriet Louisa Young owned 193.55 acres. Active farming of the land occurred between 1844 and 1965. Crops grown included oats, wheat, corn, and clover. Land was also used to graze cattle. By the 1920s, land uses began to change with the Trumans selling 200 acres to develop Truman's Subdivision, located between Grandview Road and the K.C. Southern & San Francisco Railroad. Evans-Hatch, Plat Map, 296, 1911.

Analysis

The land use of the Truman Farm has changed since the period of significance. It is no longer an active farm nor in agricultural use. The greatest changes in land use occurred during the period of significance as land was sold and rights-of-way given, resulting in a dramatic reduction in farmland and the development of the previously farmed parcels into commercial land uses.

Between the years of 1844, when Solomon Young purchased the first 398 acres of land, and 1965, the area was agricultural. Over the course of time, the extent of agricultural land owned or operated by Harry S Truman's family varied. By 1893, the year Harry's maternal grandfather Solomon Young died, Mr. Young had acquired at least 1,500 acres of land (likely not contiguous). Records from 1911 indicate a much smaller land ownership, in which Solomon Young owned 398 acres and Harriet Louisa Young, Harry's maternal grandmother, owned 193.55 acres, for a combined 591.55 acres.¹⁷ Active farming by the family waned after 1919, but was continued by Harry Truman's brother and nephews in certain parcels, while other portions were leased, continuing the agricultural use.

Between 1906 and 1917 when Harry S Truman lived and worked on the farm, the operation was a full agricultural operation with cropland and lots for raising animals including barns, barnyards, and pastures. Near the Farm Home were barnyards and structures for raising chickens, a vegetable garden and an orchard. Although these activities have ceased, these areas remain.

While Harry S Truman worked on the farm he and his father practiced crop

rotation—first wheat, then clover, corn, oats, and back to wheat.¹⁸ The practice of crop rotation conserved the soil and increased its quality, improving crop yields. Presumably, his brother and nephews continued this practice. Since the land use has changed from agriculture to commercial and residential, the practice of alternating crops is no longer apparent in the landscape.

Beginning in 1922, with the sale of 200 acres, the Truman family began the first of several transactions that would transition the farm from agricultural to commercial development. Rights-of-way for the Blue Ridge Boulevard, K.C. & Grandview Railroad, and Highway 71 were given to expand transportation to Grandview during the 1920s.

By the mid-1950s the Trumans began to sell parcels of the family farm to developers. Grandview and Kansas City were growing in population, and the Truman Farm was adjacent to several major thoroughfares. The land along those corridors was easily developed into new shopping malls that serviced the growing numbers of suburbanites.

Harry S Truman played an active role in the selling of the farm for commercial development and embraced the new land use with enthusiasm. He even offered his planning advice to the developers of Truman Corners, and was present when the shopping center was inaugurated in 1957.

By 1965, approximately 40 acres remained in agricultural use. Since that time it decreased until Jackson County purchased the farm in the 1980s, at which time only 5.2 acres remained.

¹⁷ Plat map, c.1911 Berry Publishing Company, HST Archives, Grandview Farm Vertical File. The date on this map is likely earlier than 1911, as Solomon Young died in 1893.

¹⁸ Figure 2-8, Crop Rotation Maps.

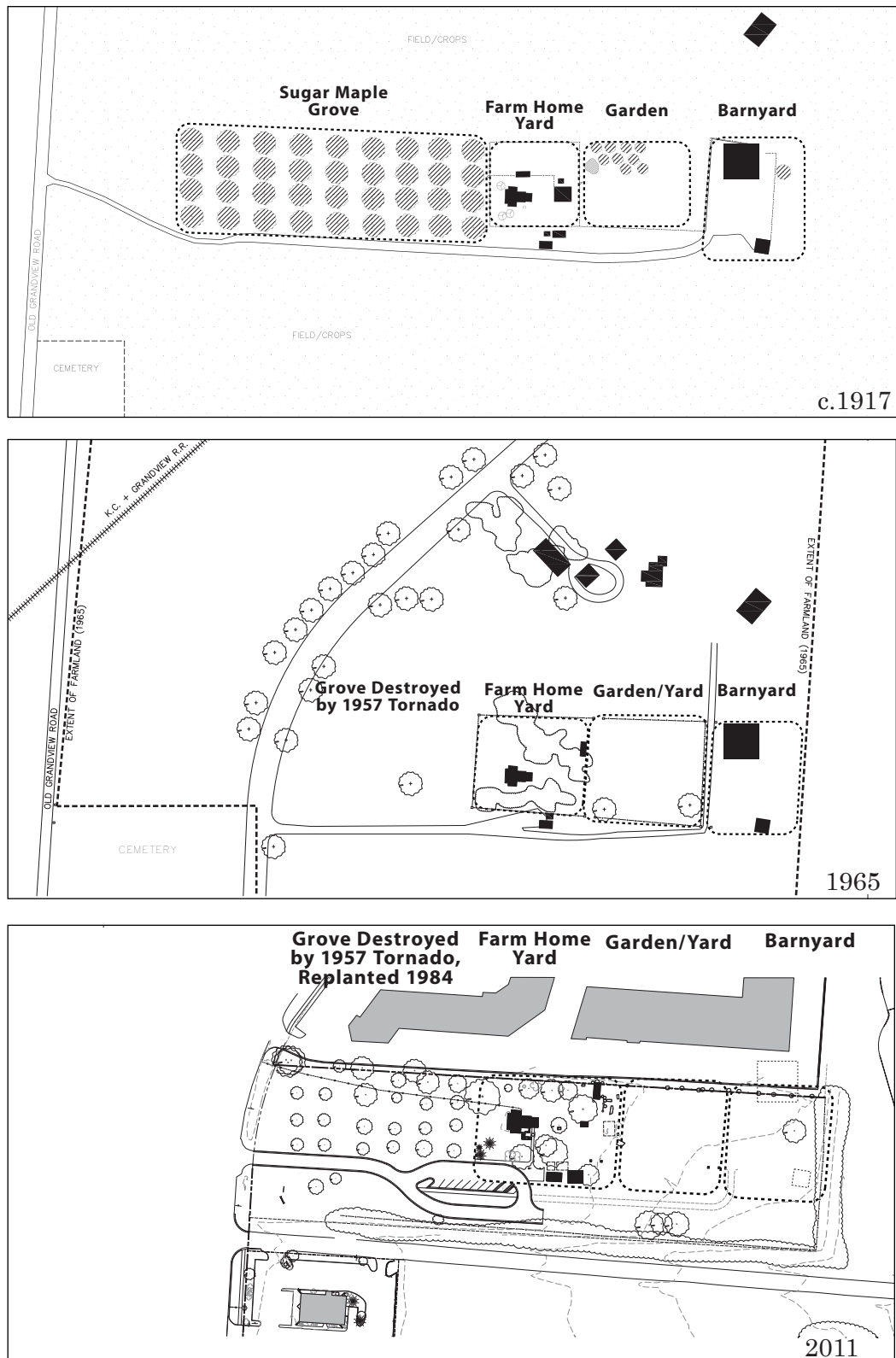


Figure 3-7. Historically, the Truman Farm was divided into five discrete spaces: 1. Sugar maple grove 2. Farm Home Yard 3. Garden 4. Barnyard and 5. adjacent fields/crops. The original spaces of the farm remain from c.1917 but are not as clearly defined, especially after the loss of the garden, the original sugar maple grove, and the Solomon Young Barn in 1966, and the fences which segregated the spaces. MBD

Spatial Organization

Existing Condition

The Truman Farm is spatially arranged with the historic Farm Home at the center. The replica sugar maple grove is on the west, and fence lines define the property on the east, north, and south. Adjacent commercial development on the north, and along Blue Ridge Boulevard create an edge and enclosure.

The Farm Home is the dominant building, with the other buildings providing a supporting role.

The spatial organization has five basic spaces: the sugar maple grove closest to Blue Ridge Boulevard; the Farm Home and yard adjacent; the yard east of the Farm Home; and the eastern portion which is an open lawn framed by trees; and the open field on the south.

The existing sugar maple grove is composed of six rows of trees arranged in four evenly spaced rows that extend from the Farm Home to Blue Ridge Boulevard. The grove is a buffer between the Farm Home and commercial development across Blue Ridge Boulevard.

The existing Farm Home yard is a small open yard surrounding the Farm Home. The trees are planted less formally and frame the Farm Home.

The easternmost portion of the property is the barnyard which is currently an open lawn defined by the Poultry House on the west, and the topographic slope on the east, with a fence and naturalized vegetation growing along the fenceline.

Analysis

The original spaces of the farmstead remain as they did during the period of significance and in the same relationship as existed historically. The spaces are not as clearly defined today as they were historically. Fences, vegetation, and structures that originally defined the spaces no longer remain.

The sugar maple grove, west of the Farm Home, was planted by Solomon Young in the late 1800s. The original trees were destroyed by a tornado in 1957. In 1984 the grove was replanted and trees added to follow the general pattern of the original grove as it existed east of Blue



Figure 3-8. The Farm Home yard remains similar to its appearance during the period of significance, with mown lawn and few ornamental plantings. However, the fence that once separated the space from other farm spaces is gone and the division of space between Farm Home yard, garden, and barnyard have become blurred. SS 12/6/11



Figure 3-9. The farm historically was divided into discrete spaces. The sugar maple grove is the furthest west, then the Farm Home yard, garden, and barnyard on the east. The sugar maple grove was replanted in 1984 and retains a similar spatial orientation to the Farm Home; other spatial relationships have become diminished due to the loss of the garden and its vegetation and fences which helped to define spaces. Today, it is difficult to distinguish the barnyard, particularly since none of the barns are extant. HSTL 83-127, c.1920/1930; SS 12/6/11

Ridge Boulevard. Additional trees were added in 2011 to replace those that had died. The tree pattern resembles that of the original Solomon Young grove but has fewer trees. The scale, mass and pattern of the existing grove resembles the ordered, historic grove but does not extend to Grandview Road, as it did historically.

During the period of significance, the Farm Home yard was a separate and distinct space, as it is today. It is defined by the sugar maple grove on the west, Poultry House on the east, and evergreen trees on the south, as it was historically. The NPS boundary fence defines the Farm Home yard on the north. At the center, is the Farm Home. The fencing that enclosed and defined the yard is no longer extant. The yard is also slightly smaller than its historic size as the north fence was originally approximately five feet to the north.

Within the Farm Home yard, pine trees were historically on the southwest and northwest corners of the Farm Home. Today there are only trees on the southwest corner. Historically, domestic activities took place in the Farm Home yard. The yard reflected a simplicity and utilitarian style with few ornamental plantings and space for outdoor gathering, raising chickens, and space for domestic needs such as storage for coal and ice.

The Farm Home was originally one of several large buildings. The others were large barns. As the farm changed over time, the barns were constructed, modified, dismantled, and destroyed.

The arrangement of the farm changed over time during the period of significance as buildings and structures were added and removed, and vegetation was planted and matured. By 1965, much of the vegetation around the Farm Home yard had become overgrown, creating a more

enclosed yard. The 1980s building and landscape repair removed much of the overgrown vegetation and more or less restored the historic appearance of the Farm Home yard. The restoration also included the addition of the outhouse and smokehouse (non-contributing) to evoke the farm landscape. These features are not located in historically accurate sites and distract from the historic spatial arrangement.

The garden, east of the Farm Home, was historically the kitchen garden and orchard. Later (c.1940) the garden was used for growing crops. The garden was enclosed by fencing connected to the stone posts (two extant and two non-extant). After the 1940s and into the 1960s, based on aerial photographs, the fencing was removed resulting in one yard extending from the barnyard to the Farm Home yard.

The garden remains today but is not legible as the orchard, garden, and fencing no longer remain, two of the stone posts have been removed, and there is no vegetation. Historically, the garden was a discrete, separate area.

The barnyard is the easternmost space of the Truman Farm. During the period of significance, it was filled by the Solomon Young Barn which was built in 1867 and burned in 1966. The barnyard was defined on the southeast corner by the granary, and was enclosed by fences and stone columns. The barnyard space remains, but the loss of the Solomon Young Barn, granary, fencing, and one of the stone posts, makes it difficult to distinguish it as a space. Other changes to the space include trees and native understory vegetation that have naturalized on the east boundary, which was not there historically. The vegetation encloses the barnyard, which was historically open on all sides with views to the surrounding land.



Figure 3-10. The barnyard is the easternmost space on the Truman Farm today. Historically, the barnyard was dominated on the north by the Solomon Young Barn (top) built in 1867 which burned in 1966 and was removed. Today, the space remains, however the loss of the barn, granary, and fencing makes it difficult to identify the space as a barnyard (bottom). Trees and native understory vegetation have naturalized along the east boundary. HSTL 84-17, c.1906; SS 12/6/11

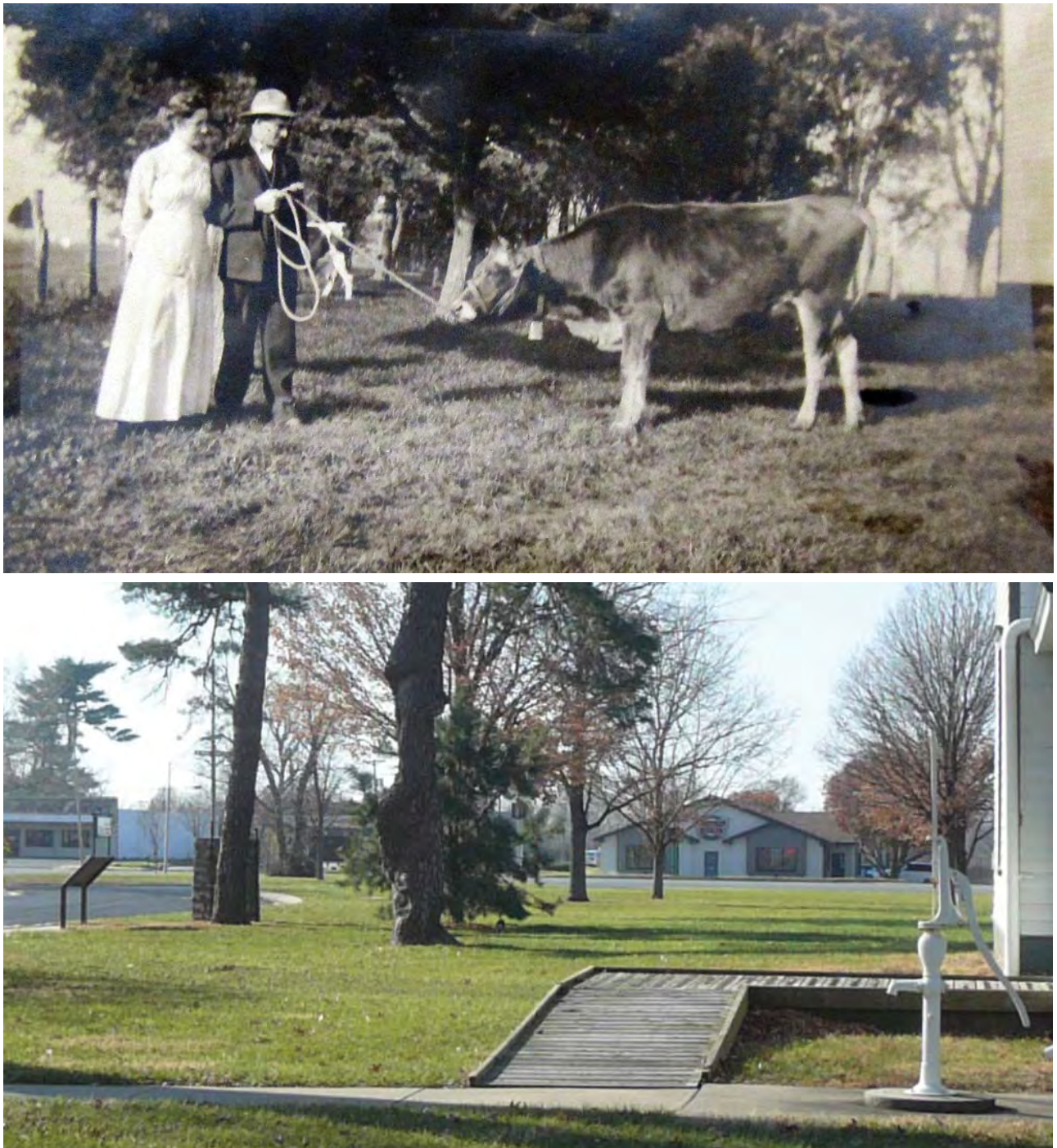


Figure 3-11. The Farm Home yard space remains, defined by the sugar maple grove on the west, Poultry House on the east, and evergreen trees on the south. At the center, is the Farm Home. Missing is the fencing that enclosed the yard. HSTL 72-3594, c.1911; SS 12/6/11



Figure 3-12. The Farm Home is set on a small level plateau with the grade descending gradually in all directions. SS 12/6/11

Topography and Landform

Existing Condition

The Truman Farm is atop a topographical rise located between the Blue River and Little Blue River, situated at approximately 1,054 feet above sea level.

The extant farm property consists of a small plateau on the north and a level field on the south. Between the two is a steep slope varying from 4:1 to 3:1. A swale occurs along the west edge of the property, along Blue Ridge Boulevard.

The north edge of the property is a steep slope (30%+/-) descending to the adjacent shopping mall parking lot and access drive. The east edge of the property is similarly steep, with a steep gradient descending to the Truman Corners Shopping Center and the Little Blue River beyond.

The north area of the property is relatively flat with few topographical changes. The sugar maple grove, west of the Farm Home, is on a relatively level ground, as is the east side of the Farm Home. The south portion of the site is a relatively flat and evenly graded field.

To the east of the Farm Home has more topographical variation.

- Two distinct depressions occur approximately 100' east of the Farm Home, south of the Poultry House. The easternmost depression is approximately 8' x 14' and the second, 6' x 10'. Both are approximately 6 to 8 inches in depth.
- A roadway trace exists from the parking area to the eastern field. It is level, about 8' wide.
- A slight circular depression occurs southeast of the Garage.

Analysis

The topography of the farm remains similar to that which existed at the end of the period of significance. The northern part of the property is a level plateau, set the field to the south.

The north, east, and south edges of the north area slope down significantly. These slopes were built at the time the buildings and roads for adjacent development were built.

- Two edges, the east and south, were graded c.1955 as part of the development of Truman Corners, a project heavily influenced by President Truman. The south field was graded as part of this development, as was the road. This parcel was never developed.
- The north edge was graded in the 1980s as part of a parking lot and access drive.

The west portion of the property, from the Farm Home to Blue Ridge Boulevard, slopes at a slight gradient from the Farm Home to the street. The sugar maple grove is set on this gentle slope.

- East of the Farm Home are two distinct depressions located east of the Farm Home. These depressions are of unknown origin. Bray, in his archeological report, hypothesized that a barn once stood in this location but little other evidence exists. It is also possible that a hog shed or other small structure stood in this location.
- The roadway trace likely dates from the period of significance. Historic photographs indicate carriages and wagons along this roadway between the Farm Home and barns. Aerial photographs also document its



Figure 3-13. A slight roadway trace exists between the parking area and the eastern field (upper left). The north portion of the property is level with its edges sloping down significantly. On the south, this slope connects to the south field. On the north and east, it slopes down to adjacent properties. The slope at the north edge of the site was built in the late 1980s with adjacent commercial development (upper right). A steep slope was built in the late 1950s separating the farm from the future development (bottom). SS 12/6/11

existence through 1959. After this date it faded and likely due to the removal of the barns the roadway was no longer needed.

- The slight circular depression southeast of the Garage was likely the location of a pond, of unknown dates. It appears in photographs from the 1980s, prior to repairs completed to the Farm Home and landscape.



Figure 3-14. The view of the Farm Home from the entrance drive (top) and Grandview Road (bottom left) is similar to how it appeared during the period of significance, however adjacent development and the realignment of the entrance drive have altered portions of the view. The view from the Farm Home and the well and pump historically offered expansive views of the surrounding countryside. Today it retains an openness across the site but views are truncated by adjacent vegetation along the site's perimeter. BN 11/23/11; TB 12/6/11; SS 12/6/11

Views and Vistas

Existing Condition

The Farm Home is the most dominant feature of the Truman Farm. Views of the Farm Home are apparent from Blue Ridge Boulevard, the entrance drive, and from many locations across the property. Views from the Truman Farm include those from the Farm Home, the eastern field, and across the property.

Views into the property include those from Blue Ridge Boulevard and the entrance drive. The view of the Farm Home from Blue Ridge Boulevard is somewhat obscured by the adjacent commercial properties on the north and south. A full view only occurs directly west of the Farm Home. At this point, the Farm Home is clearly visible from the road, and along the entrance drive in which the Farm Home dominates the view.

From the Farm Home, views occur to the west, east, and south to the Farm Home yard and lawn beyond. The west side of the Farm Home offers views to the sugar maple grove, and the original entrance to the farm with its two stone posts on Grandview Road.

Analysis

Historically, views to the Farm Home and farmstead were different from those present today, primarily due to the farm being much larger in acreage and few buildings or trees existed to obscure the view across the landscape.

Before the construction of the 1950s commercial development, the sugar maple grove and Farm Home were the dominant features. Historically, as one traveled along Grandview Road, the entrance to the Truman Farm would have been highly visible due to this large grove of trees and buildings surrounded mainly by open fields. Today this role of the grove is not

as apparent due to adjacent development that has altered the views to and from the farm.

Intentionally planted, the views to the grove from Grandview Road and the entrance drive set up a sequence of entry. Upon entering the entrance drive, the sugar maple grove served as the backdrop on one side, contrasted by open cropland on the other. The Farm Home, framed by the trees, in the distance, with barns and outbuildings beyond. This view remained until the original trees were destroyed by a tornado in 1957. This altered the visual relationship between the Farm Home and adjacent cropland, resulting in an open, exposed view between the road and Farm Home. With the replanting of the sugar maple grove in 1984, the visual character of the farm and entrance drive was restored in part.

Views from the Farm Home have also changed since the period of significance. The Farm Home, built in 1895, was set upon a small topographic rise, giving it a view of the surrounding open farmland to the north, south, and east. During the 1950s, these views began to change, as agricultural land changed to commercial development and buildings replaced the once open landscape. As parcels of the farm were sold, the views to the surrounding countryside became less extensive. As farming operations ceased, trees were grown into areas previously cultivated.

The growth of trees and the adjacent development has altered the expansive views across the broader landscape that were once apparent from the Farm Home, and today, there are few, if any, views that capture the historic sense of openness.

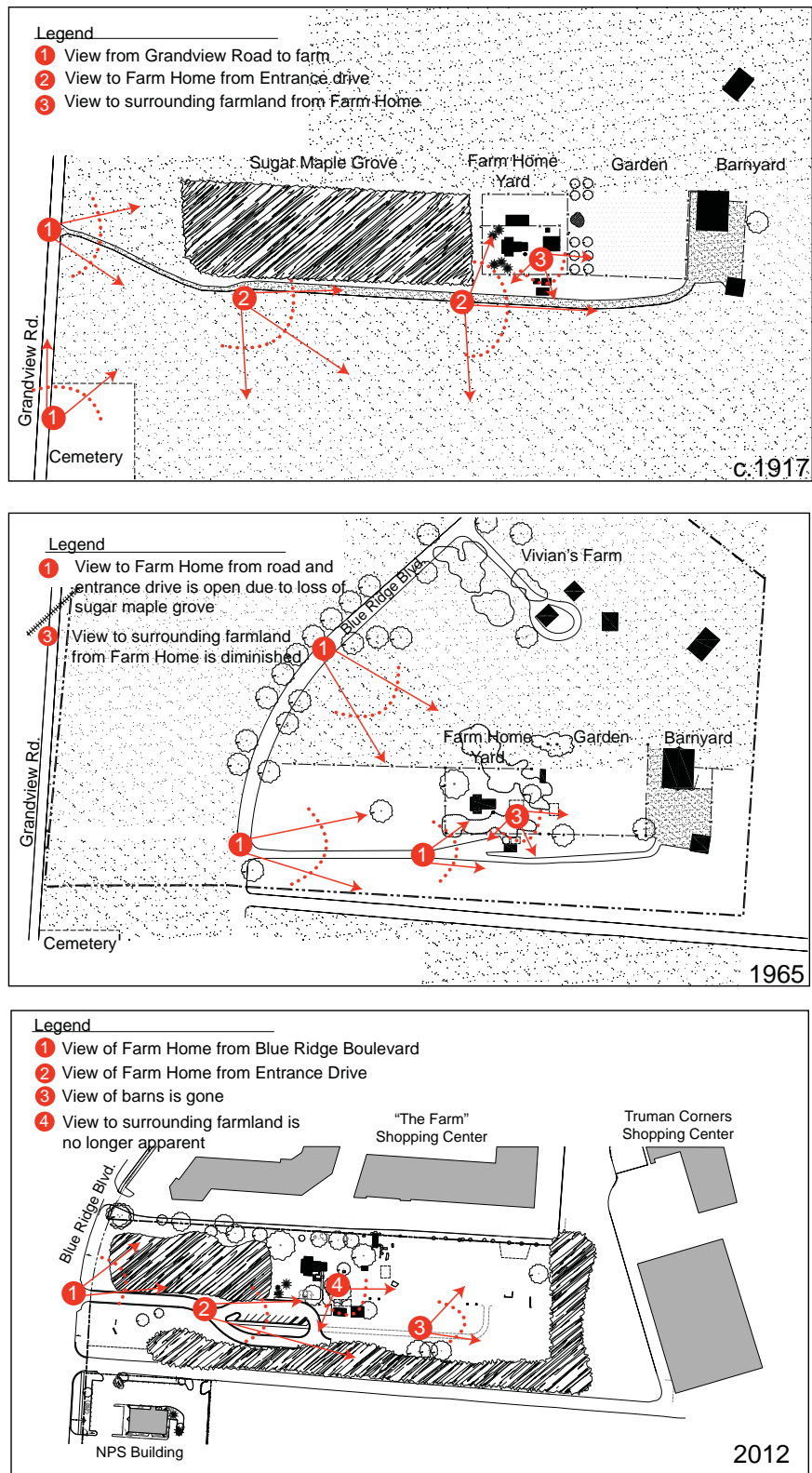


Figure 3-15. Views historically were open across the large acreage of the farm, while the sugar maple grove directed views along Grandview Road and the entrance drive. The loss of the sugar maple grove opened the views to the Farm Home in 1965, just as commercial development encroached upon the views to surrounding farmland. Today, views are obstructed by vegetation and adjacent buildings. MBD

Views across the Farm Home yard and barnyard remain similar to those that existed historically. The views today are truncated by trees on the east and south sides of the property and trees growing between the north and south portions of the property. These trees did not occur historically. Views would have extended beyond the current farm boundary and the view between the north and south portions of the property would have been open.



Figure 3-16. Views from the farm have changed since the period of significance. The sugar maple grove stood out against the agrarian landscape (top). During the 1950s, these views began to change, as agricultural land changed to commercial development and buildings replaced the once open landscape. HSTL 84-12-3, c.1920



Figure 3-17. Vehicular access to the property is from Blue Ridge Boulevard, via a 20-foot wide asphalt entrance drive that leads to a parking area located just southwest of the Farm Home (top). Concrete paths connect the parking area with the Farm Home. A wood accessible ramp provides access into the Farm Home. SS 12/6/11

Circulation

Existing Condition

Circulation at the Truman Farm includes vehicular and pedestrian traffic. Vehicular access to the property is from Blue Ridge Boulevard, along a twenty-foot wide asphalt entrance drive that leads to a parking area located just southwest of the Farm Home.

The parking area is a circular drive with angled parking, consisting of nine parking spaces including one accessible space, an accessible aisle, and an accessible sidewalk ramp. The asphalt drive and parking area include a shallow concrete drain pan and curb. The southeast corner of the drive does not have a curb, which allows maintenance vehicles access to the east portion of the property. Another service parking space is located on a concrete pad just west of the Garage, and is approximately 32' x 20.'

A road remnant occurs south of the entrance drive, connecting Blue Ridge Boulevard, ending at Tract 3, and extending east to Truman Corners Shopping Center to the east. This road is in poor condition and access is restricted by a gate approximately 250 feet east of Blue Ridge Boulevard. The west road portion forms part of the circulation system of Tract 3.

Concrete paths connect the parking area with the Farm Home. One path parallels the parking area on its north side for approximately 90-feet, connecting to another path that extends from the parking area to the south side of the Farm Home. This path is approximately four-foot wide, and provides a route for visitors to access the Farm Home.

An accessible route into the Farm Home is provided by the wood ramp that connects with the covered porch of the Farm Home,

entering into the dining room. The ramp is in good condition, as are the concrete paths. The remainder of the pedestrian circulation is informal throughout most of the site and no other developed paths exist.

Additional circulation includes the vehicular and pedestrian circulation within Tract 3. This consists of two access points from Blue Ridge Boulevard that then form a circular drive in front of and around the building on Tract 3. Parking is available for more than 40 vehicles with two accessible spaces, an accessible aisle, and accessible sidewalk ramps. A concrete sidewalk at the west and south edges of the building connect the parking area with the building's entrance.

Analysis

The circulation patterns that exist today at the Truman Farm somewhat follow historic routes, although the scale and surfacing of drives and paths today differ from those that existed during the period of significance. A large parking area exists in an area historically open farm land. In addition, other circulation routes exist that were used historically but are not currently in use.

Vehicular access from Blue Ridge Boulevard dates from 1929 when the road was built bisecting the Truman property. Prior to this, access to the farm was from Grandview Road further to the west. Construction of Blue Ridge Boulevard across the property shortened the length of the entrance drive, divided the sugar maple grove, and became a dominant feature and edge.

The asphalt driveway and parking area were built in the mid-1980s by Jackson

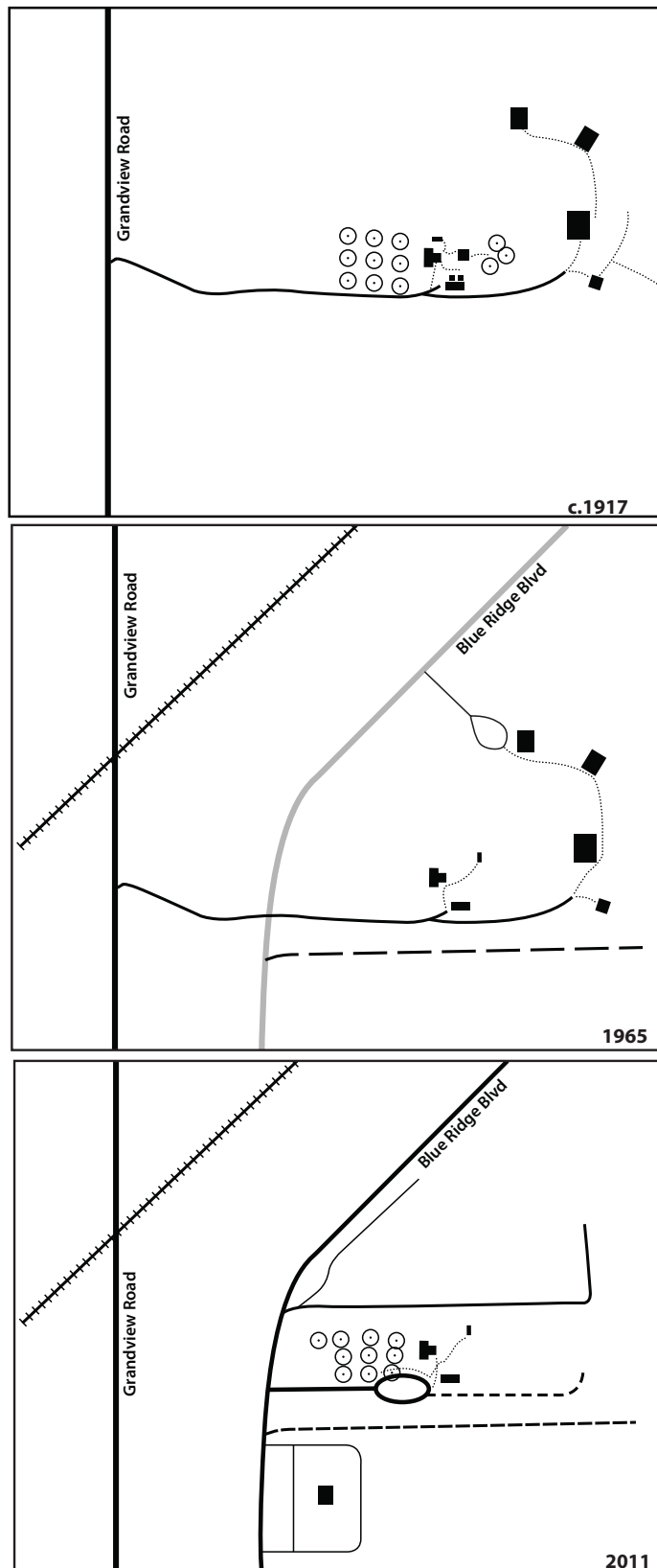


Figure 3-18. In 1917, circulation included a dirt entrance drive from Grandview Road and a network of informal paths. The Trumans granted a right-of-way to the Kansas City & Grandview Railway company in 1927. By 1965, the entrance to the farmstead had shifted to Blue Ridge Boulevard. Today, the entrance drive is different from its historic material and alignment, and does not extend to the barnyard as it did historically. MBD



Figure 3-19. Historically, a path connected the Garage to the Farm Home (top). By c.1960, a raised, likely paved, pathway connected the two. Later a concrete pad occurred directly south of the Farm Home (middle photos). The concrete pad is now gone. The path from the parking area to the back door of the Farm Home remains in essentially its historic alignment (bottom). HSTL 029005, c.1940; HSTL 61-66-02, c.1961; Al O'Bright 8/83; SS 12/6/11

County to provide visitors access. The large parking area encroaches on the farm landscape, disrupting the bucolic setting. This drive somewhat follows the historic alignment of the original entrance drive. However, during the period of significance the drive was located further south and did not have a large circular drive or parking area. Historically the need for parking was minor, provided in the Garage which Harry S Truman moved to the site in 1914.

The existing access road that connects Blue Ridge Boulevard with the Truman Corners Shopping Center was built in c.1955 as part of the shopping center development, which included plans to develop the south field. These were never actualized the road remains as built. Over time it has deteriorated and is in poor condition.

The concrete walkways that connect the parking area with the Farm Home were added in the 1980s. Historically, a path connected the Garage to the Farm Home. The Farm Home yard was fenced as early as c.1906, and a gate in the south portion of the fence provided access to the Garage. This pathway was not paved, and the area around the well was packed dirt until c.1960, according to historic photographs that indicate a raised pathway, likely paved.¹⁹

Photographs from the 1980s taken prior to repair work, indicate a large concrete pad covered the well and formed a paved area on the south side of the Farm Home. This has since been removed and replaced with the existing concrete paths. Photographs from the 1980s also indicate a concrete pad in front of the Garage, but it is unknown when this first was built.

The concrete sidewalk along the parking area was built in the 1980s and is

¹⁹ HST Archives, photograph 61-66-02.

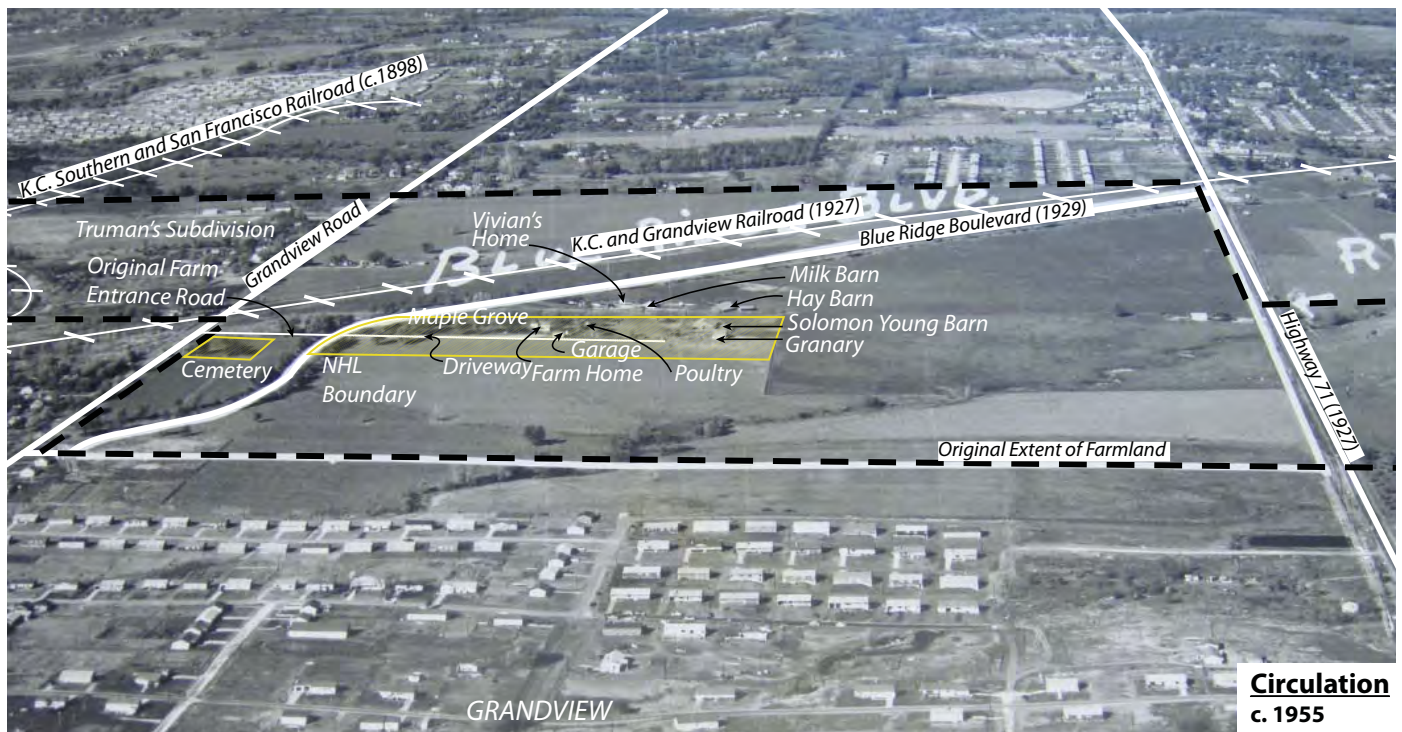
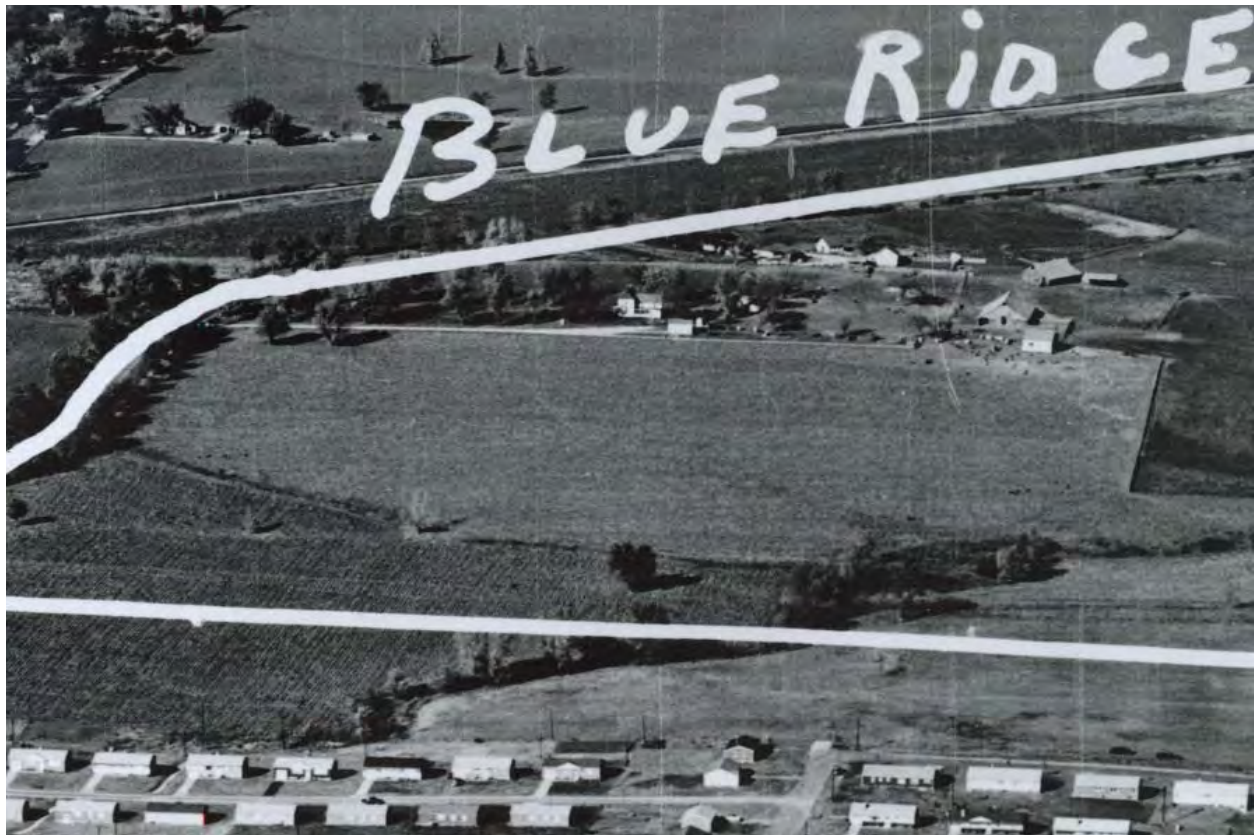


Figure 3-20. Circulation patterns had begun to change around the farm by the 1920s with the addition of Blue Ridge Boulevard, Highway 71, and the Kansas City and Grandview Railroad. They would be further altered during the 1950s as farmland was sold to make way for commercial development. HSTL c.1955



Figure 3-21. Historically, the entrance road continued beyond the Garage, past the kitchen garden, to the barnyard (top). Today, this road is barely visible as it was allowed to fade once farming waned and the barns were removed (bottom). HSTL 80-8, c. 1910; SS 12/6/11

not historic. The accessible ramp was added in 1996 and provides wheelchair accessibility between the parking area and Farm Home.

Historically, pedestrian circulation around the farm was likely relatively informal. Paths would have existed from the Farm Home to the Poultry House, around the well and pump, to the kitchen garden and orchard, and to the barnyard. Pedestrian routes would have been shared with drives for carriage access, and later vehicles.

Archeological evidence and historic aerials indicate that historically the entrance road continued beyond the Garage, and the kitchen garden to the barnyard between the Solomon Young Barn and the granary. This road was likely present from Solomon Young's time on the farm (1867) and appears clearly in an aerial photograph from 1959. It likely faded after farming activities ceased and the Solomon Young Barn burned in 1966. Traces of this road are visible today.

Other paths and dirt drives connected the barnyard and Solomon Young Barn with the hay barn and milk barn to the north throughout the period of significance. These paths have been completely removed due to the development of the shopping center north of the Farm Home.

Post 1



Posts 4 and 5



Posts 2 and 3

Figure 3-22. There are five standing stone posts built of coursed limestone and mortar with concrete caps. The posts occur along an east west line south of the Farm Home and historically supported fences and gates. SS 12/6/11; BN 11/23/11

Small Scale Features

Existing Condition

Several small scale features exist within the Truman Farm. These include extant features from the period of significance and those of contemporary construction that facilitate interpretation of the site. Important small-scale features include the Truman Farm Well and Pump (TF05), stone columns (TF04), and fencing.

Truman Farm Well and Pump (TF05)

To the immediate south of the Farm Home, a white hand-pump set atop a well is set into the concrete sidewalk. The concrete sidewalk widens around the pump to six by eight feet, and the pump is mounted on a raised circular concrete platform measuring approximately eighteen inches.

Stone posts (5 standing; 5 overturned) (TF04)

There are five stone posts standing at the Truman Farm, built of coursed limestone and mortar with concrete caps. Iron hardware is evident on most of the posts. The five standing posts occur along an east west line south of the Farm Home. Four are set into two pairs, and one is separate from the others, set southwest of the Farm Home. These posts are described as Posts 1, 2, 3, 4, and 5.

Post 1 is approximately thirty-two inches square and five feet in height. It has two metal pipes, one on the east side and the other on the north that extend to the full height of the post.

The other stone posts are set in pairs. The west pair, Posts 2 and 3, are spaced 14-feet apart. Each post is 32-inches square and five feet in height. Post 2 has an iron post on its west side with an attached remnant of wire fencing. The east side of the post has a recessed space in the stonework, approximately 30-inches



Figure 3-23. The Truman Farm Well and Pump is immediately south of the Farm Home. The pump is not original, is of a slightly different style and faces a different direction from the one that stood in this location historically. SS 12/6/11



Figure 3-24. Fences enclose three sides of the Truman Farm and include three fence types. A post and wire fence is on the north edge (top), and around the Poultry House (middle); a post, mesh, and barbwire fence occurs at the east and southeast edges (bottom left), and post and barbwire fence at the south edge (bottom right). SS 12/6/11

above the ground. Post 3 has an iron post and remnant wire fencing on its east and north sides. It also has an iron eye, 2-inches in diameter and three feet above the ground on its south side. On the west side of Post 3 are two iron hinges.

The east pair, Posts 4 and 5, are in alignment with and located 171 feet directly east of Posts 2 and 3. Posts 4 and 5 are approximately 32-inches square, and 5-feet in height. Post 4 has an iron pole on its west side and a recess in the stonework on the east. Post 5 has two hinges on its west side and two more on its east side. The north side of Post 5 has two iron eyes, similar to Post 3.

Remnants of other stone posts exist on the property. A pile of limestone boulders is clustered just north of Post 3, and the remnants of five stone posts are also evident. These are described as Posts 6, 7, 8, 9, and 10, although they are no longer standing.

Posts 6 and 7 are closest to Post 3 in a cluster of debris and are both broken into large pieces. The largest piece of Post 6 measures 34-inches by 33-inches and is 39-inches long. An iron pole flanks one side. Two other pieces nearby are approximately 12-inches high, with one measuring 35-inches square and the other 18-inches by 24-inches. Within this same stone debris are remnants of Post 7. Part of this post is set upright and is 35-inches square and 27-inches in height; the other portion of this post is 13-inches in height and 35-inches square.

Further north are Post 8 remnants. This post is broken into two pieces. The largest piece is 55-inches long and 35-inches square at one end, and 31-inches square at the opposite end. The other portion of Post 8 measures 35-inches square by 12-inches in height.

Remnants of Post 9 are just north of Post 8. This post is also broken into two pieces. The largest piece is 54-inches long, with varying widths (between 30-inches and 38-inches) on its sides. An iron pole runs parallel to the longest side. The smaller portion of this post measures thirty-four inches square by fifteen inches.

Post 10 is located northeast of Post 9. It is cracked in half, along the line of iron reinforcement. In total, it is 83-inches long and varies in width from 36-inches by 27-inches on one end to 33-inches by 27-inches on the opposite end. This post also has a fragment of iron post, about three feet long, on one side.

Fences

Fences enclose the boundary of the Truman Farm NHS. These include three different fence types—post and wire (north boundary and around Poultry House); post, mesh, and barbwire (east and southeast boundaries); and post and barbwire (between the north and south portions of the property).

Fence 1 was installed after the 1994 transfer of property to the NPS. The post and wire fence along the north property boundary separates the farm from the shopping center. The fence is supported by wood posts and rails at the corners and where adjacent to the Poultry House with regularly spaced metal posts in between. The wood posts are 62-inches in height, and the wire mesh fence is approximately 50-inches tall. This fence extends from approximately 130 feet northwest of the Farm Home to the northeast corner of the property for a total length of 625 feet. It is interrupted by the Poultry House as this structure extends across the property boundary for about one foot. The fence is in good condition.

Fence 2 is a post and wire fence that frames the concrete pad of the Poultry



Figure 3-25. Small scale features within the Truman Farm include features of contemporary construction that facilitate interpretation of the site, such as yard lights, signage, and the flagpole (top). An antique hayrake near the entrance is the only piece of farm equipment on display at the farm (bottom). SS 12/6/11; BN 11/23/11

House. This fence is 28-feet long and is supported by two wooden posts, one at the south end, one at the northwest corner. The east end of the fence connects to the Poultry House. Another wood post is located across the concrete pad from the fence with only a set of metal hinges on its west side. This wire fence is of a denser weave than others on the property. In several places it does not reach its full height, likely damaged due to overgrown vegetation. There are three small trees (likely volunteers) at the northeast corner, and they are displacing the wood post. This fence is in poor condition.

Fence 3 is a wood post, wire mesh and barbwire fence that defines the east and southeast boundary of the Truman Farm. This fence is supported by wooden posts at property corners, and has wire mesh at the bottom with barbed wire strands at the top. Metal posts support this fence at regular intervals. Portions have fallen or have been damaged by falling tree branches and dense volunteer overgrown vegetation. The corner posts at the southeast property corner differ from others on site. They are not turned posts, but are untreated, natural wood, reinforced with two metal cross-pipes.

Fence 4 is a post and barbwire fence that occurs between the north portion of the property where the Farm Home is set and the south portion that is a field. It is also overgrown with dense vegetation and portions of it have been damaged. It extends for approximately 470 feet.

Concrete pad near Poultry House

Located immediately south of the Poultry House is a concrete pad measures 16-feet by 19-feet. Poured as one slab, it is cracked across its length and width and at the edges closest to the building. It is framed on one side by a post and wire fence and on the other by the Poultry House.

Interpretive signage consists of four signs including the entrance sign and a brochure stand. The main entrance sign at the edge of the Truman NHS at Blue Ridge Boulevard, and two interpretive signs are located near the Farm Home. The interpretive signs are relatively new additions and function to orient the visitor to the property and its history. A small stand with interpretive brochures is located along the concrete sidewalk from the parking area to the Farm Home.

Pin oak plaque (TF06)

A bronze plaque occurs under a pin oak tree in the Farm Home yard. It was placed in 1987 by the National Association of Retired Federal Employees to honor the United States Constitution.

Yard Lights (4)

Four yard lights are located at the corners of the Farm Home with lighting directed toward the building. These lights are approximately 9-inches tall, set on a small concrete base.

Flagpole

The flagpole is located to the south of the Farm Home and just west of the Garage on the concrete pad in front of the Garage. It is unknown when the flagpole was installed.

Farm equipment

Adjacent to the entrance sign is a rusted hayrake. It is the only piece of antique farm equipment on display.

Analysis

The only small scale features that date from the period of significance are the stone posts and the well. During the period of significance, numerous small scale features existed, including the original iron pump, rain barrels around the Farm Home, fences, additional stone posts, and other miscellaneous features that have disappeared since farm operations ended.



Figure 3-26. A well has existed immediately south the Farm Home since the first Farm Home was built in 1867. Originally, water was drawn by a windlass and bucket (top), by 1912 the windlass was removed and a pump had been installed (middle and bottom). HSTL 84-12-09; HSTL 83-126; HSTL 84-18; HSTL 84-21; HSTL 2006-77

Today, many small scale features within the Truman Farm are contemporary features that assist with interpreting the historic site but are not contributing features.

Truman Farm Well and Pump (Well 1867; Pump 2007) (TF05)

One of the most prominent small scale features is the Truman Farm Well and Pump that has changed in style and appearance since the period of significance.

A well has existed in the same location as the existing pump since the first house was built in 1867. Originally, water was drawn by a windlass and bucket, but by 1912 the windlass was removed and a black pump added. In May of 1912 Harry S Truman notes in a letter to Bess that he had painted the pump handle white, after running into it in the dark.

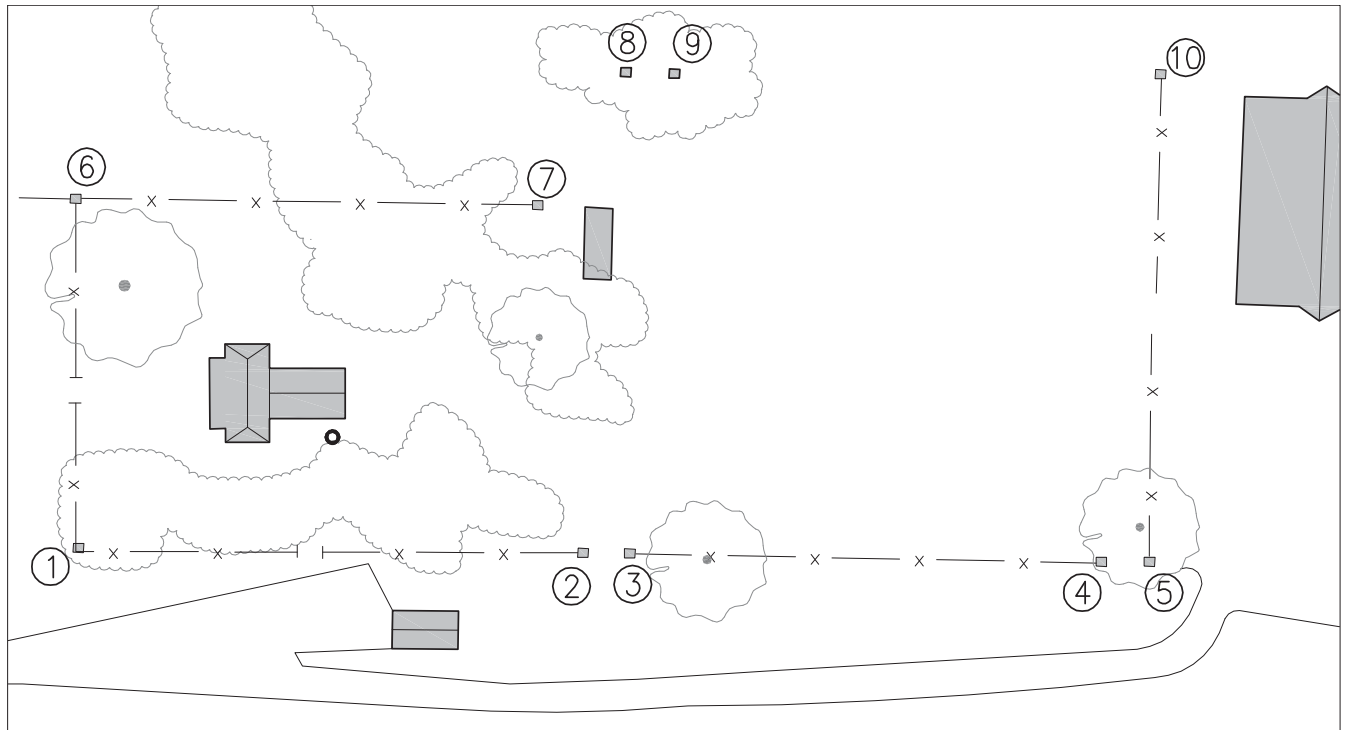
After the Farm Home was connected to running water in 1949, the well was no longer needed for domestic use. The original pump was removed by the 1960s and the well covered by a concrete pad.

Between 1984 and 1995 a replica of the white pump was placed over the well, with a bronze plaque in memory of Harry S Truman (now in the museum collection). In 2003, the pump handle and pump were stolen, and it was replaced with the current pump and handle in 2007. This pump is oriented slightly different from how it appeared historically. The pump handle is oriented to the north as it was historically, but the spigot faces south where as historically it was to the east.

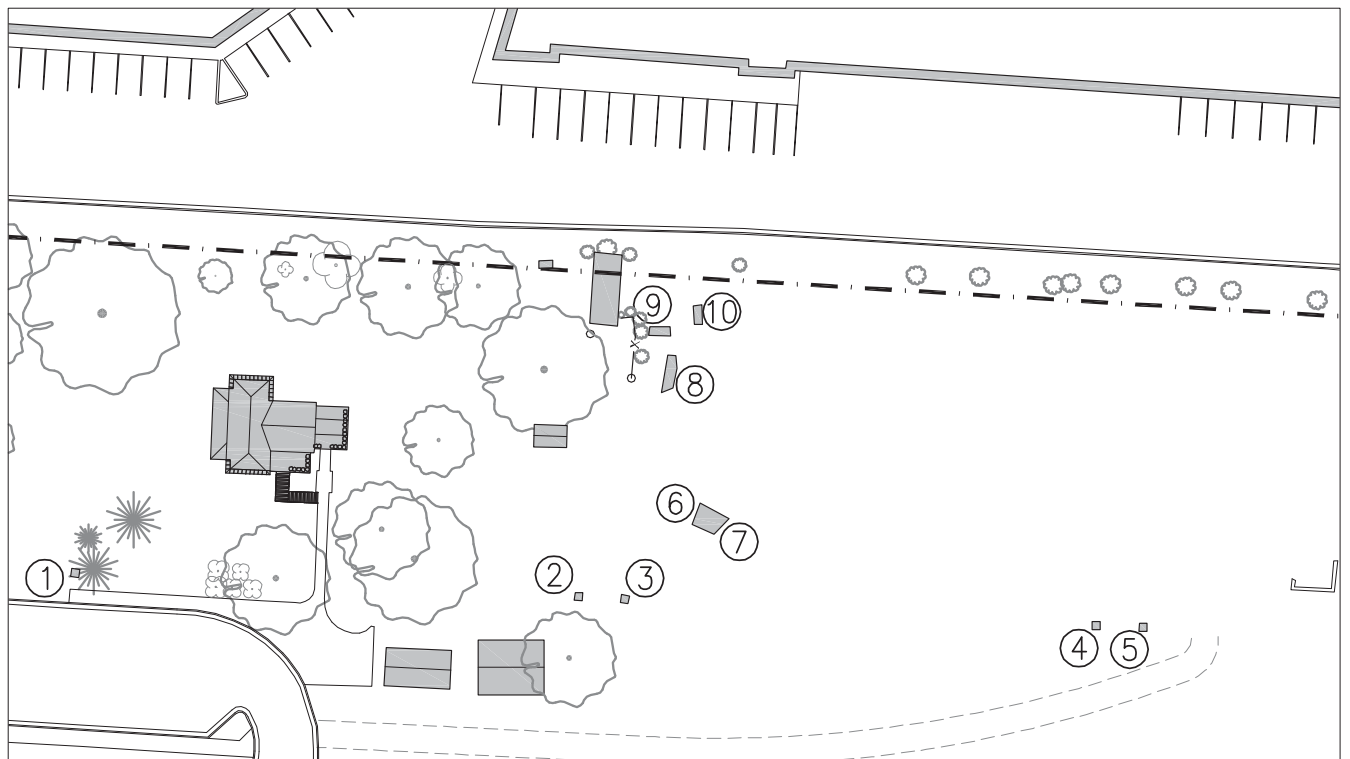
The pump is not a contributing feature, but assists in telling the story of the farm landscape, since numerous family photographs taken around the well indicate that in some respects, this was the center of domestic life on the



Figure 3-27. The Farm Home received running water in 1949 and the well was no longer needed for domestic use. After the period of significance, the pump was removed and the well was covered with a concrete pad. Today's pump is a replacement sited similarly to how it appeared historically. Al O'Bright 8/83, SS 12/6/11



1965



PRESENT

Figure 3-28. The stone posts at the Truman farm likely date from c.1920 to 1930. After the shopping center to the north of the farm was developed in 1987, several of the stone posts (Posts 6 through 10) were removed and placed, on their sides, on the farm property. MBD

farm. The well retains its place, and is a contributing feature to the cultural landscape.

Stone posts (c.1920-1930) (5 standing; 5 overturned) (TF04)

The stone posts date from the period of significance and are contributing features.

It is unknown when the stone posts were built. In 1911 Truman referred to stone posts in a letter to Bess but it is uncertain where they were located, as they could have been elsewhere on the 300 acre farm. The stone posts don't appear clearly in historic photographs until the 1930s and 1940s.

The stone posts were placed to anchor the corners of fences that defined the Farm Home yard, garden, and barnyard spaces. As farming activities ceased in the 1950s, fences were not maintained and eventually were removed. After the period of significance, the stone posts remained but fences were covered by naturalized vegetation and the historic divisions of the farm were less clear. Today, the stone posts are a striking component of the property but their context and association with the fences and the spaces they denoted is less evident.

Posts 1 to 5 are in their original locations. The other five posts (Posts 6 to 10) were removed during the 1987 construction of the Truman Farm Shopping Center on land that was historically Vivian Truman's farm. These posts were placed in the field east of the Farm Home. Posts 6 through 10 are broken and lying on their sides and it is somewhat difficult to distinguish one post from another. The posts are contributing features of the farm landscape.

Fences

Fence 1 is a newer fence built by NPS employees in 1994 to deter foot

traffic across the property and to deter vandalism along established foot paths across the property. It is non-contributing.

Fence 2 is likely from the period of significance. The Poultry House was moved c.1930 to 1940, and the concrete pad was likely poured at this time. By the 1980s, this area was well overgrown with vegetation which was cleared after the repairs to the Farm Home. This fence is a contributing feature.

Fence 3 is of an unknown date. No fence existed in this location during Harry S Truman's time at the farm. It is possible that the fence dates from the 1950s after Truman Corners shopping center was developed.

Fence 4 may have been added in the late 1950s after Truman Corners shopping center was developed.

Non-contributing Features

The newer small-scale features including the interpretive signs, yard lights, flagpole, antique farm equipment, water pump, and faucet are all non-contributing features as they are not from the period of significance.



Figure 3-29. Five posts were removed during the 1987 construction of the Truman Farm Shopping Center on the land north of the Truman Farm that was historically Vivian Truman's farm. They were placed in the field east of the Farm Home. Posts 6 through 10 are broken and lying on their sides. SS 12/6/11

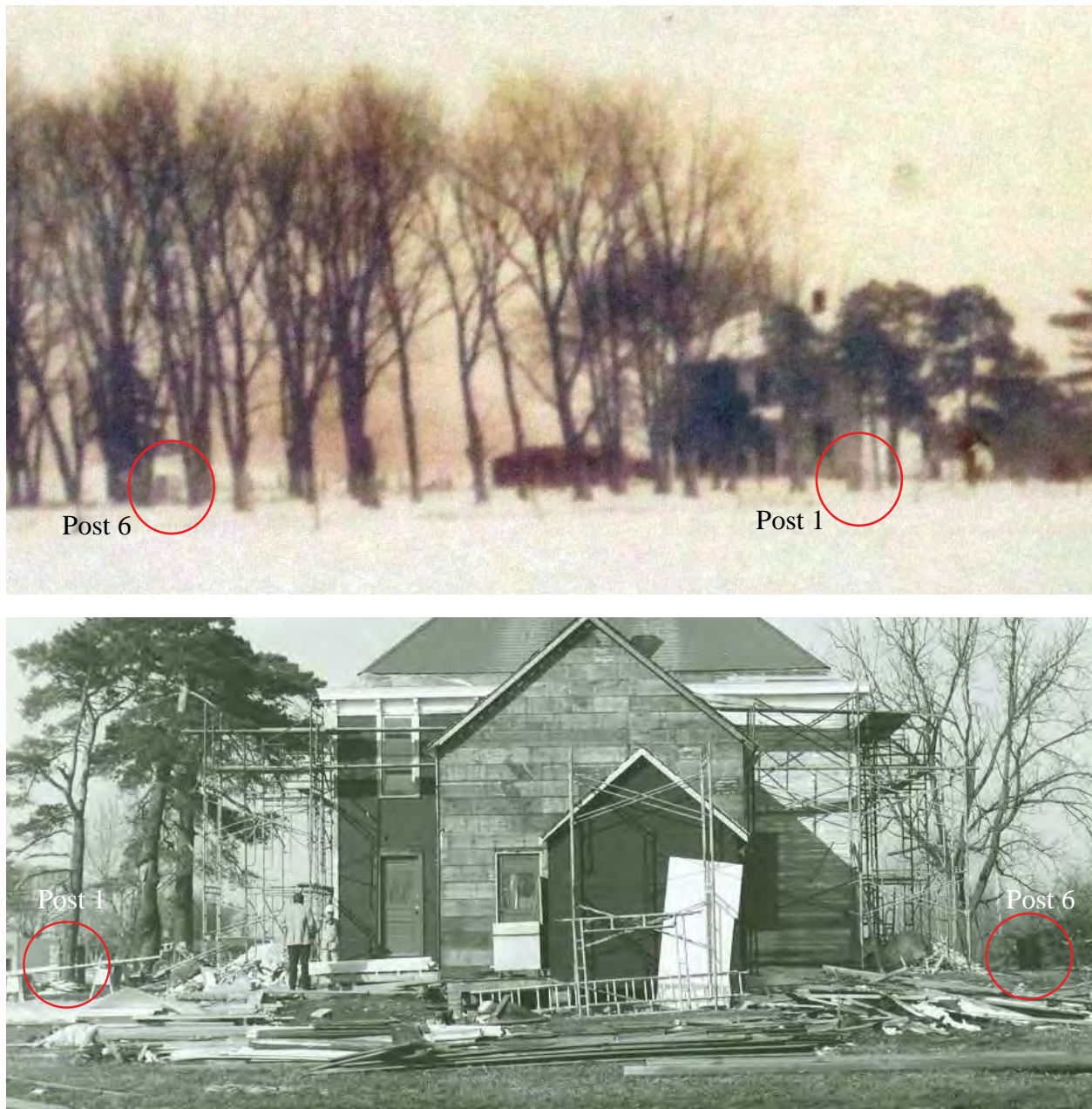


Figure 3-30. During the period of significance Posts 1 and 6 supported a fence that framed the front of the Farm Home yard (top). At some point the fence was removed but the stone posts remained into the 1980s (bottom). In 1987, the north post, Post 6, was removed for development of the adjacent property. HSTL 2 83-127, c.1920-1930; Jill O'Bright 2/84



Figure 3-31. During the period of significance, the stone posts marked the corners of different portions of the farm. Along with fences, the posts defined the spatial organization of the property. Post 8 historically was located north of the Poultry House and defined the garden (middle left). It was removed in 1987 (lower left). Post 6 was located northwest of the Farm Home (middle right) and defined that portion of the Farm Home yard. The post is no longer extant (bottom right). Jill O'Bright 2/84; SS 12/6/11; BN 11/23/11



Figure 3-32. The stone posts were placed to anchor the corners of fences which distinguished the Farm Home yard, garden, and barnyard spaces. As farming activities ceased, fences were not maintained and eventually were removed and (Posts 8 and 9, top). After the period of significance, Posts 2 and 3 remained but were obscured by overgrown vegetation (middle). The extant Posts 2 and 3 are a striking component of the cultural landscape but their context and association with fences and the spaces that they denoted has been lost (bottom). Bill Curtis 1974; Al O'Bright 8/83; SS 12/6/11



Figure 3-33. Volunteer grasses grow taller along the north boundary fence (upper left). A few trees remain from the period of significance, including a 72" maple (upper right), while the few ornamental plantings include spirea (middle right) and grapevines along the north fence (lower right). A native pin oak is located just behind the Farm Home, planted in 1987 (lower left). SS 12/6/11

Vegetation

Existing Condition

The vegetation of the Truman Farm consists primarily of mown grass and deciduous trees associated with the Farm Home and overgrown vegetation along the property lines.

The sugar maple grove of 18 trees is located between the west facade of the Farm Home and Blue Ridge Boulevard. This grove contains evenly spaced rows of trees of various ages all are in good condition. In 2011, several trees were planted to fill in gaps in the rows.

In addition to the sugar maple grove, other tree species include crabapple, elm, walnut, oak, and pine. Southeast of the Farm Home is a grouping of three pine trees varying in height and diameter from 26-inches in diameter to 8-inches and approximately 30-feet high to 12-feet high. These trees are in fair condition.

The other trees are in fair to poor condition. The 72-inches in diameter maple near the Poultry House, likely established during the period of significance, is in fair condition. A native pin oak is east of the Farm Home, planted by the National Association of Retired Federal Employees in 1987 and is in good condition.

Ornamental plantings are sparse, but a few deciduous shrubs are near the Farm Home, including spirea north of the home and lilacs to the south.

Several vines grow along Fence 1, along the north property line. These are primarily grape vines. Mixed into the vines are tall grasses and small trees.

A grape vine is on the fence that surrounds the concrete pad at the Poultry



Figure 3-34. Mown lawn covers most of the property. Volunteer vegetation grows along fence lines (top and middle). A thick line of trees that have been extensively pruned to accommodate power lines occur along the fence line between the north and south portions of the property (bottom). SS 12/6/11; BN 11/23/11



Figure 3-35. During the period of significance, the adjacent land was under agricultural use and the vegetation varied from season to season and mostly consisted of cereal crops and pasture grass, which contrasted with the vegetation planted around the Farm Home - the maple grove and pine trees -which were both northwest and southwest of the Farm Home (top). Today, the agricultural land with its low-growing grasses and crops is gone, while the trees around the Farm Home have been replanted and reflect the historic planting pattern (bottom). HSTL 72-3585, c.1912-1920; SS 12/6/11

House. Larger volunteer shrubs and trees occur at the base and foundation of the Poultry House. A large stump is located to the east of the Poultry House. This may have been a mulberry tree that was threatening the foundation and was removed.

Naturalized, volunteer vegetation grows along the east boundary of the property and continues down the slope to Turman Corners. This area is dense with undergrowth and overcrowded tall trees. Along the fence to the south of the Farm Home dense brush is accompanied by a thick line of trees runs east west. These trees have been extensively pruned to accommodate overhead power lines. As a result, these trees are in poor condition.

Lawn covers most of the property, occurring underneath the sugar maple grove, extending to the foundations of the Farm Home and other outbuildings, and in the field east of the Farm Home.

A few bare spots in the lawn exist in the east field. Grasses grow taller along fences and the south field is primarily grass.

Analysis

The vegetation of the Truman Farm has changed since the period of significance, although certain vegetative patterns remains similar to those that existed historically. These include the pattern of the sugar maple grove, trees around the Farm Home and fields.

During the period of significance, the land surrounding the Farm Home and barns was cultivated. The vegetation varied from season to season and mostly consisted of cereal crops and pasture grass. Naturalized vegetation likely grew along fences, natural drainages, and roadways. Today, the surrounding land has largely been replaced by commercial development. Naturalized vegetation still

grows along fences and ditches although these features are not in the same locations as they were historically.

In 1867, Solomon Young planted a large sugar maple grove to the west of the Farm Home. The trees were planted in evenly spaced rows and extended from the front of the Farm Home to Grandview Road. The original trees were destroyed in 1957 by a tornado. The grove was replanted in 1984 by two local girl scout troops who planted twenty 10-foot sugar maple trees in a pattern similar to the original but not in the exact locations. Some of these trees died, and the grove was replanted in autumn of 2011 with ten 3-inch maples. Although none of the original maple trees planted by Solomon Young remain, the trees that currently stand continue the historic pattern. The sugar maple grove is a character-defining feature that contributes to the historic character of the Truman Farm.

The other tree species, crabapple, elm, walnut, oak, and pine, are likely not from the historic period. The exception is the large maple tree in the back of the Farm Home yard. The three pine trees are not from the historic period but are in a historic location. During the period of significance pine trees also grew northwest of the Farm Home.

The area immediately adjacent to the Farm Home was historically relatively kept free of ornamental plantings and a lawn was grown right up to the foundation of the Farm Home. Martha Ann Swoyer, Harry Truman's niece, remembers Martha Ellen Truman growing nasturtiums and cockscomb "in that old foundation that was out the back there in the yard."²⁰ There is no evidence of these plantings today.

Historic photographs indicate two rose

²⁰ MAS Interview, HSTR #1991-5



Figure 3-36. In 1867, Solomon Young planted a large sugar maple grove to the west of the Farm Home that extended along the entrance drive to Grandview Road. This grove of trees was destroyed in 1957 by a tornado and was replanted in 1984. Although none of the original maple trees planted by Solomon Young remain, the trees that currently stand resemble the design of the original grove. HSTL 84-9, c.1940; BN 11/23/11

arbors grew along the fence that framed the Farm Home yard. One grew over the west gate and the other over the south to the side entrance of the Farm Home yard. These rose arbors were present between the 1920s and 1950s, based on historic photographs, which roughly corresponds to the time that Mary Jane and Martha Ellen lived in the Farm Home. The rose arbors are not extant and no indication of their presence remains.

Little evidence exists of the other plantings that are known to have existed historically near or around the Farm Home. The existing lilacs and spirea may have been added by the Williams family during the time they leased the property from the Trumans, 1956 to 1982.

After 1965, the vegetation around the Farm Home appeared to be more dense and overgrown. During the 1980s Farm Home repairs, the property was cleared of much of the overgrown vegetation. This more open appearance occurs today, and is in keeping with the historic appearance of the Farm Home.

The Trumans kept a vegetable garden and an orchard east of the Farm Home. It is unknown exactly where each were located, but it is likely they were between the Farm Home yard and the barnyard. Written documentation notes the Truman family grew fruits and vegetables for their own use. These included apples, peaches, grapes, blackberries, strawberries. A kitchen garden with assorted vegetables and a large asparagus patch was planted just east of the east Farm Home yard gate. Based on an aerial photograph this garden was gone by the mid-1940s. It is possible that due to the financial troubles around this time and Martha Ellen and Mary Jane moving into Grandview, that the garden fell into disrepair. There is no surface evidence of the orchard or the kitchen garden today.



Figure 3-37. Rose arbors grew along the fence that bordered the Farm Home yard. One was over the south gate (top). These rose arbors were present between the 1920s and 1950s, but today no indication of their presence remains (bottom). HSTL 84-82-1, c.1930; SS 12/6/11



Figure 3-38. The Farm Home yard historically had of short mown grass with few ornamental plantings. Pine trees grew in the front and shade trees grew in the back (top). By the 1980s vegetation was overgrown and enclosed the Farm Home yard (middle). Today the yard is clear of brush and the vegetation more closely resembles the period of significance. HSTL 029005, c.1940; Al O'Bright 8/83; BN 11/23/11

Naturalized vegetation grew along the east and south property boundaries after the adjacent parcels were sold in the 1950s. This vegetation did not exist historically. This edge was historically where the barnyard met cropland or pasture grass.

The mown lawn covering the majority of the property is similar in appearance to the historic vegetation, especially underneath the sugar maple grove and around the Farm Home. However, there is more mown lawn today than occurred historically. The garden historically had small trees and vegetables. In the 1940s and mid-1950s, this area was used for cropland.

Vegetation of the barnyard during the period of significance was sparse as the area was for animals and was likely packed earth. Historic photographs and Harry S Truman's writings indicate that there was a large sycamore tree to the east of the Solomon Young Barn. This tree is non-extant.

The south field was cultivated for most of the period of significance. In the late 1950s it was graded and made level for a never completed development. Since that time, grasses have been allowed to cover its surface, as it appears today. Despite the change of vegetation type, the openness and uniform vegetation in this field is consistent with its historic appearance.



Figure 3-39. A few historic photographs indicate that the garden had an orchard and asparagus patch (top right). The garden was fenced between the Farm Home yard and barnyard. Today, there is no surface evidence of the garden or the orchard. HSTL 62-290, c.1920; HSTL 84-12-10, c.1906; HSTL 72-3577, c.1906



Figure 3-40. Historically, vegetation varied from season to season, mostly consisting of crops such as oats, wheat, corn, clover, as well as pasture grass. Naturalized vegetation likely grew along fences, natural drainages, and roadways. Today, mown lawn covers most of the property, and is similar in appearance to the short crops that once covered the landscape. The seasonality associated with the cropland is no longer apparent. HSTL 62-288, c. 1940; TB 12/6/11



Figure 3-41. Photographs noted the following from top left clockwise to lower right: Existing Pole Mounted Transformer; Existing Main Electrical Panel; Existing Building Floodlight; Existing Abandoned Electrical Service; late 1950s Historic Cobra Head Light; Existing Flagpole. JB 12/6/11; TB 12/6/11

Site Utilities

Existing Condition & Analysis

The Truman Farm has several existing site utilities including electrical, telecommunications, water, sanitary sewer and storm sewer. Adjacent utilities include sanitary sewer. The locations of these utilities are noted on the Existing Utilities Plan.

Electrical

Farm Home

Electricity was originally brought to the property between 1925 and 1930. The entire electrical service to the Farm Home was replaced and upgraded in 1984.

Overhead power lines occur along the north property line and along the top of the slope between Tracts 1 and 2. The existing power supply is from a pole mounted 10KVA 240/120v utility transformer on the north side of the property, with a feed down a utility pole to the pole mounted electrical meter. The electrical meter, kilowatt hour style meter #12278336, is at the base of the pole. The power feed is then routed underground into a panel located within the basement stair entry. The electric utility is Kansas City Power & Light. The service panel is a 100 amp, 240/120v, 1 phase service and the panel is a 24 circuit Cutler Hammer load center with a 100 amp 2 pole main circuit breaker disconnect. The panel schedule indicates four spare breakers. Four bussed space poles were observed at the bottom of the panel. The panel serves all equipment within the building as well as four landscape lights. One branch circuit feeds the newer maintenance shed.

An abandoned rusted electrical exterior disconnect and meter socket located at the base of a utility pole exists between Tract 1 and Tract 3.

Condition Assessment

Condition: Fair

Existing electrical infrastructure appears to be sized appropriately for the loads served, and the equipment is in fair condition with another 10 to 15 years of remaining useful life.

Exterior Lighting

Exterior lighting consists of four incandescent low efficient grade-mounted landscape lights aimed at each of the four building facades. Fixtures are controlled by an analog 24 hour timeclock located adjacent to the electrical panel. There are also three 30-foot tall cobra head style street lights along Blue Ridge Boulevard providing light along the roadway. Five light poles occur along the north side of the asphalt driveway in the south field. Tract 3 has seven exterior light poles that illuminate the parking area.

Condition Assessment

Condition: Poor

Exterior-grade, façade bullet landscape lights mounted at grade appear to be in working order, as do the street lights along Blue Ridge Boulevard. These fixtures use low efficient incandescent sources.

There is minimal site lighting, which provides a low level of safety and security for the property.

The existing photocell that controls the exterior lighting could be removed, and the lighting fixtures could be controlled with a new digital astronomical timeclock that would not require any exterior equipment for control.

In order to provide a low energy and significantly reduced maintenance solution, façade lighting to illuminate



Figure 3-42. Telephone Pedestal Location JB
12/6/11

the Farm Home could be replaced with smaller, energy efficient LED fixtures. These would provide similar illumination levels as the existing sources. Façade lighting could include optics to reduce light spill to the sky past the building.

Adding LED flagpole uplighting would allow for the flag to remain on the flagpole during non-daylight hours to comply with the United States Flag Code.

New site lighting would add security and safety for the property, particularly near the standing stone posts, Garage, tool shed, and chicken coop. Lights could be low level lights with full cutoff optics.

New lighting between Tract 3 where future visitor facilities are anticipated and the Farm Home would add security and safety. Lights could be low level lights with full cutoff optics. Any fixtures should have a similar color temperature to be within 200K correlated color temperature amongst all fixtures and sources.

Telecommunications

The Farm Home is served from an AT&T phone utility pedestal located at

the northwest corner of the property. Underground phone utility lines route along the north property line to an exterior building mounted demark enclosure where two phone lines are routed into the basement.

Telephone service occurs within Tract 3 along its South property line, connecting to the existing building.

Condition Assessment

Condition: Fair

Existing phone line and line for remote dialer are in working order. NPS standard is to locate exposed low voltage cabling in EMT conduit. The existing phone system does not currently have spare capacity for additional lines.

There is potential for additional lines and/or data connections are to be added if required.

Gas

The property is provided with natural gas from Missouri Gas Energy. A 6-inch steel gas main is located adjacent to and west of Blue Ridge Boulevard. Missouri Gas energy indicated gas is available at a pressure of approximately 30 PSI.

Water System

Public water service is available to the property from Jackson County Public Water District Number 1.

Water utility mapping obtained from the District identifies several water mains in the vicinity of the property. An 8-inch main exists under the roadside ditch on the east side of Blue Ridge Boulevard. A 6-inch fire hydrant lateral extends from the main to a fire hydrant located in the Truman Farm parking area, due south of the Farm Home. A water meter and service line extends north from this lateral toward the Farm Home. This water line is within a 20-foot wide

easement held by Jackson County. A second 8-inch main is located north of and parallel to the north property line.

The District reported static pressure of 60 PSI in the main along Blue Ridge Boulevard. It was also reported that fire hydrants in the area can provide 1,100 gallons per minute (GPM) at the minimum acceptable residual pressure.

While both domestic and fire water service appears adequate, the following recommendations should be considered.

The fire hydrant coverage for the Farm Home appear to be adequate. One fire hydrant is located in the parking area. Another is north of the property, on the adjacent land. The hydrants should be tested for adequate pressure and fire flows.

Another fire hydrant is located approximately 180 feet northwest of the building on Tract 3, on the east side of Blue Ridge Boulevard. One more hydrant exists to the south, also on the east side of Blue Ridge Boulevard. The distances to these hydrants generally meet International Fire Code (IFC) regulations. The hydrants should be tested for adequate pressure and fire flows.

Sanitary

Sanitary sewer service is available for the Truman Farm and is provided by the City of Grandview. The Farm Home is not connected to a sanitary sewer service line at this time. City sewer mapping identifies an 8-inch vitrified clay sewer main on the west side of Blue Ridge Boulevard. This main is located near the top of the system and was reported to have adequate capacity.

Sanitary sewer service to Tract 3 is assumed to connect to a similar main in Blue Ridge Boulevard, also provided by the city.



Figure 3-43. Existing culvert beneath the entrance drive at Blue Ridge Boulevard. MT 12/6/11

There have been no reports of inadequate sewer operation for the existing building on Tract 3. The City of Grandview noted there are no concerns of sanitary sewer mains within this area reaching or exceeding allowable capacity.

A sewer drain problem was observed in the basement of the Truman Farm Home. The following are recommendations for the Truman Farm Home sewer drain.

The Truman Farm does not have plumbing fixtures, so the sewer drain in the basement primarily functions as a drain for heater condensation. NPS staff reported that the drain works under most conditions. However, in some instances following prolonged or repeating rain storms and soil saturation, water infiltrates and builds up in the basement floor area. Apparently, this drain has limited capacity and may drain to a drywell. It was reported that basement flooding has occurred to a two to three-foot depth. This drain should be scoped to determine if it has a proper outfall or drains to a drywell. To reduce the chances of recurring flooding in the basement, the existing drain should be replaced with a gravity driven pipe to an appropriate discharge location. This would typically be an interior drain plumbed to a sanitary

sewer main. However, since there is no running water in the Farm Home, an outfall extending to lower adjacent grade to the south may be possible.

Storm Sewer and Drainage

The Farm Home is located at the high point of the property. From there, the site generally drains to the northwest and southeast. The 1950s roadway slopes toward the east with ditches located on the north of the drive aisle. The building on Tract 3 is also located at the high point of this tract, and the surrounding parking area slopes away from the building in a radial pattern.

A roadside ditch occurs along the western frontage of the Truman Farm and conveys runoff from the western portion of the site northerly to and along Blue Ridge Boulevard.

A culvert transmits drainage under the entrance drive. However, the pipe ends are buried due to sediment deposition and overgrown grasses at either end of the culvert.

City of Grandview storm sewer mapping shows one storm inlet on the east side of Blue Ridge Boulevard, just north of the property. Captured stormwater runoff in the roadside ditch flows through a 15-inch pipe to the west side of Blue Ridge Boulevard where it follows existing flow patterns.

No additional storm sewer pipes or structures appear within the site.

Pavements and landscaping around the building in Tract 3 have good slopes away from the building, but are generally in need of repair.

The slope of the existing grade adjacent to the Farm Home is slight, but does drain stormwater away from the building. The

Poultry House does not have positive drainage in all directions away from its perimeter. The storm culvert beneath the entrance drive is clogged and does not convey stormwater from one side of drive to the other. The following recommendations should be considered for the on-site storm drainage.

Good engineering practice generally requires the siding or skirting of a structure to be a minimum of 6-inches above the finished grade along with a ten percent slope away from the building for approximately ten 10-feet. There are several areas around the perimeter of the building where the siding or porch rim-joint skirts are within 2-inches of the adjacent ground, and should be re-graded to provide the minimum separation of 6-inches between the top of the ground and bottom of siding. Since there has been reported basement flooding, coupled with perimeter slopes being less than desired, a perimeter drain should be installed approximately 10-feet from the building. The drain should be set under a depressed swale to promote rapid drainage away from the building. This perimeter drain could be routed south toward an outfall on the south field, where the grade is substantially lower. This would be a great improvement and would potentially mitigate suspected saturated soil conditions.

The roof downspouts of the Farm Home typically have leaders that route captured drainage in a radial direction away from the building. These leaders should be extended to at least 10-feet from the building. The downspout on the north side of the Farm Home is disconnected from the gutter. It should be reconnected, and its outfall extended at least 10-feet from the Farm Home. If a perimeter drain were installed, as described above, the downspouts could be connected to the perimeter drain where the runoff could be

conveyed well away from the Farm Home by a larger gravity driven pipe.

Existing grades around the Poultry House do not shed stormwater runoff away from west side of the structure. Correcting the adverse grading should be considered but may alter the appearance of the structure base, or the immediate site. Re-grading around the structure should be explored. Another alternative would be raising the structure approximately 6-inches above adjacent grade and placing it on a new concrete foundation.

The Garage is supported on helical piers, so none of the structure is touching the ground. If this were to change, or if the structure were placed on the ground, in the same location, re-grading around the building would be necessary to provide positive drainage.

The parking area and drive aisle shed stormwater to the east toward a grassed area. This grassy area drains south over a steep hill into the south field. Higher velocity flows down this hill are eroding the hillside. If the parking area were to remain, water quality measures and erosion control would be necessary and would likely negatively impact the historic setting and topography. A small water quality pond near the east end of the drive could be considered with a small release outlet and installation of riprap armoring down the hillside to mitigate additional erosion. If this parking area was removed, these measures would not be required.

The existing drainage culvert located beneath the entrance drive, within the city Right of Way, has not been maintained and is partially buried at both ends. Since the culvert has a limited amount of cover, remediation could include replacement with a new 12-inch Class V reinforced concrete pipe.



Figure 3-44. Entrance drive at Blue Ridge Boulevard. MT 12/6/11



Figure 3-45. North drive at Tract 3. MT 12/6/11



Figure 3-46. South drive at Tract 3. MT 12/6/11



Figure 3-47. Parking area. MT 12/6/11



Figure 3-48. Parking area in Tract 3. MT 12/6/11

Re-grading the ditch to facilitate better conveyance to the north is recommended.

Geothermal System

A geothermal heat recovery system was installed c. 2008 at the property. The geothermal well field exists on the north side of the parking area and as evidenced by pavement and sidewalk cuts. There are Five 1-inch diameter geothermal wells each approximately 300-feet deep. The wells are headered together and combine into 1-1/2" mains. The supply and return lines are each 1-1/2-inch in size into and out of the Farm Home. The estimated location of the well field and pipes connecting the well field to the building is shown on the Existing Utilities Plan.

Access and Parking

Vehicular connections to Blue Ridge Boulevard on the west side of the property. The City of Grandview engineer indicated the driveway connections are located along the crest of a vertical curve. Consequently, sight distance in both directions is adequate. Full movement access is permitted at each driveway.

The city engineer indicated that long term city plans include adding a fifth lane to Blue Ridge Boulevard, although the timing and location for adding that lane is yet to be determined, and no master plan has been developed at this time, as the noted proposed roadway improvements for Blue Ridge Boulevard are still in the preliminary stages.

The city also intends to construct curb and gutter along the east side of Blue Ridge Boulevard and add inlets and eliminate the existing roadside ditch. The city will be making these improvements, exclusive from any of the development associated with the NPS property. A schedule for these improvements was not identified.

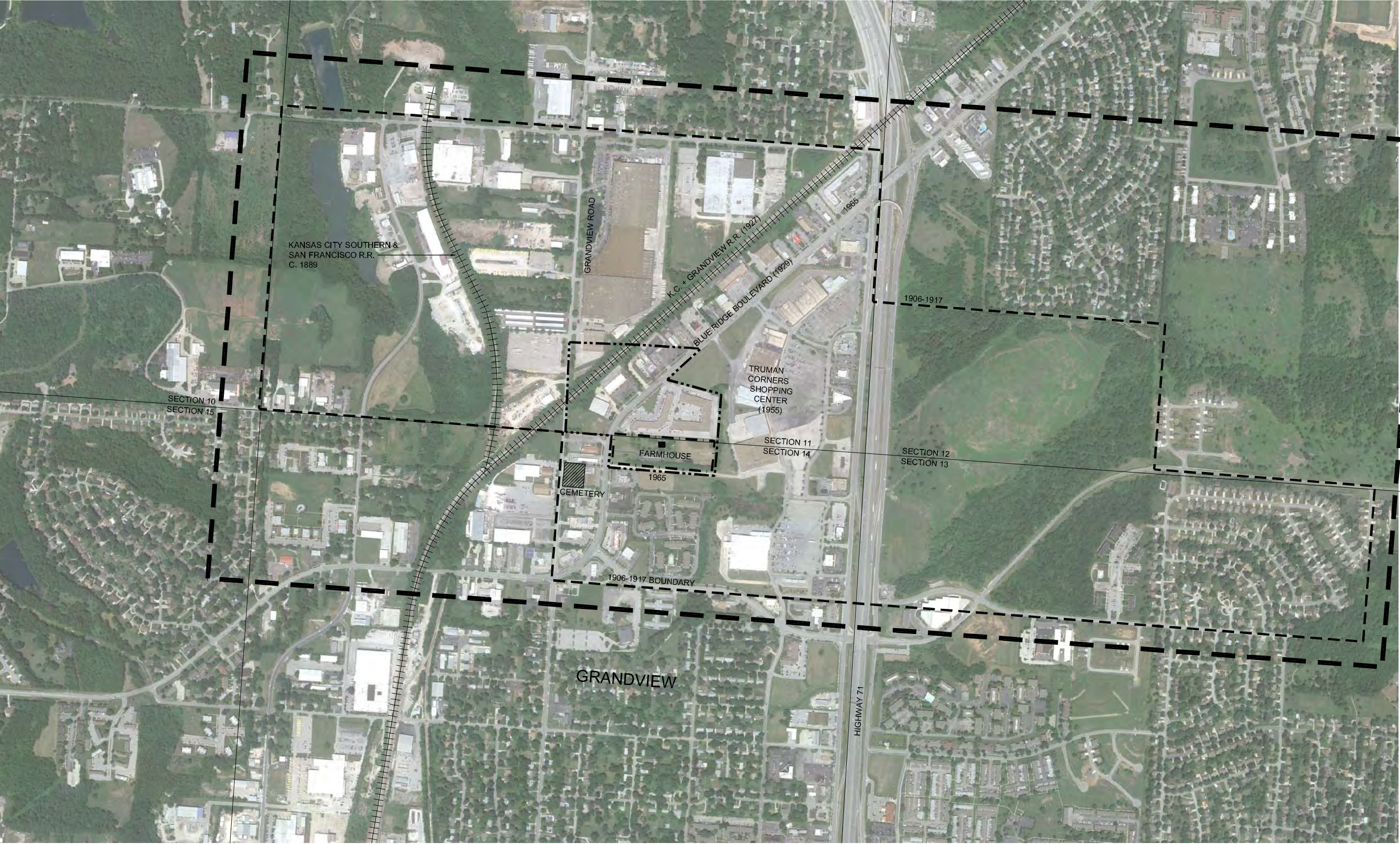
The existing entrance drive, is in poor condition and is showing signs of severe deterioration. Existing concrete sidewalks are in good to moderate condition. The 1950s roadway is also in a poor condition with multiple areas that have degraded over time, exposing the top course and sub-grade materials. Asphalt and concrete within Tract 3 is also in poor condition. Most of the parking area is displaying alligator cracking and severe spalling near the building entrance.

The existing driveways and drive aisles are in poor condition and show signs of severe wear and degradation. The following are recommendations to be considered for the remediation of the asphalt drives and concrete walks.

The entrance drive has wide cracks and alligator cracking along most areas which indicates poor sub-grade preparation. If this drive remains, the asphalt will need to be fully removed and replaced, and consultations with a geotechnical engineer will be necessary for proper reconditioning of the sub-grade along with a new asphalt design section. If this paving were to be removed, consultation with a geotechnical engineer will be needed for best practices in protecting the below-grade geothermal system.

The 1950s roadway is severely deteriorated and unacceptable for regular vehicular use. The driveway is barricaded at both ends to restrict access. If this roadway were considered for future vehicular use, full removal and replacement of the asphalt will be necessary.

If Tract 3 becomes new park facilities, the asphalt parking and concrete sidewalks should be fully replaced as they are in poor condition. The sidewalks exhibit severe spalling and deterioration.



Legend

Truman Farm Boundary (current day)

1965 Boundary (approximate)

1906 to 1917 Boundary

Study Area

Truman Farm House

Cemetery

A north arrow pointing upwards with 'N' at the top, 'S' at the bottom, 'E' on the right, and 'W' on the left. Below it is a scale bar with markings for 0, 400, and 800 feet.

DECEMBER 2012	TITLE OF PROJECT TRUMAN FARM CULTURAL LANDSCAPE REPORT		
UNITED STATES DEPARTMENT OF THE INTERIOR TRUMAN FARM NATIONAL HISTORIC SITE	TITLE OF DRAWING LANDUSE		
	NAME OF PARK TRUMAN FARM - HARRY S TRUMAN NATIONAL HISTORIC SITE		
	REGION MIDWEST	COUNTY JACKSON	STATE MISSOURI

BUILDINGS AND STRUCTURES

Overview

Three buildings and three structures exist at the Truman Farm. The three buildings date to the historic period, and the three structures are recent additions and do not contribute to the significance of the property. This section includes a brief overview of all buildings and structures located on the Truman Farm and their relationship to the property, followed by analysis of the non-extant structures.

In addition to the extant buildings and structures, several important structures existed on the Truman Farm that are no longer extant. These structures include several barns and outbuildings.

This section concludes with a detailed evaluation and analysis of the contributing buildings—Truman Farm Home, Truman Farm Garage, and Truman Poultry House.

Truman Farm Home (1895) (TF01) is the most dominant building on the property. The Farm Home is a wooden clapboard building set on a brick and limestone foundation. It is a two-story, T-shaped building. The front of the house is oriented to the west towards Blue Ridge Boulevard and Grandview Road. The south facade has two entrances, one to the kitchen and one to dining room. The entrance to the kitchen is the route visitors take to access the building.

Truman Farm Garage (c.1914) (TF02) The Garage is a single-story wood frame structure with double swinging doors, a board door on the west, and a panel door on the east. The doors orient to the west as the Garage was connected to the dirt farm drive during the period of significance. The construction of the 1980s parking area and entrance drive



Figure 3-49: Three buildings remain from the period of significance—Truman Farm Home (top), Truman Farm Garage (middle), and Truman Farm Poultry House (bottom). SS 12/6/11



Figure 3-50: Three non-contributing structures exist on the Truman Farm. The maintenance shed was added by the NPS in 1995 (top). The smokehouse was moved to the Truman Farm by the Truman Farm Home Foundation in 1985 (middle), and the outhouse was placed on the property c.1985 (bottom). SS 12/6/11

did not connect the same way, resulting in the Garage being disconnected from the circulation system.

Truman Farm Poultry House (c.1900) (TF03)

The Poultry House is a small 12' x 30' wood structure with a wood and corrugated metal shed roof. The only opening is on the west façade, which features a wooden door, two small windows and a larger opening covered with chicken wire.

The Poultry House is in the same location as it was in at the end of the period of significance. It was moved around 1940, and was originally orientated east-west with doors to the south and was placed to the north of the Farm Home. The Poultry House is important for its role in defining the historic spaces of the farm, especially the Farm Home yard.

Maintenance Shed (1995)

The maintenance shed is a new NPS structure, set immediately east of the Garage and is of a similar size. It is plywood with a gable roof, set on a brick on concrete block and limestone block foundation. A door is on the north façade with metal vents located high on the walls. The shed was built c.1995 for equipment and material storage such as mowing and maintenance. Construction of the shed was considered an adverse impact and required consultation with the Advisory Council.

The shed is in good condition. It is not a historic structure and its presence detracts from the historic setting. The shed is to be removed once storage for maintenance equipment is provided at Tract 3 or an alternate facility.

Smokehouse (TF07) (1985)

The smokehouse is a small wood frame structure with a gable roof. The siding is

vertical boards with battens on the south and east walls. Wood posts on the corners are set in concrete foundations. A door is on the west side and a small window is on the north. The smokehouse was moved to the Truman Farm by the Truman Farm Home Foundation in 1985. It is not a historic structure. Its presence detracts from the historic setting.

Privy (TF08) (1985)

The privy, or outhouse, is a very small wooden structure with a gable roof, located adjacent to and west of the Poultry House. The walls are vertical board and batten siding with a door on the south side. The privy was placed at the farm circa 1985 by the Truman Farm Home Foundation. It is not a historic feature nor is its location historically accurate.

Adjacent Buildings

Tract 3 includes a single-story building, that formerly functioned as a paint store. This property was acquired by the NPS in 2011 as recommended by the GMPA and LRIP. The building has frontage along Blue Ridge Boulevard. A circular drive and parking area surround the building. Future uses may include visitor, administration, and storage/maintenance facilities.

Non-extant Structures

Several outbuildings and structures existed on the Truman Farm during the period of significance that are no longer extant. Most were built by the Truman family and several were likely removed or demolished by the family. Others were destroyed by fire or natural disasters.

Barns

As part of a working farm, barns were necessary components. At least five barns existed on the property at various points in time during the period of significance.

Harry S Truman is credited with building at least one (perhaps two) barn(s) during his time at the farm, but it is unknown where or which barn this was.²¹

Barns associated with the Truman Farm include the Solomon Young Barn, Granary, Hay Barn (on Vivian Truman's property), Milk Barn (Vivian's), and a Small Barn. These barns are all non-extant, but archeological investigations have revealed foundations, and historic and aerial photographs illustrate where these barns were located. The exact placement of these barns is unknown without further archeological investigations that could clarify location, materials, and use.

Solomon Young Barn

This barn was built in 1867 by Harry S Truman's maternal grandfather, Solomon Young. This large barn burned in 1966 and was removed from the property.

The Solomon Young Barn was modified several times during the period of significance. Around 1920, the barn's roofline was modified by the addition of dormers on either end to serve as hay hoods.²² The barn was modified again between 1944 and 1954, at which time the entire roof changed to a broken pitch gable. The ends were extended out to encompass the sections that were previously hipped.²³

Granary

This barn was located southeast of the Solomon Young Barn and framed the southern portion of the barnyard. Archeological evidence indicates that a barn stood in this location from the time

21 Truman, *Dear Bess*, Letter April 17, 1911. Harry tells Bess that the barn has a smooth floor of 50'x72' which roughly corresponds to the internal dimensions of the Solomon Young Barn, but it is unknown where his new barn was located.

22 HST Archives, photograph 80-8

23 HST Archives, photograph 61-67-1

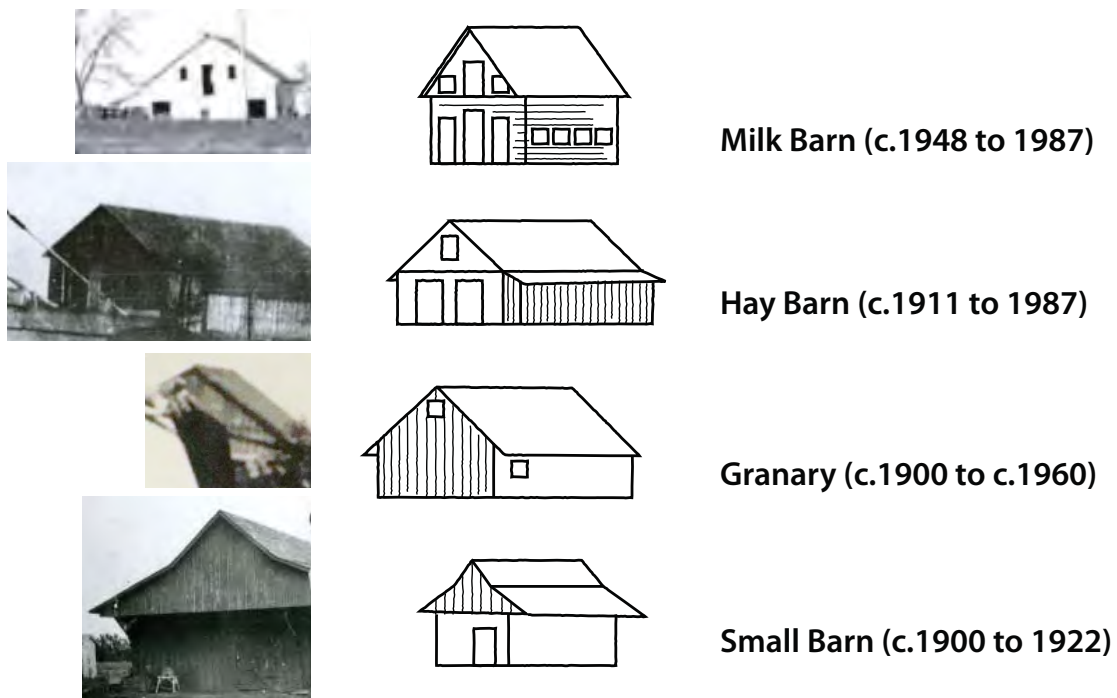
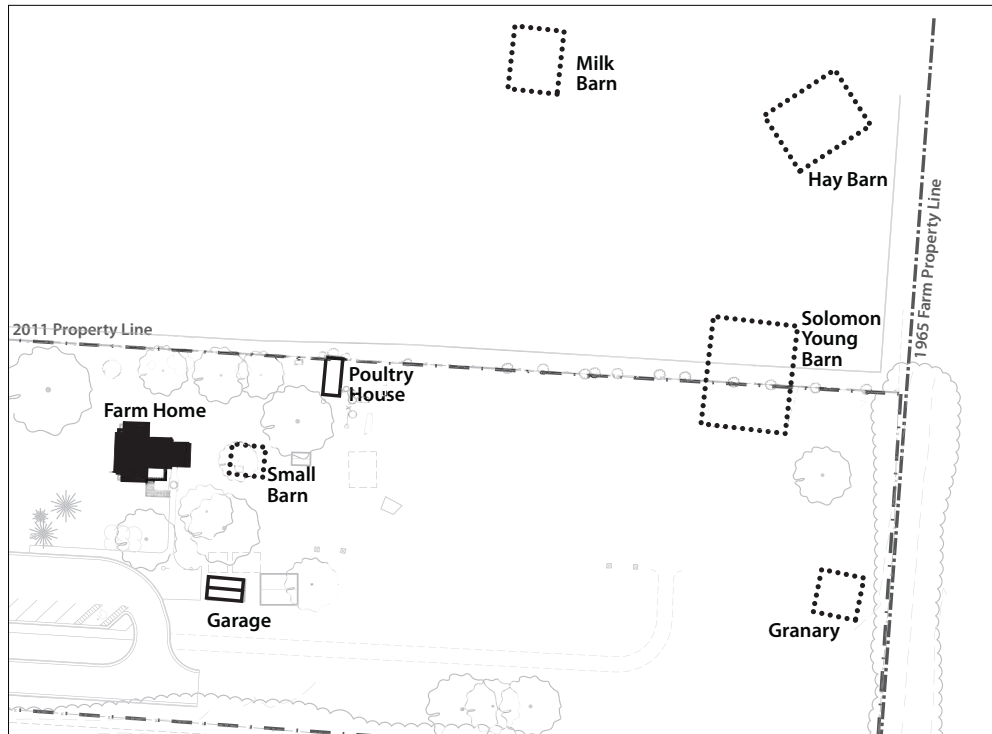


Figure 3-51: Several barns were built on the farm during the period of significance. Harry S Truman is credited with building at least one (perhaps two) of them although it is not known which one(s). Archeological evidence exists for the foundations of the barns listed above, although it is likely additional sheds, hog houses, and other outbuildings occurred across the farm landscape at various times.

the first house was built on the property by Solomon Young, in 1867. However, this could have been a different barn, as the extant granary foundation doesn't exactly match that of the granary documented in aerial photographs from the 1940s and 1950s. The granary is visible in historical photographs from the early 20th century, and was removed between 1959 and 1965.

Hay Barn

The hay barn was built c.1900 to the northeast of the Solomon Young Barn on property associated with Vivian Truman. It had a gable roof with an additional shed on the south side. Later color photographs indicate that this barn was painted red. It was removed in 1987 when the Vivian Truman farm was sold for the commercial development.

Milk Barn

This barn was built in the late 1940s by Vivian's sons, Harry A. and Gilbert, for their dairy. The barn was equipped with running water and electricity. It was painted white and had a gable roof and rows of windows. It was removed in 1987.

Small Barn

The small barn stood approximately 18 feet east of the Farm Home. It measured 17-foot square and had an east west roofline with a broken roof and soffit that extended approximately five feet from the lower cribs of the barn. Archeological evidence indicates that the extant foundation materials match that of the first 1867 house, dating the small barn to that time period. This evidence corresponds pre-1912 photographs of the farm that show a barn directly behind the Farm Home. The small barn was removed c.1922.²⁴

Outbuildings

Several outbuildings existed on the Truman Farm during the period of significance. These included a hog

shed, outhouses, icehouse/coal house, smokehouse, and likely other small buildings. The precise locations and dates of these buildings are unknown.

Icehouse/Coalhouse and Smokehouse

Truman family documentation indicated that an icehouse/coalhouse and a smokehouse stood just north of the Garage, within the Farm Home yard.²⁵ It is unknown when these two buildings were built, but they appear in photographs from c.1914, and are no longer evident in photographs c.1940.²⁶ Archeological investigations did not find evidence of either structure.

²⁴ Interview with Martha Ann Swoyer, HSTR Interview #1991-5, 63.

²⁵ HST Letter to E. Neild; Interview with Martha Ann Swoyer, HSTR Interview #1991-5, 63.

²⁶ HST Archives photograph 84-27



Figure 3-52: Mary Jane Truman with horse Bill (at far right). The granary is just behind the women in the carriage, and the Solomon Young Barn with modified dormers, is to the left. Another outbuilding is at the far left (perhaps the icehouse/coalhouse) HSTL 80-8, c.late 1910s



Figure 3-53: The barns were located east of the Farm Home; the Solomon Young Barn and the Granary framed the barnyard and were connected to the other barns by a network of dirt paths. Today, none of the barns are extant. HSTL Aerial pre-Truman Corners, c.1950



1867 to c.1920



c.1920 to 1944/1954



1944/1954 to 1966

Figure 3-54: The Solomon Young Barn was built by Solomon Young in 1867 and altered at least twice before burning in 1966 after which it was removed. HSTL 84-12-4, c.1900; HSTL 62-385, c.1940; Bill Curtis c.1960

BUILDINGS EXISTING CONDITIONS & CONDITION ASSESSMENTS

The following commences the HSR for the Harry S Truman Farm. The disciplines of Architecture, Structural, Mechanical (HVAC and plumbing), Electrical and Environmental Engineering are addressed individually. The property's contributing and extant buildings include:

- Farm Home
- Garage
- Poultry House

Original construction of each building is discussed, followed by its specific history/chronology of alterations as determined by studying historic photos, historic drawings, examining park records and archives and on site investigations and observations by the Study Team.

Existing Conditions

The Existing Conditions section describes the current conditions, by discipline and by component, as observed on site during the December 2011 site visit.

Condition Assessment

Following the Existing Conditions section, each feature/system was evaluated and an attendant condition rating determined. A general building condition assessment is presented first, followed by the condition assessment and ratings of each feature or component. The condition rating system is as follows. (Note: These terms are also applied to the overall structure/building.)

Good - The feature is intact, structurally sound and performing its intended purpose. The feature needs no repair or rehabilitation, but only routine or preventive maintenance.

Fair - The feature is in fair condition if either of the following conditions is

present:

- There are early signs of wear, failure or deterioration though the feature is generally structurally sound and performing its intended purpose – or –
- There is failure of a portion of the feature.

Poor - The feature is in poor condition if any of the following conditions is present:

- The feature is no longer performing its intended purpose – or –
- Significant elements of the feature are missing – or –
- Deterioration or damage affects more than 25% of the feature – or –
- The feature shows signs of imminent failure or breakdown.

Unknown - Not enough information is available to make an evaluation.

FARM HOME

Chronology of Alterations and Use

Original Construction

The Farm Home was originally built between the end of 1894 and mid-1895, after Solomon Young's original farm house was destroyed by fire in October of 1894. Harriet, Solomon's widow, and Harrison Young, their son, designed and built the Farm Home. The Farm Home appears to have been completed in three stages: the central section of the east wing portion was built first (constructed above a full basement of fieldstone set in primarily clay mortar – probably the root cellar of Solomon Young's original house) and then the front (west) two-story portion with the sitting room, parlor and two bedrooms (on brick foundation). The original one-story kitchen rested on brick piers and was most likely built last.²⁷

Significant Alterations/Current Condition

Significant alterations to the Farm Home involved a porch addition at the southeast corner of the house (post-1912), a two-story addition that was built onto the east wing of the house replacing the earlier one-story kitchen (c.1940) and the installation of a bathroom off of the downstairs hall (1949).²⁸

During the period between 1956 and 1982, the Williams family rented the Farm Home and made the following alterations:

- Replaced the old stone columns that supported the kitchen with a concrete foundation
- Screened in the southeast porch
- Installed a concrete patio in front of the south porches
- Installed a concrete floor for the west (front) porch

- Shingled the roof with composition shingles
- Added a sloped shed roof over the south porch, covering the lower half of the south facing second story windows (between 1972 and 1983)

In late 1983, after the property was sold to Jackson County, the Harry S Truman Farm Foundation began an extensive restoration project on the building to a c. 1912 appearance (see Appendix H). Work completed included:

- Removal of the major alterations on the east that occurred between 1912 and 1983
- Reconstruction of the one-story Kitchen and south porch
- Rehabilitation of the front porch floor framing
- Reconstruction of the south dining room porch
- Replacement of the exterior wood siding in-kind
- Replacement of the composite shingle roofing with new wood shingles
- Rebuilt chimneys by removing original bricks then reconstructing with the salvaged bricks
- Addition of gutters and downspouts at the front porch and east additions
- Rebuilt the integral gutter at the second-story hipped roof
- Rehabilitation of the interior including repair and replacement of damaged finishes
- Installation of new electrical and mechanical systems
- Removal of the bathroom in the Hallway
- Extensive replacement of the interior and exterior millwork
- New wallpaper

²⁷ Evans-Hatch, 2001, 17.

²⁸ A 1944 aerial photo shows additions to the east of the house.

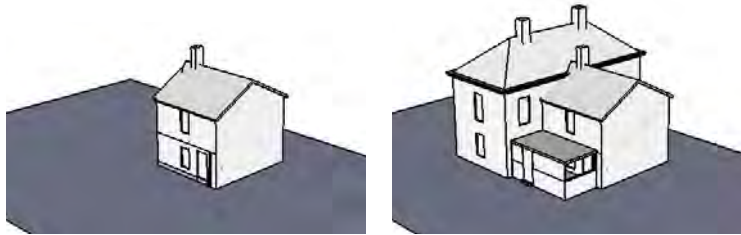
Summary of Documented Work on the Building

Date	Work Described (Source Reference)
1867-1894	Solomon Young wood frame farmhouse built on site (1867). Destroyed by fire in October 1894. (Evans-Hatch, 2001 and Piland, 1977)
1894-1895	Harriet (Solomon's widow) and Harrison Young, their son, build the current Farm Home. There are three phases to the construction: the central wing built over the remaining fieldstone basement from Solomon Young's farmhouse was built first, then the west wing portion (two-story) built on a brick foundation and then the one-story kitchen wing to the east on brick piers. (Evans-Hatch, 2001)
1906-1917	Harry S Truman (HST) lives and works on the farm. (Multiple sources)
1912, May	HST paints pump handle white. (Ferrell, 1983)
Post-1912	On or after 1912, an addition was added onto the porch at the southeast corner of the house. (HSTR photographs on record)
1916	HST states Farm Home in a state of structural decline – badly in need of repairs. (Ferrell, 1983)
c.1929	Electricity brought to Farm. (Harry S Truman Library and Museum, document granting right-of-way to Kansas City Power and Light Co., 1929)
1934-1953	The house is painted entirely white without the green trim seen in earlier images (HSTR photographs on record).
1930-1940	Two-story addition is built onto east wing of the house, replacing the earlier one-story kitchen. (Harry S Truman Library and Museum, photographs on record and statements from Harry and Gilbert Truman)
1940, July	Farm foreclosed upon; Martha and Mary Jane Truman forced to move. (Piland, 1977)
1945-1946	Portions of farm re-purchased by Vivian Truman, HST's brother. (Farm Home and 87 acres) (Piland, 1977) Feb. 24, 1945: Charles F. Curry, E. Kemper Carter and Tom Evans (friends of HST's from Kansas City) purchased the remaining 200 acres from Jackson County for \$43,500. They then sold the property back to Harry S Truman for \$23,000. (NPS NHL, 1985)

1949	City water brought to the Farm Home. Indoor bathroom installed off of the downstairs hall. (Evans-Hatch, 2001)
1956-1982	Williams family rents and occupies the Farm Home. They replaced the old stone columns that supported the kitchen with a concrete foundation, screened in the south (back) porch, installed a concrete patio off the kitchen door, installed a concrete floor for the west (front) porch and re-shingled the roof. (Evans-Hatch, 2001)
1957	Tornado hits farm – house suffers roof and exterior damaged that is repaired by the Williams. (HSTR records from Harry S Truman Farm Foundation)
1965	HST deeds the remaining Farm property to his nephews Gilbert and Harry. (Harry S Truman Library and Museum, legal record on file)
1974-1983	Slope of the shed roof over the south porch is increased, covering the lower half of the south facing second story windows in Harry's Room. (HSTR photographs on record)
1978	Harry S Truman Farm is listed in the National Register of Historic Places (Piland, 1977)
1983	The Truman family sells the remaining farm property to Jackson County, MO (Harry S Truman Library and Museum, legal record on file)
1983-1984	Restoration of the Farm Home by the Harry S Truman Farm Foundation, led by master carpenter George Fogelsong, is begun in late 1983. The work is completed by mid-1984. (See Significant Alterations above for list of work accomplished.) (Fogelsong, 1984 and Hoffman drawings, 1983)
1984	Original wood shingle roof and three layers of composition shingles removed. (Evans-Hatch, 2001)
1985	The Truman Farm became a National Historic Landmark. (NPS NHL, 1985)
1993, Dec	Public Law 103-184, Act of Congress, added Truman Farm to the Harry S Truman National Historic Site. (NPS GMP, 1999)
1994, April	Jackson County, Missouri conveyed the Truman Farm deed to the federal government and the NPS assumed ownership of the property. (HSTR maintenance records)

1994-2009	The Farm Home was re-roofed with wood shingles and painted and gutters were added. Floor framing and decking was replaced on the west (front) porch and the south porches. Spindles and brackets were replaced at the west porch. (HSTR maintenance records)
1996	Construction of the wooden wheelchair entrance ramp connecting the walkway to the western entrance on the south side of the Farm Home. (HSTR maintenance records)
c. 2002	Replaced west porch columns with redwood in-kind replicas; kitchen porch 107 re-built. (HSTR maintenance records)
2005	Farm Home repairs include window restoration and in-kind window replacement, replacement of deteriorated siding, replacement of chimney caps, tuck-pointing the foundation, in-kind replacement of most porch decorative posts and installation of a fire and alarm system. (HSTR maintenance records)
2007	Farm Home was upgraded with a geothermal heating/cooling system. (HSTR maintenance records)
2010	The heat pump equipment destroyed by a backed-up floor drain; replaced. The exterior of the house is repainted and minor repairs made to wood surfaces. (HSTR maintenance records)

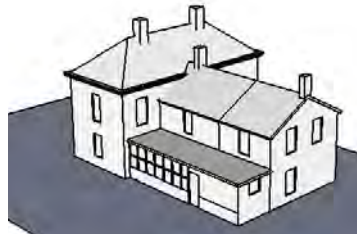
Farm Home Sequence of Alterations



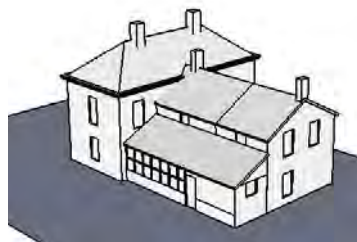
c.1894-1895



by 1912



by 1935

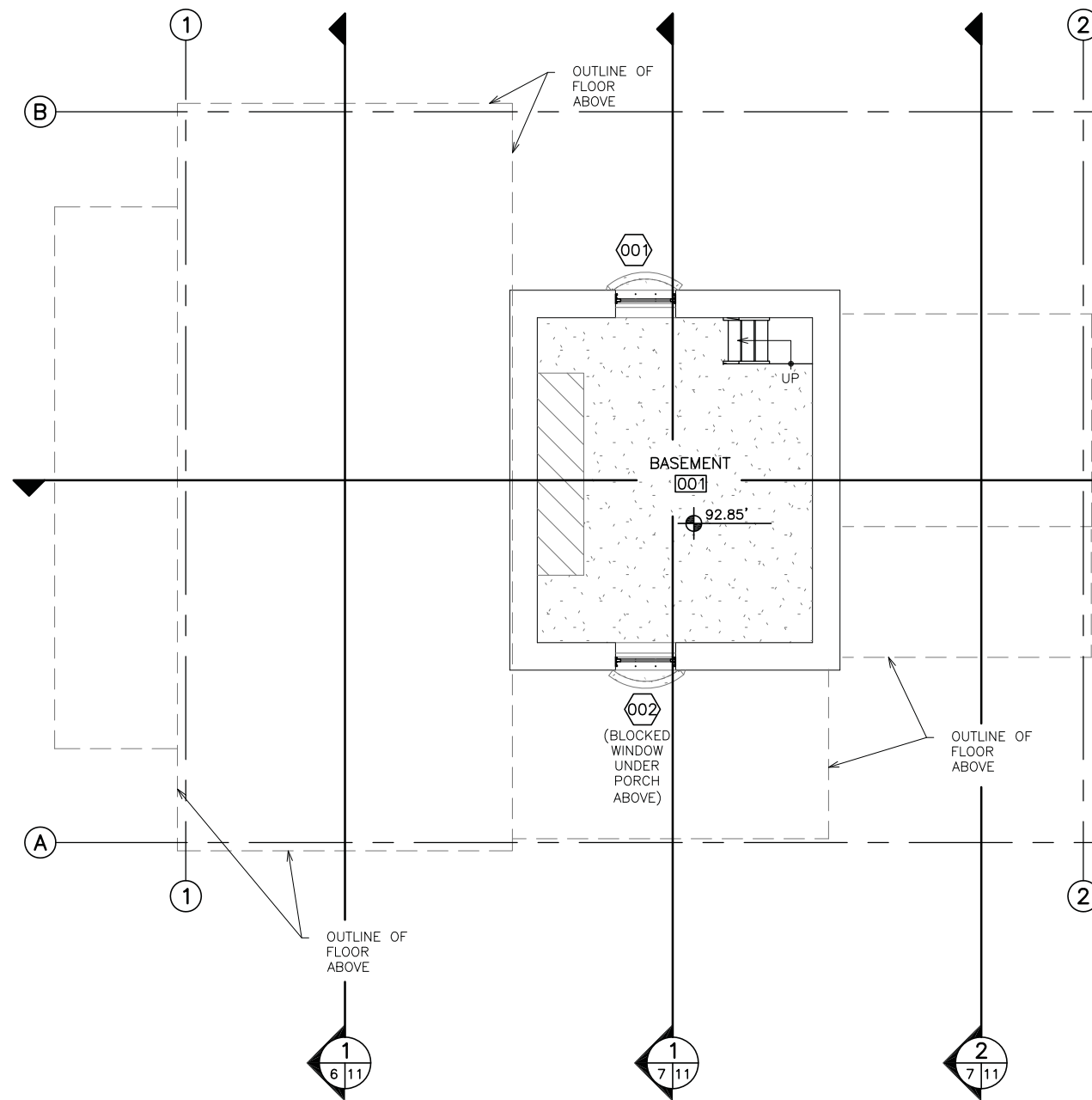


c.1974-1983

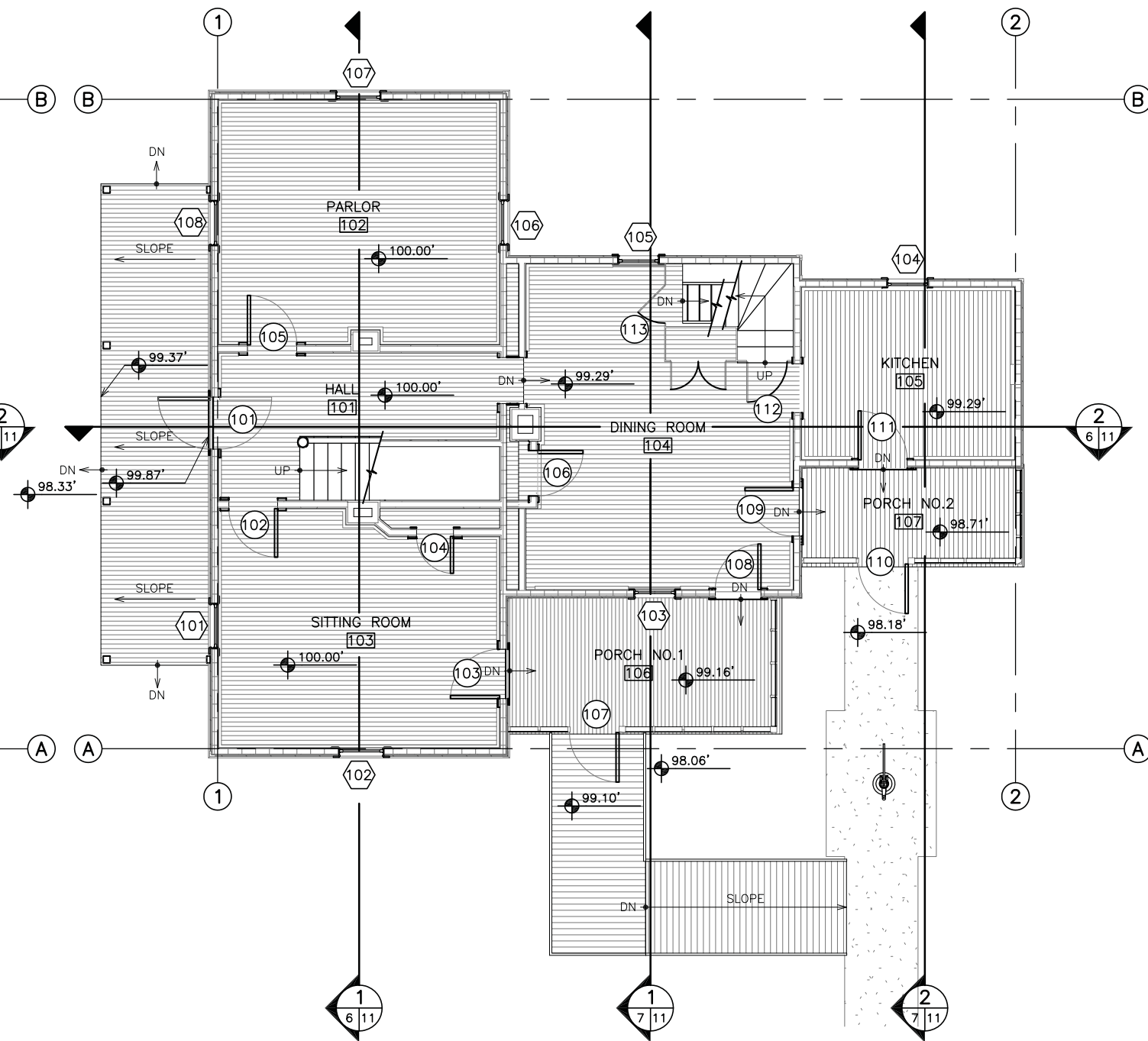


c.1984 - Current

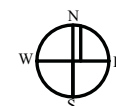
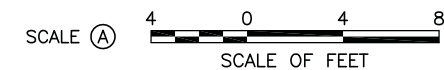
11/30/12 14:17 ADRIENNEANTONUCCI R18 N:\AA PROJECTS\2011\2011400 TRUMAN FARM HSR\BIM\ACAD\ARCH\02 OF 11_FARM - BASE & 1ST FLR\DWG XREFS: \BASE\AA-GARAGESKETCH.DWG; \BASE\AA-FARM - ELEVATIONS.DWG; \BASE\AA-FARM - FLOOR PLANS.DWG;



1 FARM HOME - BASEMENT PLAN
2 11 SCALE (A)

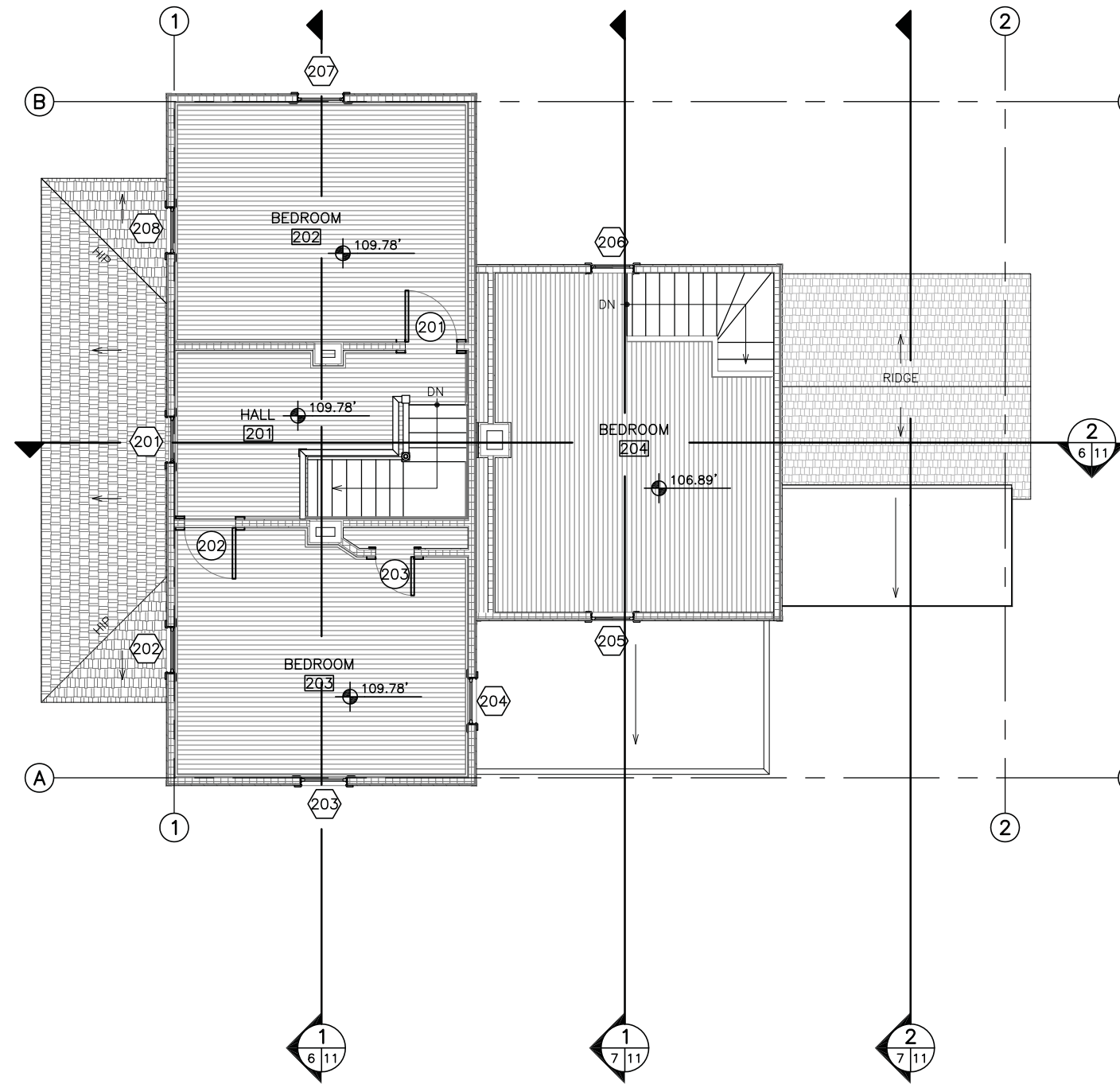


2 FARM HOME - 1ST FLOOR
2 11 SCALE (A)

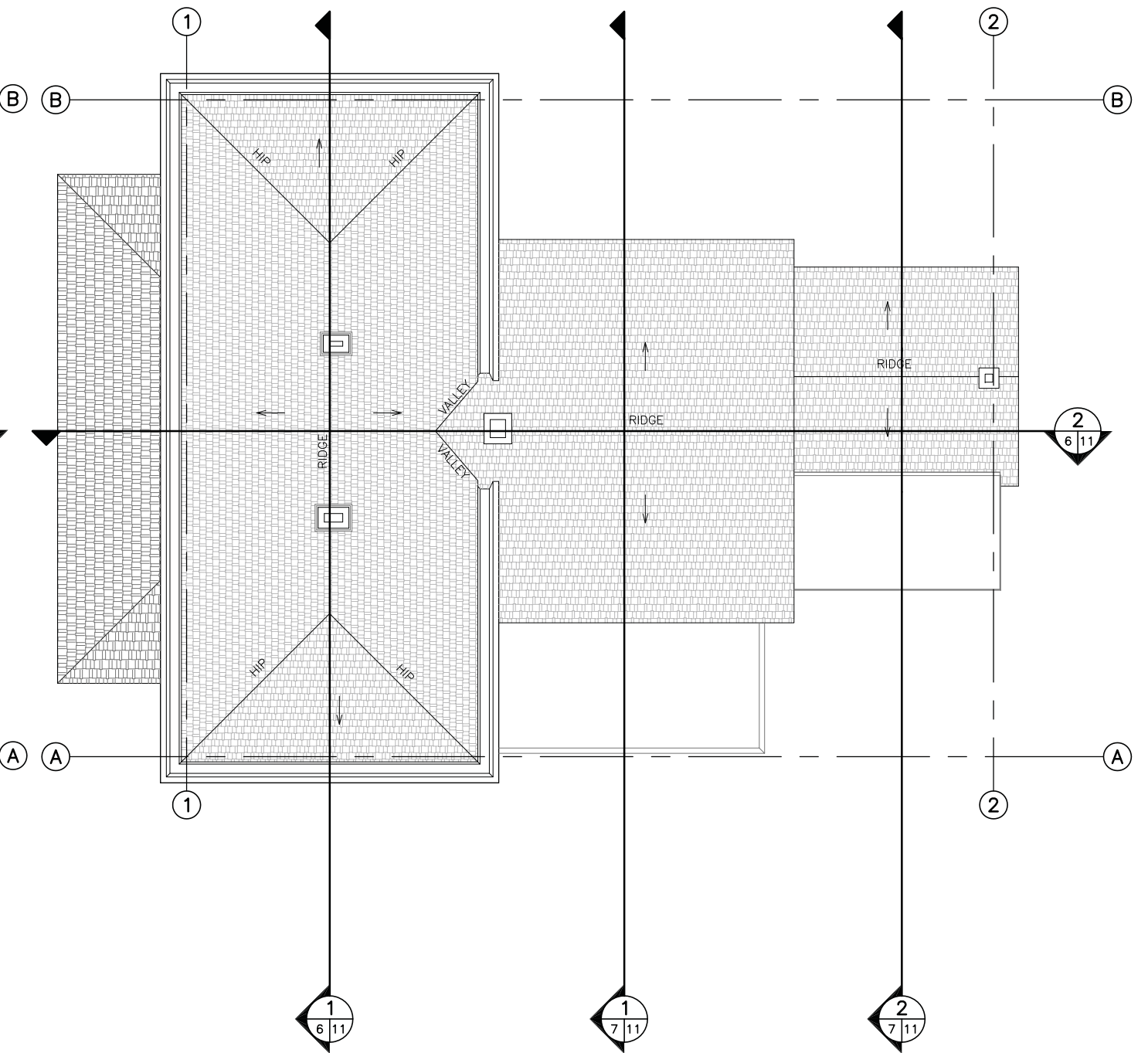


NOVEMBER 2012		TITLE OF PROJECT TRUMAN FARM HISTORIC STRUCTURES REPORT	
UNITED STATES DEPARTMENT OF THE INTERIOR TRUMAN FARM NATIONAL HISTORIC SITE		TITLE OF DRAWING FARM HOME BASEMENT & 1ST FLOOR PLAN	
EXISTING CONDITION DRAWINGS SHEET 2 OF 11		NAME OF PARK TRUMAN FARM - HARRY S TRUMAN NATIONAL HISTORIC SITE	
		REGION MIDWEST	STATE MISSOURI

11/30/12 14:16 ADRIENNEANTONUCCI R18 N:\VA PROJECTS\2011\2011400 TRUMAN FARM HSR\BIM\ACAD\ARCH\03 OF 11_FARM - 2ND & ROOF_REV\DWG XREFS: \BASE\VA-FARM - ELEVATIONS.DWG; \BASE\VA-FARM - FLOOR PLANS.DWG; \BASE\VA-GARAGESKETCH.DWG; \BASE\VA-FARM -

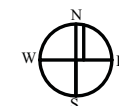


1 FARM HOME - 2nd FLOOR PLAN
3 11 SCALE (A)



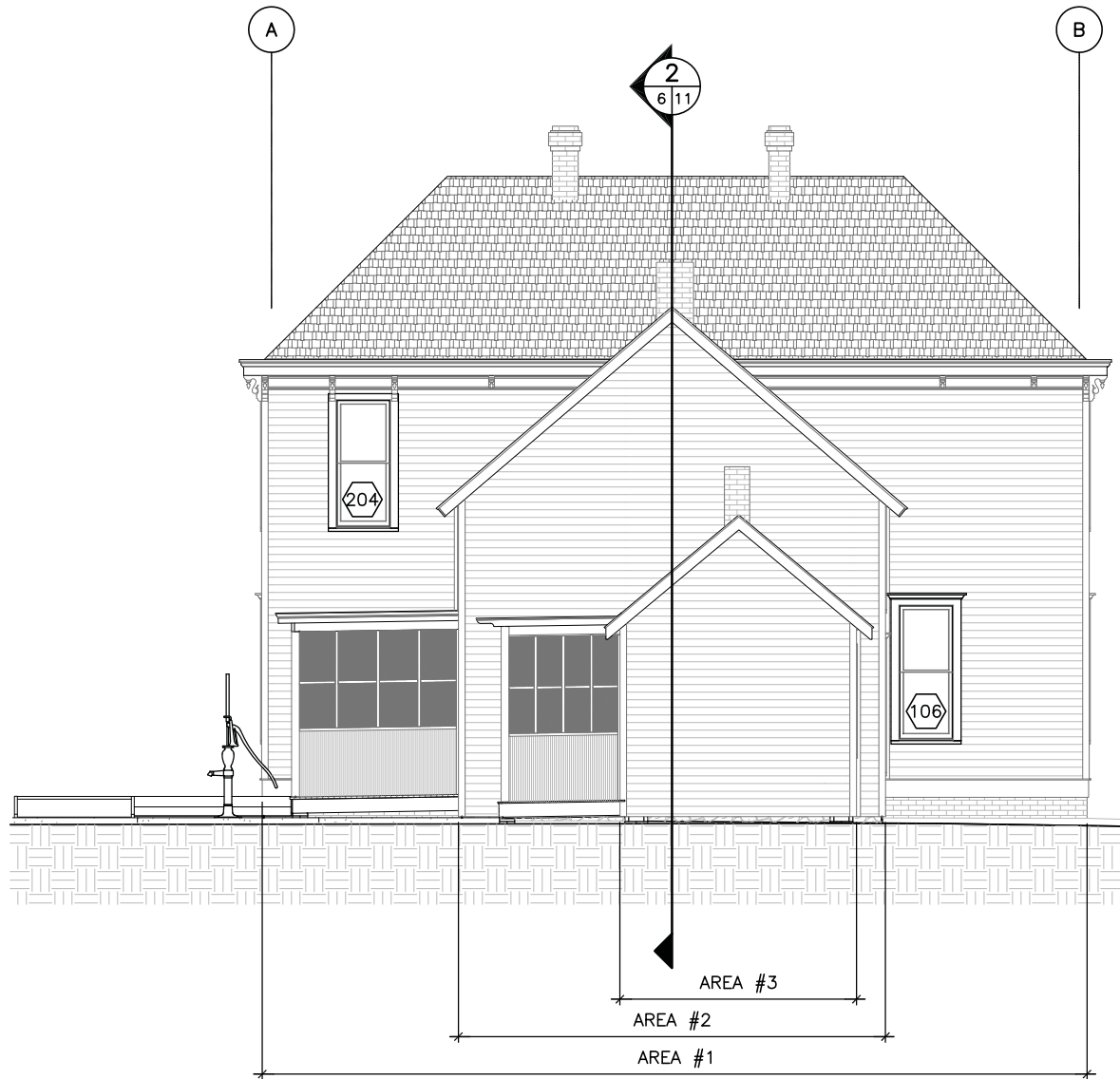
2 FARM HOME - ROOF PLAN
3 11 SCALE (A)

SCALE (A) 4 0 4 8
SCALE OF FEET



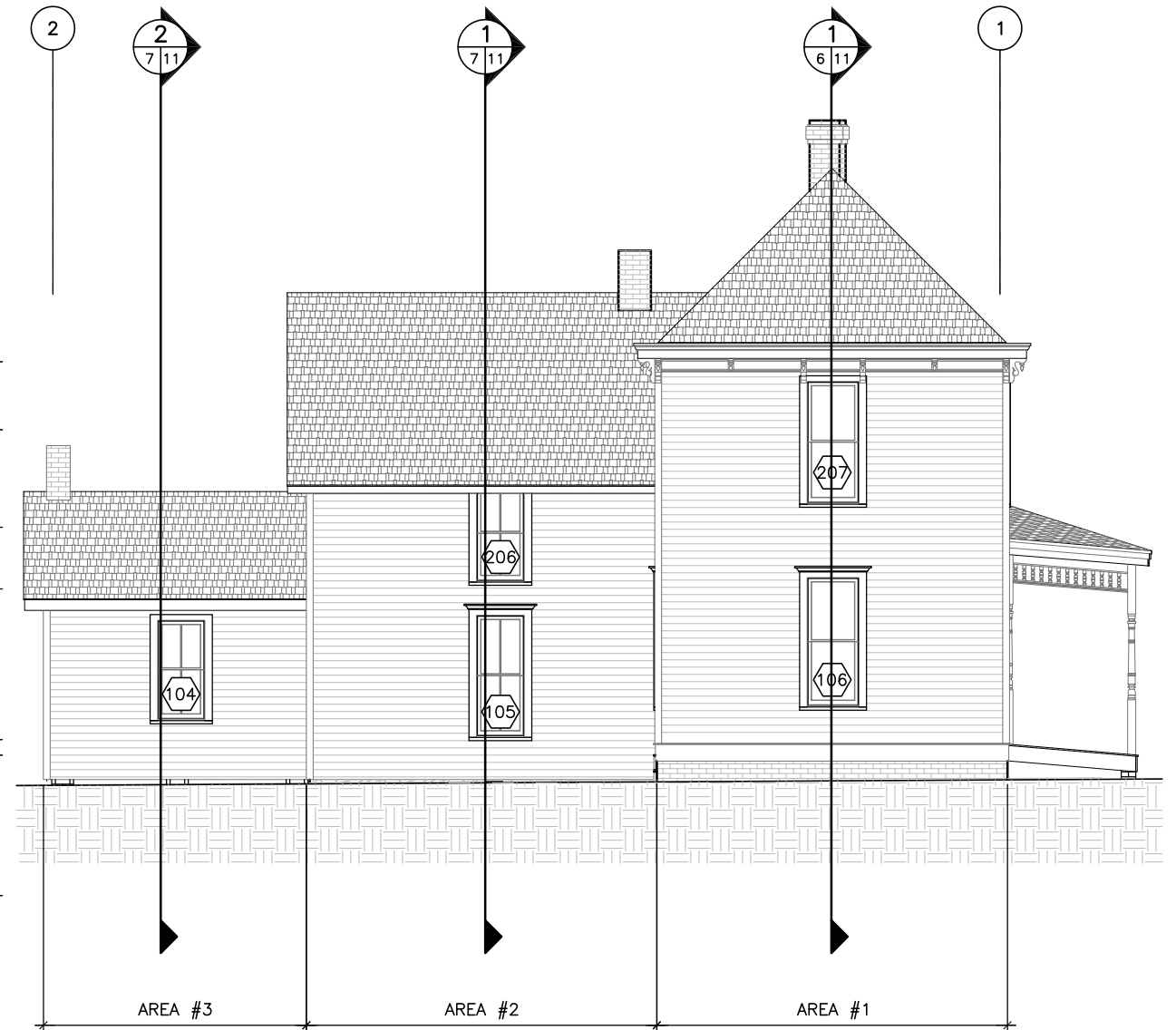
NOVEMBER 2012		TITLE OF PROJECT TRUMAN FARM HISTORIC STRUCTURES REPORT	
UNITED STATES DEPARTMENT OF THE INTERIOR TRUMAN FARM NATIONAL HISTORIC SITE		TITLE OF DRAWING FARM HOME 2ND FLOOR & ROOF PLAN	
EXISTING CONDITION DRAWINGS SHEET 3 OF 11		NAME OF PARK TRUMAN FARM - HARRY S TRUMAN NATIONAL HISTORIC SITE	
		REGION MIDWEST	STATE MISSOURI

11/30/12 14:17 ADRIENNEANTONUCI R18 N:\AA PROJECTS\2011\2011400 TRUMAN FARM HSR\BIM\ACAD\ARCH\04 OF 11_FARM NORTH & EAST ELEVATIONS_REV.DWG XREFS: ..\BASE\VA-CARAGESKETCH.DWG; ..\BASE\AX-FARM - ELEVATIONS.DWG;



1 FARM HOME — EAST ELEVATION
4 11 SCALE (A)

- 2nd Floor CLG
Area #1
Elev. 118'-0"
- 2nd Floor CLG
Area #2
Elev. 114'-11 3/8"
- 2nd Floor
Area #1
Elev. 110'-5 5/8"
- 2nd Floor
Area #2
Elev. 107'-7 5/8"
- 1st Floor
Area #1
Elev. 100'-8 1/2"
- 1st Floor
Area #2 & #3
Elev. 100'-0"
- Basement Floor
Area #2
Elev. 93'-6 1/2"

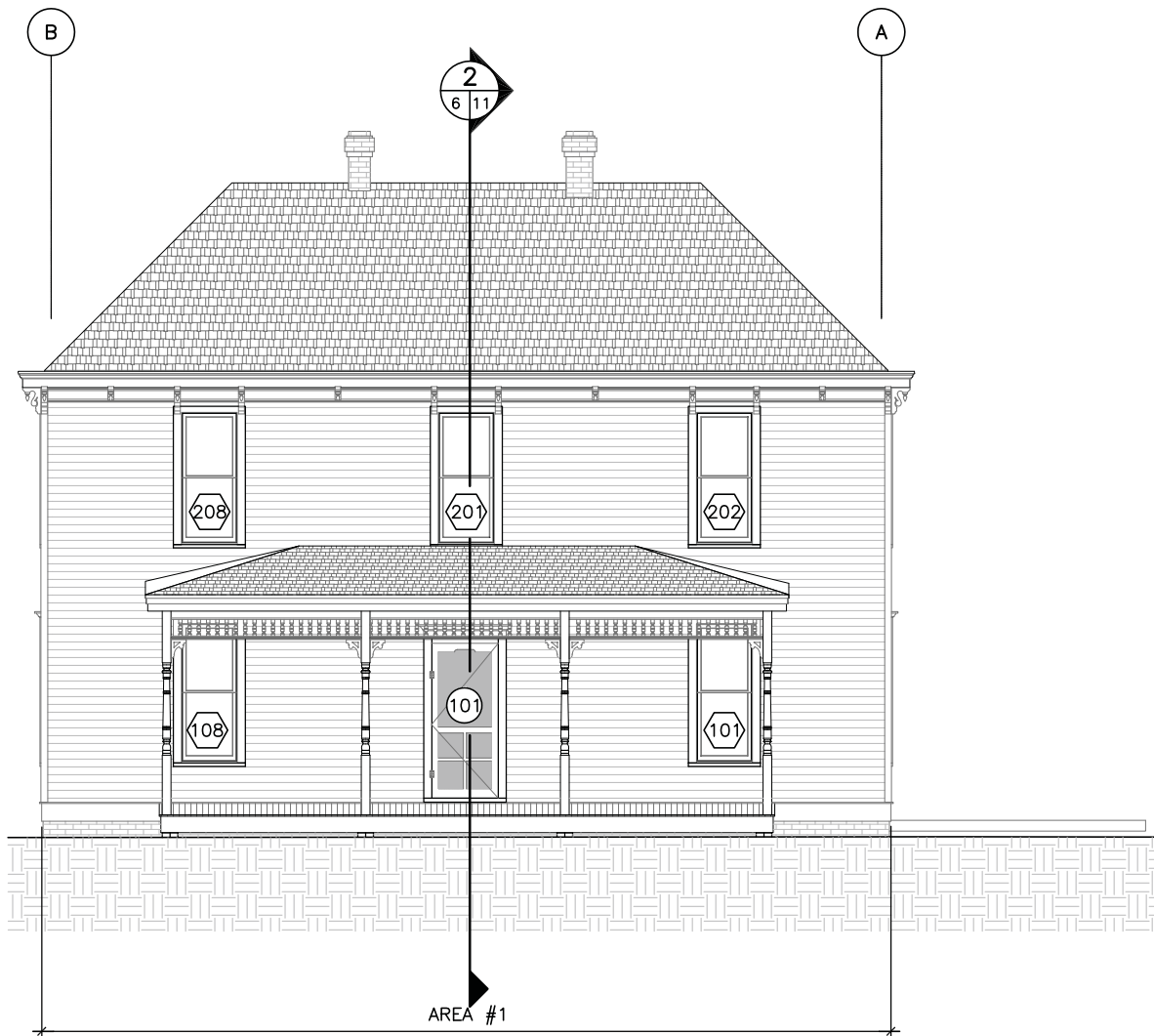


2 FARM HOME — NORTH ELEVATION
4 11 SCALE (A)

SCALE (A) 4 0 4 8
SCALE OF FEET

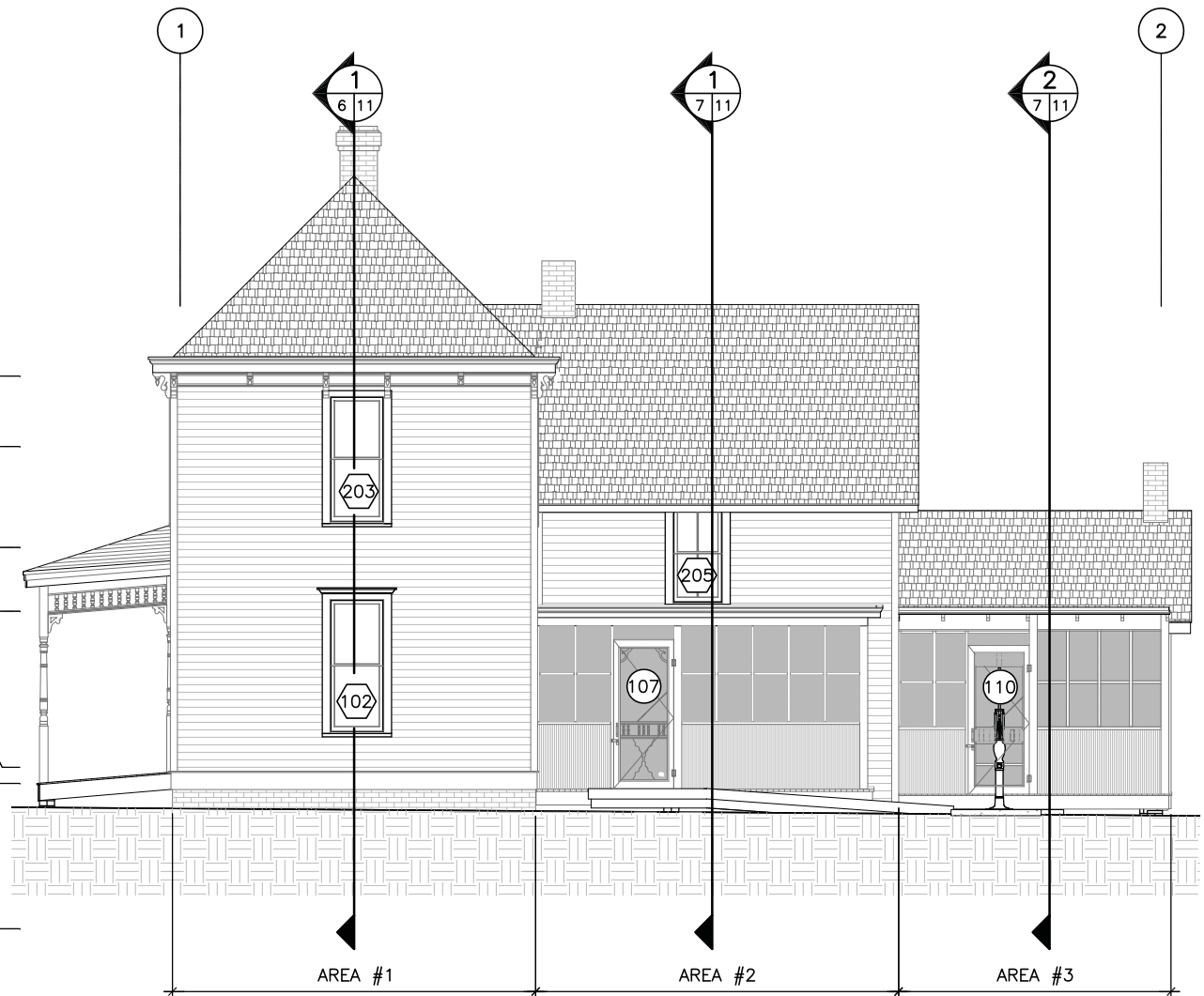
NOVEMBER 2012	TITLE OF PROJECT TRUMAN FARM HISTORIC STRUCTURES REPORT
UNITED STATES DEPARTMENT OF THE INTERIOR TRUMAN FARM NATIONAL HISTORIC SITE	TITLE OF DRAWING FARM HOME NORTH & EAST ELEVATIONS
EXISTING CONDITION DRAWINGS SHEET 4 OF 11	NAME OF PARK TRUMAN FARM - HARRY S TRUMAN NATIONAL HISTORIC SITE
	REGION MIDWEST
	COUNTY JACKSON
	STATE MISSOURI

11/30/12 14:18 ADRIENANTONUCCI R18 N:\A PROJECTS\2011\2011400 TRUMAN FARM HSR\BIM\A04\ARCH\05 OF 11_FARM WEST & SOUTH ELEVATION_REVDWG XREFS: ..\BASE\A-FARM - ELEVATIONS.DWG; ..\BASE\A-GARAGES\KETCH.DWG; ..\BASE\A-FARM - ELEVATIONS.DWG;



1 FARM HOME - WEST ELEVATION
5 11 SCALE (A)

- 2nd Floor CLG
Area #1
Elev. 118'-0"
- 2nd Floor CLG
Area #2
Elev. 114'-11 3/8"
- 2nd Floor
Area #1
Elev. 110'-5 5/8"
- 2nd Floor
Area #2
Elev. 107'-7 5/8"
- 1st Floor
Area #1
Elev. 100'-8 1/2"
- 1st Floor
Area #2 & #3
Elev. 100'-0"
- Basement Floor
Area #2
Elev. 93'-6 1/2"

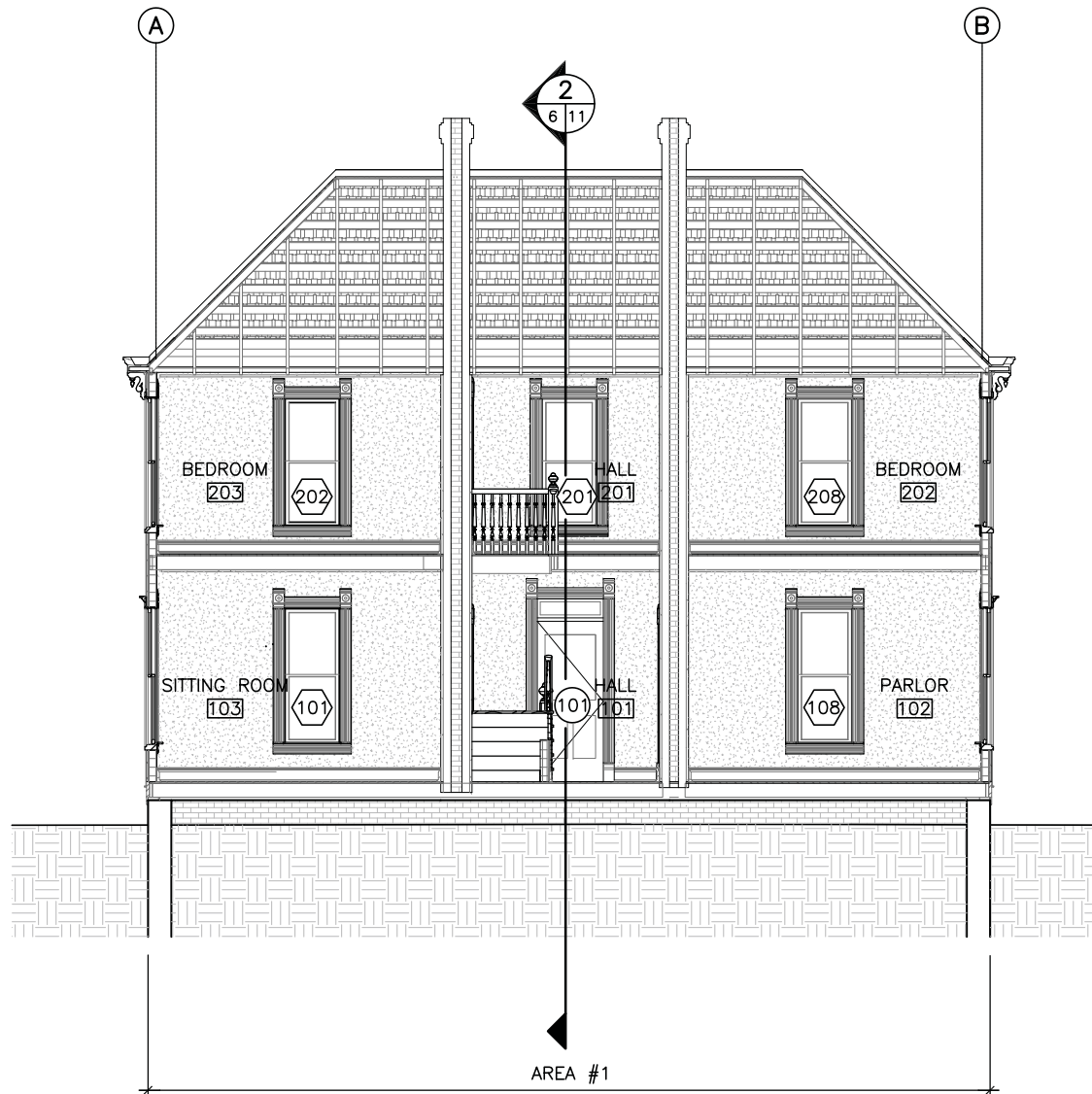


2 FARM HOME - SOUTH ELEVATION
5 11 SCALE (A)

SCALE (A) 4 0 4 8
SCALE OF FEET

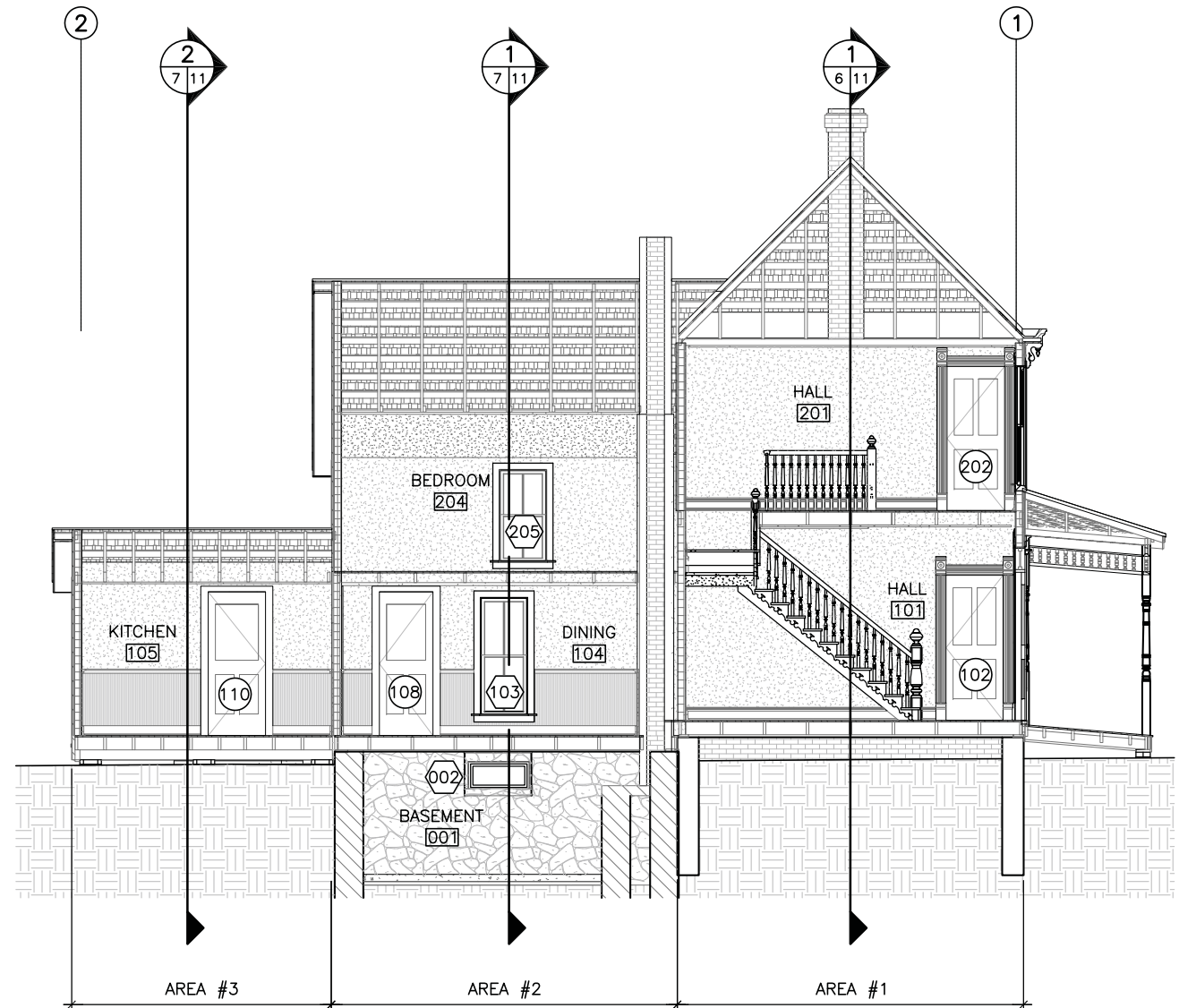
NOVEMBER 2012	TITLE OF PROJECT TRUMAN FARM HISTORIC STRUCTURES REPORT
UNITED STATES DEPARTMENT OF THE INTERIOR TRUMAN FARM NATIONAL HISTORIC SITE	TITLE OF DRAWING FARM HOME WEST & SOUTH ELEVATIONS
EXISTING CONDITION DRAWINGS SHEET 5 OF 11	NAME OF PARK TRUMAN FARM - HARRY S TRUMAN NATIONAL HISTORIC SITE
	REGION MIDWEST
	COUNTY JACKSON
	STATE MISSOURI

11/20/12 14:19 ADRIENANTONUCCI R18 N:\VA PROJECTS\2011\2011400 TRUMAN FARM HSR\BIM\ACAD\ARCH\06 OF 11_FARM SECTIONS 1_REV.DWG XREFS: ..\BASE\VA-GARAGES\KETCH.DWG; ..\BASE\VA-FARM - SECTIONS.DWG;



- 2nd Floor CLG
Area #1
Elev. 118'-0"
- 2nd Floor CLG
Area #2
Elev. 114'-11 3/8"
- 2nd Floor
Area #1
Elev. 110'-5 5/8"
- 2nd Floor
Area #2
Elev. 107'-7 5/8"
- 1st Floor
Area #1
Elev. 100'-8 1/2"
- 1st Floor
Area #2 & #3
Elev. 100'-0"
- Basement Floor
Area #2
Elev. 93'-6 1/2"

1 FARM HOME - BUILDING SECTION AREA #1
6 11 SCALE (A)

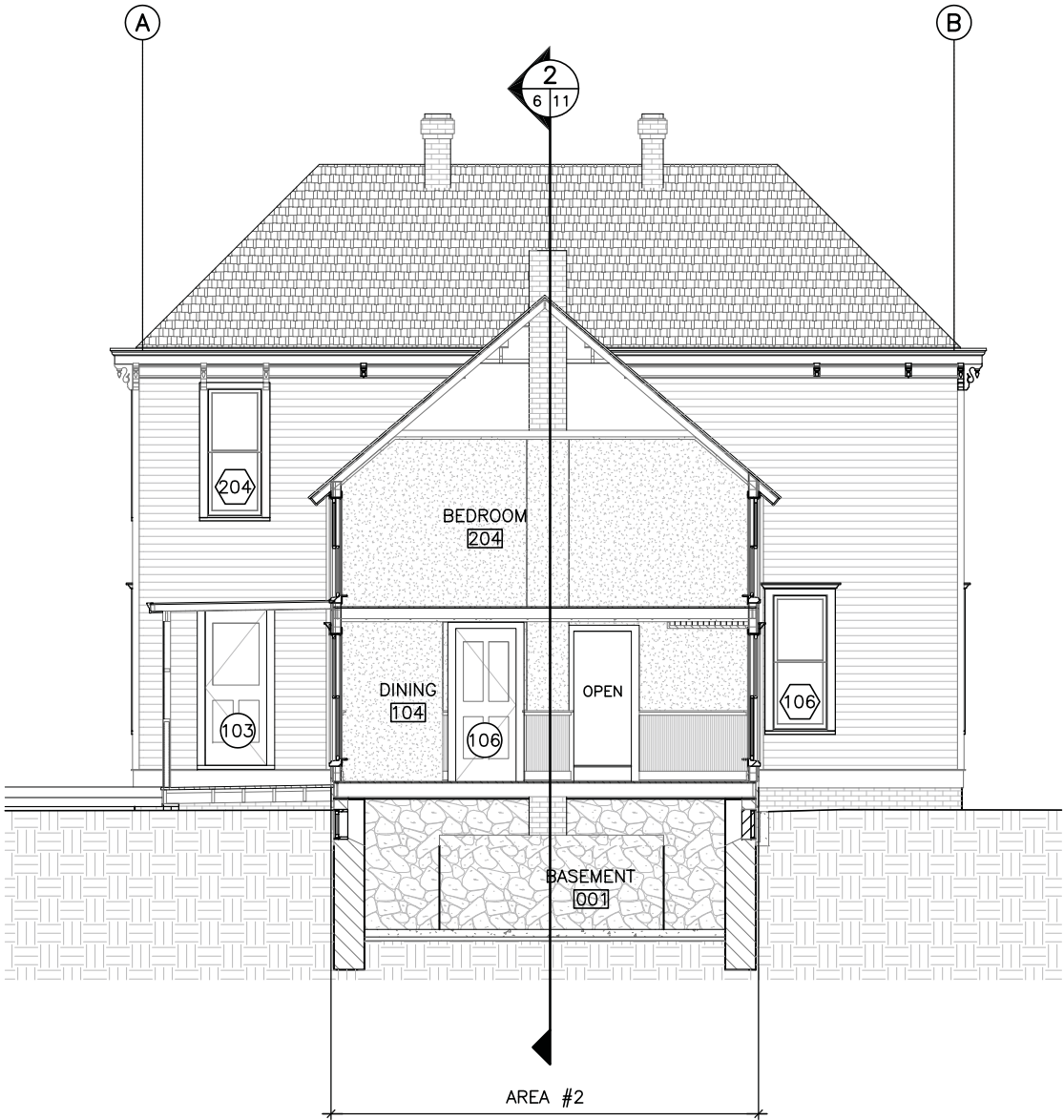


2 FARM HOME - BUILDING SECTION AREA #1, #2, AND #3
6 11 SCALE (A)

SCALE (A) 4 0 4 8
SCALE OF FEET

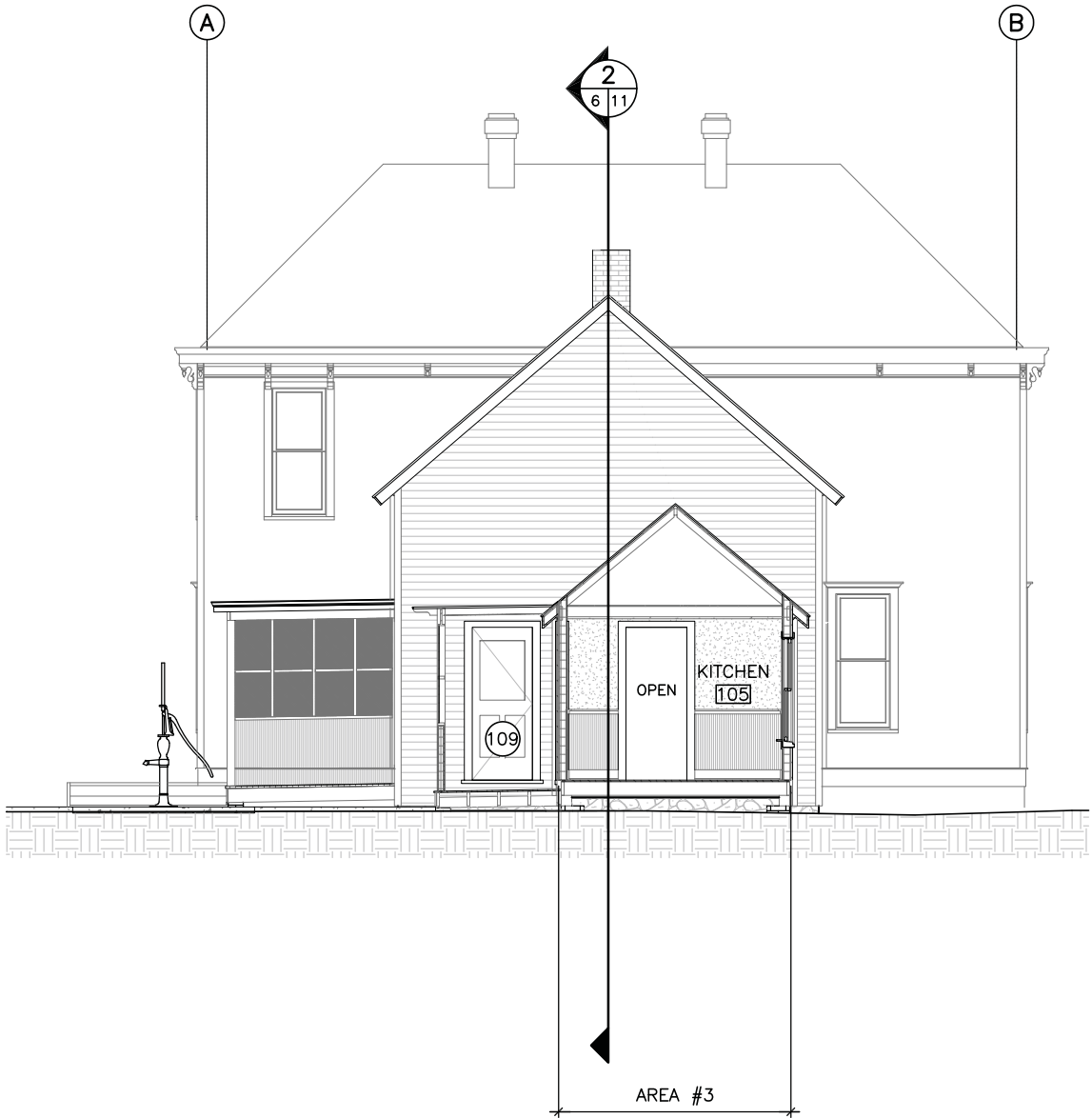
NOVEMBER 2012	TITLE OF PROJECT TRUMAN FARM HISTORIC STRUCTURES REPORT
UNITED STATES DEPARTMENT OF THE INTERIOR TRUMAN FARM NATIONAL HISTORIC SITE	TITLE OF DRAWING FARM HOME BUILDING SECTIONS
EXISTING CONDITION DRAWINGS SHEET 6 OF 11	NAME OF PARK TRUMAN FARM - HARRY S TRUMAN NATIONAL HISTORIC SITE
	REGION MIDWEST
	COUNTY JACKSON
	STATE MISSOURI

11/30/12 14:20 ADRIENNEANTONUCI R18 N:\A PROJECTS\2011\2011400 TRUMAN FARM HSR\BIM\ACAD\ARCH\07 OF 11_FARM SECTIONS 2_REV.DWG XREFS: ...BASE\VA-FARM - SECTIONS.DWG; ...BASE\VA-GARAGESKETCH.DWG; ...



1 FARM HOME - BUILDING SECTION AREA #2
7/11 SCALE (A)

- 2nd Floor CLG
Area #1
Elev. 118'-0"
- 2nd Floor CLG
Area #2
Elev. 114'-11 3/8"
- 2nd Floor
Area #1
Elev. 110'-5 5/8"
- 2nd Floor
Area #2
Elev. 107'-7 5/8"
- 1st Floor
Area #1
Elev. 100'-8 1/2"
- 1st Floor
Area #2 & #3
Elev. 100'-0"
- Basement Floor
Area #2
Elev. 93'-6 1/2"



2 FARM HOME - BUILDING SECTION AREA #3
7/11 SCALE (A)



NOVEMBER 2012	TITLE OF PROJECT TRUMAN FARM HISTORIC STRUCTURES REPORT
UNITED STATES DEPARTMENT OF THE INTERIOR TRUMAN FARM NATIONAL HISTORIC SITE	TITLE OF DRAWING FARM HOME BUILDING SECTIONS
EXISTING CONDITION DRAWINGS SHEET 7 OF 11	NAME OF PARK TRUMAN FARM - HARRY S TRUMAN NATIONAL HISTORIC SITE
	REGION MIDWEST
	COUNTY JACKSON
	STATE MISSOURI

General Existing Conditions

The Farm Home consists of a wood frame, two-story hipped roof structure with two gable wings telescoping to the east. The layout of the west wing (main mass) has a room on either side of the central hall stair, similar at both levels. The hall connects to the central wing, which consists of the dining room, the basement and a separate stair that leads to the standalone second level bedroom (Harry's Room). The east wing is accessed through the dining room. This one story mass is comprised of the kitchen that was reconstructed in 1984. The east and central wings each have a semi-enclosed porch to the south.

Existing Conditions -- Architecture

Architecture – Roof

The main house roofing consists of cedar shingles with a 5" exposure. The ridge and hips are also wood shingles.

From the underside of the attic it was determined that the sheathing consists of 1 x 6 boards with approximately 3" spacing with the exception of +/- 2' from the eave which is newer solid sheathing. The spaced sheathing indicates that wood shingles were the original roofing and is consistent with historic photographs. Park records indicate that the original roof remained the base layer for succeeding roofs until 1984 when it was all removed along with three layers of subsequent composition shingle above it.



Figure 3-55: Underside of the roof, as viewed from the attic, EMH 12/6/11

The two east low slope porches roofs consist of a sheet membrane system with a white coating. Park staff indicated that the roofing was replaced c. 2002.

Architecture – Gutters & Downspouts

The gutter of the main roof consists of a newer stainless steel integral gutter c. 1984. This system drains to two 4" round downspouts on the east side – at the north and south ends, each with a 10' extension at grade. The north downspout is currently disconnected at the top.

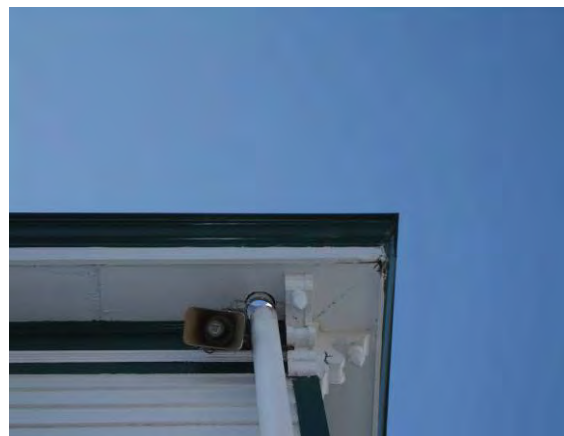


Figure 3-56: Detached north downspout , EMH 12/6/11

The west (front) porch and east additions have 5" half round gutters, painted white. The front porch drains to two 3" round

downspouts on the north and south ends of the porch each having a 3' extension at grade. The east wing has a series of 3" round downspouts. The south east porch has no gutter but this low slope roof area drains to the southeast corner to a fourth 3" round downspout and 3' extension at grade.

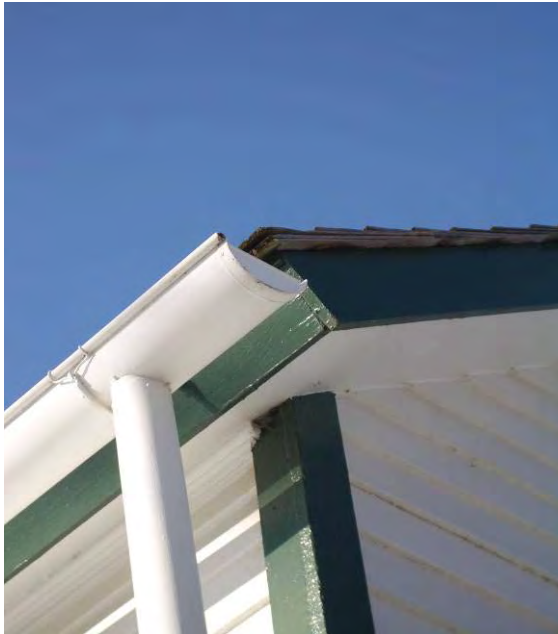


Figure 3-57: Half round gutter and round downspout, EMH 12/6/11

The following historic photo shows a wood barrel which collected rainwater from the downspouts on the east end of the central wing. The historic photo also shows a possible ogee-shaped gutter and round downspout.



Figure 3-58: Pre-1912 dining room porch with rain barrel and gutter system (Source: Park Records)

Architecture – Chimneys

There are four red brick running bond chimneys on the house; two at the west wing of the house with corbelled detailing at the upper portion, one at the two-story central wing and one newer chimney at the east wing. All have newer prefinished red caps and all have prefinished brown stepped flashing at the roof intersections. The two chimneys at the west wing roof and the one chimney on the central wing are connected to the lightning protection system. There is minor face of brick spalls at the corbelled coursing of the two west wing chimneys.

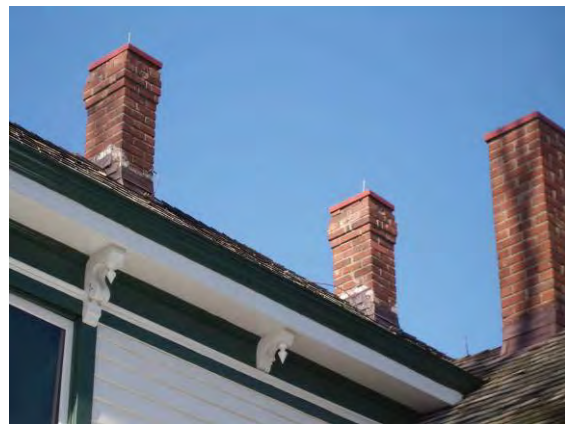


Figure 3-59: Chimneys, as viewed looking northeast, EMH 12/6/11

The east wing chimney is currently in a different location (offset of the main east ridge) than can be seen in the historic photograph below, c. 1935, when the east chimney aligned with the ridge.

The 12"x 12" exterior dimensions also indicate it was rebuilt inaccurately because the interior allowable fire area would be virtually non-functional historically.



Figure 3-60: East chimney aligned with ridge, c.1935 (Source: Park Records)

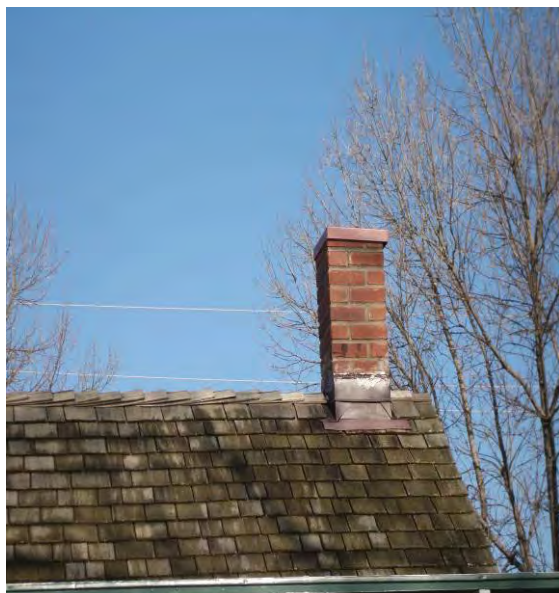


Figure 3-61: East chimney existing location, EMH 12/6/11

Architecture – Exterior Walls

The exterior walls consist of nominal 2 x 4 framing. The stud spacing and sheathing are unknown. 1984 work indicates that insulation, a vapor barrier and 15 lb felt paper were added. The wood siding was replaced in 1984, has a 4 ½" exposure and is painted white.

The wood framed walls are supported by either brick or stone as is discussed in the structural section.

There is a 1-1.5" separation visible between the west wing's east wall and the central wing as witnessed on the north side. Crack monitors were installed on the east facing wall: east wing in 2005. Refer to the structural section for foundation discussion.

Architecture – Exterior Trim

At the west wing of the house, the exterior trim, all painted, consists of 1 x 8 fascia with a 3 ½" ogee trim; 1x frieze board with ogee trim; decorative built up wood corbels with a tear drop shaped eave; 1x corner boards; window casing with a built up header detail at the lower level; and 1x watertable trim.

The exterior trim at the central and east wings is similar to the west wing but without the ogee frieze board and corbels at the eave.

The painting of the trim varied over the years between white/dark green versus all white. The two-tone scheme highlights the detailed trim members more successfully. Paint samples 6 and 7 reflect the prevalence of the dark green/green color with the white/gray colors (Appendix F).

Architecture – Porches

There are three porches on the house: the front (west) porch and two enclosed porches facing south – one each from the central wing (porch 106) and the east wing (porch 107).

The front porch has a hipped roof and is open. It is approximately 13” above grade with no steps. The existing porch framing and flooring was replaced between 1994 and 2009, per park records. The porch is supported by six wood turned posts, the western four of which have been replaced. The 1984 work indicated that the porch was shored up, so it is possible the roof framing is original. The smaller spindle and bracket work below the porch eave was also reported to have been replaced in 1984.



Figure 3-62: Front porch, ABA 12/6/11

Porch 106 is a semi-enclosed, screened-in porch with solid beadboard walls below a 2-over-2 “window” pattern at the screened portions above.



Figure 3-63: Interior of porch 106, view towards the west wing, ABA 12/6/11

Porch 107 is another semi-enclosed, screened-in porch (similar to porch 106) with varied detailing including corner brackets and exposed rafter tails.



Figure 3-64: Exterior of porch 2, EMH 12/6/11

Architecture – Windows

Note: Several of the windows (unidentified) underwent significant restoration and reconstruction, according to the 1983-1984 rehabilitation records. Since assuming ownership of the property, the NPS has also restored several windows.

West Wing: First floor the windows are 2'-4" x 5'-9" (windows 101, 102, 106-108); second floor windows are 2'-4" x 5'-4"

(201-204, 207, 208). The windows in this portion of the Farm Home are one-over-one double hung with 1 x 4 wood trim and sash painted on the exterior. Exterior header trim is 1 x 4 and varies in profile as either ogee (on the first floor) or plain (on the second floor). The wood sill is 1 ¾" with a stepped profile. Interior trim, sash and skirt are varnished (dark) while the sill is either painted or varnished. The interior trim has a decorative profile and bull's eye corner blocks. Hardware consists of decorative, cast thumb turn locks, sash pulleys and a one finger sash lift at the center of the lower sash.



Figure 3-65: First floor window 102, west wing, NAA 12/6/11



Figure 3-66: First floor interior window trim, west wing, NAA 12/6/11



Figure 3-67: Second floor window 204, west wing, EMH 12/6/11

Central Wing: First floor wood windows are 2'-0" x 5'-6", two-over-two double hung (windows 103, 105). 1x4 trim, ogee header trim, sash and 1 ¾" stepped profile sill are all painted. Interior trim, sill and skirt are also painted 1 x 4 material. Hardware consists of two galvanized spring pins at the stiles on the upper and lower sash to hold the windows open. There is one finger lift at the center of the sash.



Figure 3-68: First floor window 105, central wing, NAA 12/6/11

The second floor windows are 2'-0" x 4'-4", two-over-two double hung (205, 206).

The trim and header trim is 1 x 4 and the sill is the same as the first floor windows' sills. Interior trim, sill and skirt are also 1 x 4 material. All, including the sash, are painted. The windows have no sash lifts or pulleys but do maintain the two galvanized spring pins at the stiles of the upper and lower sash.



Figure 3-69: Second floor window 206, central wing, NAA 12/6/11

In the basement of the central wing, there are three lite awnings in 2x painted wood frames (windows 001, 002). These windows have no hardware as they are toenailed into the frame. They were installed inside out (i.e. the glazing compound is on the interior).

East Wing: The window is 2'-0" x 4'-4", two-over-two double hung (window 104). The trim is 1 x 4 with a 1 3/4" sill with a stepped profile. Interior trim, sill and skirt are also 1 x 4 material. All, including the sash, are painted. There are two spring galvanized pins at the stiles located on the upper and lower sash.

Architecture – Doors

West Wing: The entry screen door is 2'-10" x 6'-11" (door 101A), half-lite screen over four equal screen panels. The wood frame and 1 x 4 trim are painted. Hardware consists of a spring closer and two surface mounted hinges. There is no handle on the exterior. The door does not match any of the historic photos and appears to be a recent construction. The screen door style varied as per historic documents and photographs.



Figure 3-70: West entry screen door 101A, main door 101 and transom, NAA 12/6/11



Figure 3-71: West entry, c.1930s, screen door style (Source: Park Records)



Figure 3-72: West entry, 1983, screen door style (Source: Park Records)

The main entry door is 2'-10" x 6'-11" half-lite and wood with a decorative shell trim at the top of the lite over a carved floral design panel with a ½ spindle surround (door 101). The interior door frame has numerous layers of paint indicating that it may be original (See Appendix E). Exterior trim is similar to the window trim for the west wing. Both the door and trim are painted. Interior trim matches the window trim in this wing – it is varnished (dark), has a decorative profile and has bull's eye corner blocks.

Hardware consists of two ball hinges, a knob handle and deadbolt on the exterior and a decorative knob on the interior. There is a 2'-10" x 11" single-lite transom above the door that is operated from the interior.



Figure 3-73: West entry door 101 and screen 101A, ABA 12/6/11

Interior doors leading into rooms in the west wing of the house (both floors) are 2'-7 ½" x 6'-8" x 1 3/8" (doors 102, 104, 105, 201-203). Closet doors are 2'-0" x 5'-10" x 3/4." The doors are two-over-two (vertical) raised panel wood doors with an applied dark varnish. 1 x 5 ½ decorative trim with bull's eye termini is varnished. Typical door hardware consists of surface mounted mortise with white ceramic knob handles, two ball hinges and a skeleton key lock.



Figure 3-74: West wing door 202 and trim, ABA 12/6/11

Central Wing: There are three exterior doors to the south porches from the central wing and one from the east wing. The two doors at Porch 1 are 2'-7 1/2" x 6'-7" (doors 103, 108) and the Porch 2 doors are 2'-6" x 6'-5" (109, 111). All of these doors are two-over-two (vertical) lites with raised wood panels, painted. The hardware for each door consists of black enameled knob hardware, deadbolt, skeleton key locks (exposed mortise), oak thresholds (new) and two Eastlake hinges. The trim varies from 1 x 3 plain trim to 1 x 5 1/2 decorative trim with bull's eye corner blocks.



Figure 3-75: Central wing (dining room 104) closet door and hardware, ABA 12/6/11

Interior doors in this wing are typically 2'-5 1/2" x 6'-5" x 1 1/4" with 1 x 4 1/2 trim. The doors and trim are painted and have Eastlake hinges. Doors 106, 108 and 109 are two-over-two (vertical) lites with raised wood panels, painted. The hardware for each door consists of black enameled knob hardware, deadbolt, skeleton key locks (exposed mortise) and oak thresholds (new). Doors 112 and 113 are simple board and batten doors.

Architecture – Ceiling Finishes

West Wing: As seen in the west wing attic (looking down into the second floor ceiling), the ceiling finish in the second floor portion is composed of 18" wide plaster board with a thickness of approximately 3/4" over 1 x 4 spacers at 16" on center (run perpendicularly to the ceiling joists). It is assumed that the first floor ceilings in this wing are constructed similarly. All ceiling plaster board is painted. Kraft-backed, fiberglass batt insulation (R-11) lies over the top, between the joists. Note: the 1984 specifications call out for R-30 blown-in fiber glass-fiber insulation.



Figure 3-76: West wing ceiling finish structure, as seen from the attic access hatch in room 203, NAA 12/6/11

Central Wing: Ceiling finishes in the central wing were not observable from above, but the inner structure is assumed to be similar to the west wing (dating to 1983-1984). The finish throughout this wing is painted plaster. Porch 1 has a beadboard ceiling finish, painted white.

East Wing: Room 105, the kitchen, was reconstructed in 1983-1984; therefore, the ceilings date to this period and are assumed to be of drywall composition, painted. Porch 2 has a beadboard ceiling finish, painted white.

Architecture – Interior Wall Finishes

Most of the original lath and plaster interior walls can be assumed to have been replaced with ¼" thick plaster lath (appears to be continuous sheets) under 3/8" thick plaster board to mimic the original lath and plaster thickness and texture. According to the work logs from George Fogelson and the specifications from 1984, the original lath and plaster was replaced with Rocklath Plaster Base and a coat of plaster where severely deteriorated or damaged. According to the logs, the original lath and plaster appear to have been patched, where possible. The environmental testing indicates

that walls were painted off-white or tan in color (Appendix E). All plaster walls are either painted or wall papered (non-historic c. 1984; the park has stored the historic wallpaper samples which were removed in 1983).

Comparing the data provided from sampling lead and asbestos, the following locations were determined to likely be old or original plaster:

- Interior of closet in dining room 104
- Portions of the south wall of dining room 104
- Interior of closet in bedroom 203
- East wall of bedroom 202
- East wall of bedroom 204

In contrast, the paint/plaster samples provide data that questions the dining room 104 closet (Sample 1) and bedroom 203 closet (Sample 4) as old or original due to only having four and two layers of paint, respectively (Appendix E). However, one could assume that, as closets, these were not painted as often.

Wood wainscot trims the walls in the central wing dining room 104 and east wing room 105 with 3" wide vertical planks that are painted and capped with a chair rail.

The wood wainscot at the stair area is likely original due to the presence of lead paint.

The south porches have beadboard, painted white, at the exterior walls below the screened-in window openings. Walls shared with rooms 104 and 105 have the exterior siding as their finish.

The basement walls in the central wing are the Farm Home's rubble foundation with no finish.



Figure 3-77: West wing room 103 interior finishes, ABA 12/6/11

Architecture – Interior Trim

West Wing: The base trim (on both floors) in this portion of the Farm Home are the most decorative. The wood base is 7 ½" tall, stained dark, with a matching 1 ¼" tall by 1" wide base shoe. Both have ornate ogee style profiles. In the corners, there are base corner moldings that are similarly ornate. These corner pieces are 12" tall, 1 ½" wide with a matching dark stain and profile. From George Fogelsong's work records, it is mentioned that the historic trim was replicated by a professional millworker and re-installed. All recreated pieces were numbered and dated, according to the 1983 specifications.



Figure 3-78: West wing trim profile, ABA 12/6/11

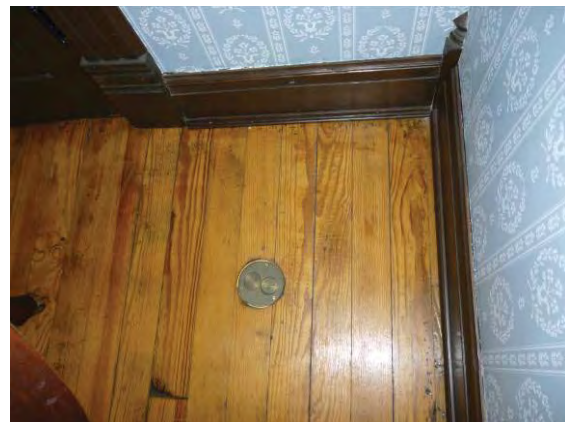


Figure 3-79: West wing room 103 base trim and floor, ABA 12/6/11

Central Wing: The dining room (104) and room 204 have rectangular 5 ½" x ¾" wood base trim with quarter-round, 1" base shoe. In room 204, the base shoe is missing except along the north guardrail half-wall. Room 104's base trim has a chamfered edge. Porch 106 has a painted quarter-round base shoe.



Figure 3-80: Porch 106 finishes, ABA 12/6/11

East Wing: The base trim in kitchen 105 is the same as room 104's trim – 5 ½" chamfered base with quarter-round shoe and wood wainscot along the walls to 37." Porch 107 reflects porch 106 with only a simple painted quarter-round base shoe.



Figure 3-81: Kitchen 105 interior finishes, ABA 12/6/11

Architecture – Floor

West Wing: The flooring in this portion of the Farm Home is 3-3 ¼" wide varnished wood tongue and groove, laid running north-south. The floor is continuous through the closets and to the main stair. Most of this portion of the Farm Home has a carpet runner protecting the wood floors. (See figure 3-79: West wing room 103 base trim and floor.)

Central Wing: Rooms 104 and 204 have wood tongue-and-groove flooring which is composed of +/-3" wide boards that are ¾" thick and vary in length between 6'-2" and 12'-3." The flooring runs north and south. In 204, approximately one-quarter of the floor is covered by a carpet runner (same type as in the west wing). Porch 106 has painted 3" wide wood board flooring that also runs north and south. A sample was taken of this flooring and it was analyzed by a wood technologist to be yellow pine (see Appendix F). The basement has a 3" thick concrete floor, placed up to the rubble foundation walls.



Figure 3-82: Central wing tongue and groove floor, as seen from the basement stair, ABA 12/6/11

East Wing: The floor in room 105 is +/- 3" wide wood flooring that runs east and west. The wood is pine and lightly varnished. This flooring continues into the closet but is painted. Porch 107 flooring is the same as porch 106 flooring.

Architecture – Stairs

West Wing: The primary staircase leading up to the two bedrooms in the west wing has 16 risers at 7 ½" high and is 2'-11" wide. There is no handrail along the exterior side but an elaborate wood railing system exists on the interior side with a 4" wide handrail, newel posts and

spindles stained to match the other wood trim. A landing is located at the eleventh riser. The landing has wood flooring that matches the flooring in this wing. The base trim of the staircase also matches the decorative trim throughout the west wing of the Farm Home.



Figure 3-83: West wing primary stair case, ABA 12/6/11

Central Wing: The winder stair up to room 204 has 12 risers 7-7 ½" high and is 3'-1" wide. It has tread and riser rubber protectors installed over the painted wood stairs and no base trim. The stair has a contemporary handrail along the exterior walls which is 2" wide and 30" above finished floor. It is discontinuous and does not have any extensions.



Figure 3-84: Central wing stair and handrails to room 204, ABA 12/6/11

The basement stair has six open risers at 10" high and one open riser at 6" high. The width of the stair is 2'-3" and there are no handrails.



Figure 3-85: Central wing basement stair, ABA 12/6/11

Architecture – Code/Life Safety Issues

Although the Farm Home was originally a residence, its current use would be best categorized as an A-3 (museum) Occupancy and its wood frame construction is a Type V-B (non-rated) rating. Per the 2009 International Building Code (IBC), the allowable square footage is 6,000 sf per floor for one story. The existing house is 1,900 sf and has two stories.

Architecture – Accessibility

An unpainted 4'-0" wide x 10'-0" long wood ramp exists on the south side of the house leading to a 5'-0" wide x 10'-0" long landing at porch 106. There is no hand or guard rail and the change in elevation is +/- 11". This ramp was installed in 1996 per the park records. Screen door 107 at the porch is 2'-7 ½" wide. None of the doors have accessible lever style hardware. There are two doors leading from this porch into the house. Door 108 is 2'-5" wide and has a 3" change in elevation at the threshold. Door 103 is 2'-7 ¼" wide and has two steps – one 6" and the other 5 ½" – for a total change in elevation of 11 ½". Once inside the house, there is an 8" step from dining room 104 up to hall 101.

There are two separate stairways leading to the upper levels of the Farm Home.

There is no restroom within the Farm Home.

The other routes into the building would also prove to be challenging for accessibility. Door 101 is 2'-9" clear with a 2 ½" threshold accessed from the front porch. The front porch is 13" to 15" above grade. Porch 107 is 9" above grade and has two doors accessing the house; door 111 is 2'-6 ½" wide with another 9" step and door 109 is 2'-6 ¼" wide with a 9" step.

Existing Conditions -- Structural

Structural – Foundation

The basement wall footings, if any, were not visible. The basement walls are approximately 18" thick and composed of mortared rubble stone masonry. There is a slab on grade in the basement. The slab is approximately 3" thick. The chimney in the central wing is supported by a large block of masonry foundation construction.

The west wing foundation system consists of perimeter foundations and a crawl space. The perimeter foundations are brick masonry grade beams that bear directly on soil. The depth of grade beam is approximately 46" and the grade beam width is 8 ½". The bottom of grade beam is approximately 38" below finished exterior grade. Interior foundations do not exist except for the foundations under the two brick chimneys. The chimney foundations are buried beneath the soil in the crawl space and therefore the foundation materials, dimensions, and depth are unknown.

Foundations under the rebuilt kitchen 105 are concrete footings supporting brick piers. The 1983 drawings indicate the footings are 24"x 24"x 8" and the bottom of the footings are approximately 31" below finished grade. The 2005 Structural Assessment report notes the footings are 31"x 31"x 9" and the bottom of footing is 33" below finished grade. The brick piers are 12"x 12" on the 1983 drawings and measure 13"x 13" in the field. The top of brick piers is near or slightly below finished grade. A wood floor is constructed on the piers and is slightly above finished grade.

Foundations under the west porch are 8"x 8" brick piers at each wood column location. Footings, if any, under the brick piers are unknown. The 1983 drawings

indicate the porch 106 to be supported on 8"x 8" reconstructed brick piers. The foundations under the piers are unknown. Foundations under the porch 107 are 8"x8" brick piers resting on 22"x 22" concrete footings. Top of brick piers is near finished grade.

Structural – Floor Framing

The first floor framing over the basement consists of 1 1/2" x 7 1/2" wood joists spaced at about 24" on center (o.c.). The joists span east-west a distance of approximately 16' and are sheathed with solid 3/4" thick tongue and groove wood flooring. The joists are supported on the perimeter foundation walls by bearing on an embedded wood sill plate (following figure). The basement floor framing at the stair opening is supported by 2 x 4 propped posts which extend from the underside of the floor framing and bear on the slab on grade. Likewise the stair to the basement has framing that bears directly on the slab on grade and is decaying.



Figure 3-86: Embedded wood sill plate on the stone foundation wall, northeast corner of the basement, PD 12/6/11

The first floor framing over the west wing crawl space consists of 1 1/2"x 7 1/4" to 7 1/2" deep wood joists spaced at about 16" o.c. The joists span east-west a distance of approximately 15'-6" and are sheathed

with solid 3/4" thick tongue and groove wood flooring. The joists are supported by a nominal 2 x 8 wood rim joist that appears to bear directly on the brick grade beams. The finished grade in the crawl space is about 16" below the bottom of joists.

The first floor framing in kitchen 105 is generally covered and not visible, but one small area was observed and the framing appears to match that shown on the 1983 drawings as nominal 2 x 8 joists spaced at about 16" o.c. The joists span north-south and are supported by 6 x 6 wood beams that bear on the brick piers. The floor sheathing is 3/4" tongue and groove wood flooring.

Where accessible, the second floor framing at bedroom 204 was measured to be 1 1/2" x 7 1/2" wood joists. Spacing is unknown. The joists span east-west approximately 15'-6" and are sheathed with solid 3/4" thick tongue and groove wood flooring. The joists are supported on 2 x 4 wood-framed walls.

The framing supporting the second floor of the west wing was not accessible. The framing is expected to be same as the first floor framing over the crawl space described above, and the overall depth of the floor system (flooring, framing, ceiling sheathing) is consistent with 7 1/2" deep joist framing. The wood railings around the second floor stair opening appear sound.

The floor framing for kitchen 105, dining room 104, and porches 106 and 107 were reconstructed in 1983. The floor framing for porch 107 was again reconstructed in approximately 2002 by Lewis McKarnin, NPS Wood Crafter, because the 1983 framing had decayed due to termite damage. The current floor framing for

the porch 107 is $\frac{3}{4}$ " tongue and groove decking on nominal 2 x 4 untreated joists at 16" o.c. The joists are supported by 6 x 6 cedar beams. Joist hangers are used to attach the joists to the beams

The floor framing for porch 106 appears to generally match the framing shown on the 1983 drawings, which is 2 x 6 joists at 16" o.c. supported by 6 x 6 timber beams. The joists and beams are notched at the connections and the framing is not pressure-preservative treated.

The floor framing for the front (west) porch appears to generally match the 1983 drawings, which is nominal 2 x 8 joists at 16" o.c. spanning about 8'-6" to nominal 6 x 6 beams at each column location. The 2 x 8s are notched at the bottom and the 6 x 6 beams are notched at the top at each connection. The front porch flooring is also $\frac{3}{4}$ " thick tongue and groove decking boards. The framing at the front porch is not pressure-preservative treated.

The front porch columns were replaced with redwood in about 2002 by Lewis McKarnin.

Structural – Roof Framing

The roof framing at the central wing is estimated to be 1 1/2" x 3 1/2" rafters spaced at about 24" o.c. The rafters span north-south approximately 8' - 6" (horizontal dimension) between the exterior 2 x 4 wall and the ridge. The rafters are sheathed with spaced 1 x 6 (nominal) solid wood underlayment spaced at 10" o.c.

The roof framing over the west wing consists of 1 1/2" x 3 1/2" rafters spaced at about 24". The rafters span east-west approximately 8' (horizontal dimension) between the exterior wall and the

nominal 1 x 4 ridge board. The rafters are sheathed with spaced 1 x 6 (nominal) solid wood underlayment spaced at 10" o.c. The hip roofs are framed in the same manner with nominal 2 x 4 rafters spanning from the exterior wall to the hip ridge. The hip ridge member is a single nominal 2 x 4. All the rafters are supported by a nominal 1 x 6 flat board at the exterior wall, and the rafters do not line up with the ceiling joists (figure 3-87). The 1 x 6 flat board supports the rafter and the 1x board spans to the ceiling joists. The hip roofs do not have ceiling joists or blocking to resist thrust from the rafters.



Figure 3-87: West wing attic, rafters do not align with ceiling joists, PD 12/6/11

A wood sample was taken from the rafters of the west wing. A wood scientist identified the wood species group as Yellow Pine and probably Southern Yellow Pine (Appendix F).

Localized wood rot was observed in the 1x sheathing boards around the north chimney where roof leaks occurred in the past.

The roof framing of kitchen 105 was not visible but is shown on the 1983 drawings. Namely nominal 2 x 4 rafters at 16" o.c. supporting nominal 1 x 6 sheathing spaced at 10" o.c. is shown. The same 1 x 6 flat board at the rafter bearing is also

shown on this drawing.

All the attics are unvented. The west wing attic has numerous holes through which day light is visible. These holes provide some measure of attic venting. Measured wood moisture content in December 2011 was about 8%, which is significantly less than that necessary to initiate decay.

Roof framing for the porches at kitchen 105, dining room 104, and the front porch was not accessible and was not observed.

Structural – Ceiling Framing

The ceiling framing above bedroom 204 was not entirely visible, but is estimated to be nominal 2x ceiling joists spaced at 24" o.c. and spanning north-south about 13' - 6" between the 2x rafters. The ceiling joists connect to the rafters at a point about 20" above the top of exterior wall. There are also three nominal 1 x 6 vertical hangers extending from the ridge down to the ceiling joists. The hangers appear to be spaced about 4' o.c.

The second floor ceiling framing in the west wing consists of 1 1/2" x 5 1/2" ceiling joists spaced at 24" o.c. and spanning east-west about 16' between the west and east 2 x 4 walls. The ceiling joists do not align with the rafters.

The ceiling framing of kitchen 105 was not visible but is shown to be constructed in a similar manner on the 1983 drawings. Namely nominal 2 x 4 ceiling joists spaced at 16" o.c. and spanning approximately 10' north-south is shown.

Structural – Wall Framing

The exterior walls of the entire structure are framed with 1 1/2" x 3 1/2" studs. Spacing is unknown. Exterior wall sheathing is unknown. The interior bearing wall on the east side of the west wing is also framed with nominal 2 x 4 studs at unknown spacing. The rebuilt

east wing was specified on the 1983 drawings to have 2 x 4 at 16" o.c. typical studs framing with 1 x 10 horizontal sheathing. It is likely this was done to match the original wall construction in the rest of the structure.

The two brick chimneys in the west wing do not appear to be load bearing. They stack vertically through the roof, second floor, and first floor framing and bear on the ground below the crawl space. Likewise the brick chimney on the east wall of the west wing that extends from the basement does not appear to be load bearing. The chimney in kitchen 105 does not appear to be supported on the foundation. Rather the chimney is corbeled off the east wood wall framing.

The walls of the west and east wings are separating from the central wing. The 2005 engineering study performed by Quinn Evans Architects with Fitzpatrick Structural Engineering, P.C. measured separation and documented that the amount of separation varies with soil moisture. Gauges were mounted on the north wall junctures to quantify the movement.

Structural – Lateral System

Lateral stability for the building is provided by the exterior and interior walls and wall sheathing/finish.

Structural – Load Requirements

The required floor live load capacity per the 2009 International Building Code (IBC) and historic building codes for residential use is 40 pounds per square foot (psf). The live load required for public assembly use is 100 psf. The live load required for porches is to be the same as the occupancy served inside.

The required ceiling live load capacity

in 2009 IBC is 10 psf for attics without storage and 20 psf for uninhabited attics with limited storage. The IBC 2009 (footnote i, table 1607.1) would require the attic of the west wing addition to be designed for the 20 psf live load because of the tall and open space in the attic and the possibility that items could be stored. Historic codes, e.g. the 1949 Uniform Building Code (UBC), would not require the inaccessible ceiling above bedroom 204 or the ceiling in the west wing to be designed for live load. Instead that code would only require a total load capacity of 10 psf.

The ground snow load required for the city of Grandview, Missouri is 20 psf. This results in a flat roof snow load of 20 psf per ASCE 7-05, Minimum Design Loads for Buildings and Other Structures. The sloped roof snow load is similar to the flat roof snow load due to the adhesion of snow on the wood shingles and the roof slope.

Drifting snow loads were not required by codes until the 1970s or 1980s. Drifting will cause increased snow loading in localized areas near roof steps such as exist between the three wings.

The city of Grandview municipal code ARTICLE VI. - SPECIAL STANDARDS FOR COMMERCIAL, OFFICE, INDUSTRIAL AND MULTI-FAMILY RESIDENTIAL BUILDINGS has a requirement in Section 6-26 Tornado and Severe Wind Protection that commercial buildings contain a "Place of Refuge." The basement appears to qualify, but requires members of the public to access the stairs to the basement. The live load for stairs in a residence is 40 psf, but increases to 100 psf in a commercial building in accordance with the 2009 IBC.

Existing Conditions -- Mechanical

Mechanical Physical Description

The original house was heated via individual room heating stoves that had vent connections to three existing chimneys. These chimneys were located near the center of the Farm Home. There are vent openings into the existing chimneys in all of the individual rooms on the first and second floors. There was a fourth chimney added in 1983/1984 for the kitchen 105 cooking stove on the east side of the house. Ventilation for the house occurred via operable windows in the rooms.

In 1984, a forced air mechanical system was installed to provide heating and cooling to the house. The mechanical drawings from 1984 show a new mechanical system complete with a forced air gas fired furnace in the basement and new duct routes to supply air diffusers on both the first and second floors. A new chase was created in the northeast corner of room 103 for the ductwork up to the second floor by taking over part of the closet space. The gas section of the furnace was vented through the center chimney in the house. The new mechanical system also was provided with a DX cooling coil in the furnace and a condensing unit located outside the building on the north side. Refrigerant lines from the condensing unit into the basement and to the new cooling coil in the furnace are shown on the 1984 design drawings. A humidifier section on the new air handling unit was also provided during this design phase for the house. In 2007, a geothermal system replaced the existing gas fired forced air system and DX condensing unit. The existing ductwork and supply diffusers were reused for the new geothermal system.



Figure 3-88: Air handling unit in basement, DMD 12/6/11

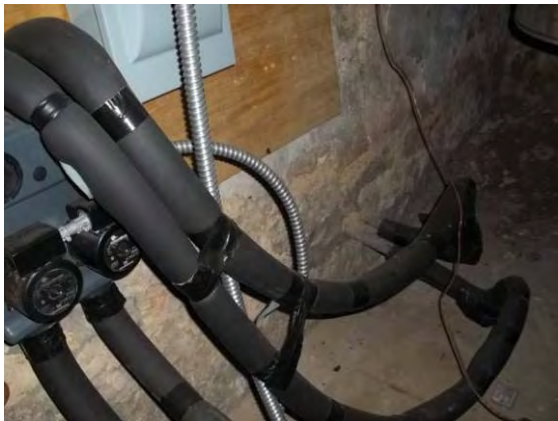


Figure 3-89: Condenser water line entry into basement, DMD 12/6/11

New condenser water lines and a new vertical bore field were installed for the geothermal system. The vertical borefield is located in the parking lot south of the building and consists of five bores approximately 300' in depth. The borefield piping is routed from top of each borefield well, ganged together and routed into the south side of the basement. Disturbed ground on the south edge of the house is evident as well as the asphalt repair in the parking lot and a replaced concrete curb section.



Figure 3-90: Disturbed ground on south side of building where geothermal lines enter building, DMD 12/6/11



Figure 3-91: Patched asphalt where geothermal wells installed in parking lot, DMD 12/6/11

The air handling unit provides both heating and cooling to the house via the geothermal system. In addition to the geothermal system for heating, there is a supplemental electric heater installed in the supply ductwork downstream of the air handling unit for the second and first floors. The heat for the basement is via a wall mounted electric heater located on the south wall of the basement.

The existing air handling unit provides conditioned air to the first and second floor. The air is distributed to the first

floor via floor registers and wall diffusers. Kitchen 105 contains one supply diffuser located on the wall approximately 5'-10" above the finished floor on the west wall.



Figure 3-92: Typical floor diffuser, DMD 12/6/11

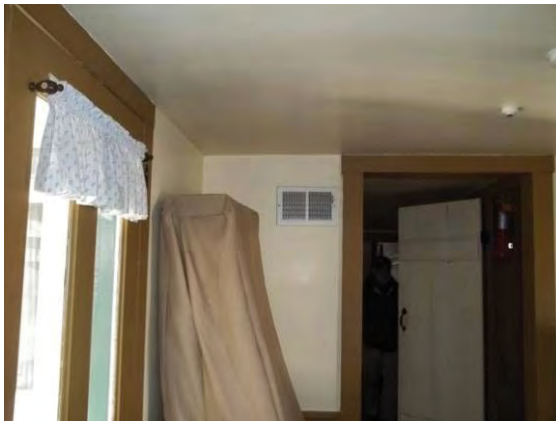


Figure 3-93: Wall diffuser in kitchen 105, DMD 12/6/11

The dining room 104 contains two floor registers located below the windows on the north and south sides of the room. The hall 101 contains one floor diffuser that is located on the north wall adjacent to room 102. Room 102 contains two floor diffusers with one located on the west wall below the window and the second one located on the south wall. Room 103 contains one wall mounted supply diffuser located in the northeast corner that connects into the duct riser from the basement to second floor.

The second floor's air is distributed via overhead supply diffusers and two wall mounted diffusers. The supply ductwork is routed up from the basement in the northeast corner of room 103 and continues up to the attic. There are two wall diffusers that are connected to this main duct rise and provide air into room 204 and room 203. There are two overhead supply diffusers that are connected to the main supply duct in the attic and routed to ceiling mounted supply diffusers in room 202 and hall 201.



Figure 3-94: Ceiling diffuser on second floor, DMD 12/6/11



Figure 3-95: Wall diffuser in room 203, DMD 12/6/11

The return air for the air handling unit is via a large wall mounted return grille mounted below the stairs on the first floor. The return air is then ducted back to the air handling unit in the basement.



Figure 3-96: Return air grille below stairs, DMD 12/6/11



Figure 3-98: Programmable thermostat in room 103, DMD 12/6/11



Figure 3-97: Ductwork behind return air grille, DMD 12/6/11

There is no source of direct outside air into the air handling unit. The outside air for ventilation of the house is through the operable windows.

The control system for the air handling unit consists of a Climate Master programmable thermostat located on the north wall of room 103. The thermostat is currently programmed for occupied and unoccupied time with a setback temperature for the unoccupied hours. There is also a plug-in type CO sensor located in the kitchen 105 on the east wall.



Figure 3-99: Plug-in type of CO detector/alarm, DMD 12/6/11

There are four brick chimneys for the house that are all capped making the connected stoves noted below inoperable and for tour interpretation purpose only. The chimney furthest east is associated with kitchen 105. There is currently a cooking stove vent connected into the chimney in the kitchen 105. The chimney in the middle of the house has vent openings into the first floor dining room 104 and room 204. These two vent openings are currently covered by decorative vent covers.



Figure 3-100: Cooking stove in kitchen 105, DMD 12/6/11



Figure 3-101: Decorative vent cover in dining room 104, DMD 12/6/11

The third chimney is located on the north side of hall 101 and provides vent openings into room 102 on the first floor and room 202 on the second floor. The first floor has a vent opening that is currently connected to a heating stove in room 102 and has a decorative cover on the second floor in room 202. The fourth chimney is located on the south side of hall 101 and provides vent openings into the room 103 on the first floor and room 203 on the second floor. The first floor vent opening is currently connected to a heating stove and the second floor vent

opening is covered with a decorative cover. The cooking stove in kitchen 105 and the two heating stoves in rooms 102 and 103 are connected to adjacent chimneys via single wall flue venting. Room 202 also has a hole in the ceiling that appears to have been for a heating stove at some point. This opening is not covered.



Figure 3-102: Heating Stove in room 103, DMD 12/6/11



Figure 3-103: Room 202 vent opening in ceiling, DMD 12/6/11

Throughout the Farm Home are signs of humidity control problems including the peeling of wallpaper. This is also evident by a stand alone portable dehumidification unit that is located in the basement. This unit sits at the

bottom of the basement stairs and can be transported and plugged in to help control the humidity level in the house. The park staff monitors the humidity level in the Farm Home and plug-in and unplug the dehumidifier as needed. This dehumidification control is not automated and requires manual interaction to start and stop the unit.



Figure 3-104: Portable dehumidifier in basement, DMD 12/6/11

Plumbing Physical Description

The plumbing system for the house consists of a water line into the basement and a floor drain in the basement. On the south wall of the basement is a $\frac{3}{4}$ " copper water line with a shut-off valve. This copper line immediately turns to the east and tees into a hose bibb located in the basement. The $\frac{3}{4}$ " line is then capped in the basement on the south wall. There is no insulation on the water line. There is a floor drain in the basement near the east wall. This is a 2" floor drain and receives the condensate from the cooling coil of the air handling unit located in the basement. The routing of this line out of the building is unknown. This is the extent of the water and sanitation lines in the house.



Figure 3-105: Water entry into building, DMD 12/6/11



Figure 3-106: Floor drain in basement, DMD 12/6/11

In 2007 when the geothermal system was installed, the natural gas line for the house was abandoned. Currently there is no gas piping in the house and the natural gas line is stubbed up outside on the north side of the house and contains a pressure regulator, but no meter.



Figure 3-107: Gas line stubbed up with pressure regulator and no meter, DMD 12/6/11

Fire Protection Physical Description

There is no active fire protection system within the house.

Existing Conditions -- Electrical

Electrical – Infrastructure

Electricity was originally brought to the site in 1925-1930. The entire electrical service to the house was replaced and upgraded in 1984. In 2007 there was a major mechanical system upgrade to install the existing heat pump system. Within this mechanical upgrade the electrical systems were adjusted to make connections to the new mechanical equipment, minor lighting upgrades for energy efficiency within the basement, and an upgrade to the existing grounding electrode system which included providing new electrodes connected to the main water line and to a new driven ground rod.

The electrical meter, kilowatt hour style meter #12278336, is at the base of the pole and the power feed is then routed underground into a panel located within the basement stair entry. The electric utility is Kansas City Power & Light (Contact: Gary Jones at 816-813-1998).

The service panel is a 100 amp, 240/120v, 1 phase service and the panel is a 24 circuit, Cutler Hammer load center with a 100 amp 2 pole main circuit breaker disconnect. The panel schedule indicates four spare breakers and four bussed space poles were observed at the bottom of the panel. Panel serves all equipment located within the structure as well as four grade mounted landscape lights aimed back at each of the four facades of the house, and one branch circuit feeding the newer tool shed structure.

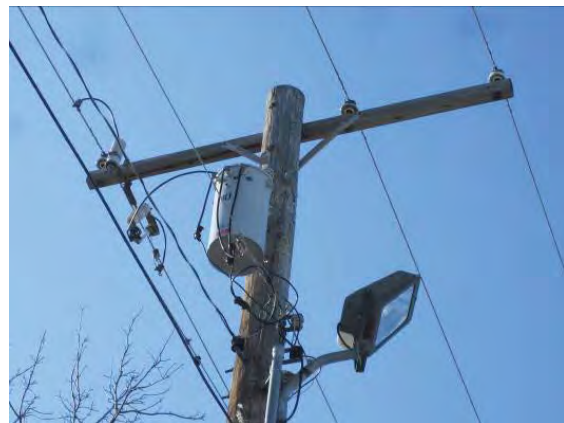


Figure 3-108: Existing pole mounted transformer, Jon Brooks 12/6/11

Electrical – Branch Circuits

The majority of the existing branch circuit wiring is contained within steel conduit. Conduit varies from EMT, flexible metal conduit, to PVC conduit, however, the majority appears to be EMT (NPS standard is to utilize EMT). There are very limited amounts of exposed non-metallic cable utilized. All branch circuiting, other than some existing cabling within the attic space, appears to be installed during the 1984 remodel or at a date after that renovation. Within the attic space there are a number of abandoned knob and tube style conductors which were not completely removed during the 1984 electrical upgrades. All of these conductors have been disconnected and are no longer in use. Branch circuits

provide a separate ground conductor such that the general outlets are the three pronged type with a ground connection available.



Figure 3-109: Conduits out of main electrical panel, Jon Brooks 12/6/11

Electrical – General Power Outlets and Equipment

15 amp duplex outlets are provided throughout the structure. Each bedroom on the second floor includes two outlets on opposite walls and hall 201 has an outlet as well. Rooms 102 and 103 include three brass floor outlets each and two floor outlets are provided in dining room 104. One outlet is provided at the entry of hall 101. Two general outlets are provided within the kitchen 105 and two general outlets are provided within the basement.

Power is provided to the heat pump mechanical system located within the basement.



Figure 3-110: Power to heat pump, Jon Brooks 12/6/11

Electrical – Lighting Systems

Puck style incandescent light fixtures have been recently added with surface mounted cabling routed from a light switch adjacent to the electrical panel out to one fixture located at floor level below the desk at door 113 and to two fixtures located above door 112.



Figure 3-111: Existing puck lights at stairwell, Jon Brooks 12/6/11

Each of the two stairs serving the first to second floors include two incandescent step lights to illuminate the stair treads. Refer to egress lighting comments below for additional information.



Figure 3-112: Existing steplights at stairwell, Jon Brooks 12/6/11

Exterior fixtures are controlled by an analog 24 hour timeclock located adjacent to the electrical panel.

Battery backed up egress lighting is provided by a Chloride 250 watt battery backup inverter which is connected to four incandescent step lights, two located at the main stair and two located at the secondary stair. These fixtures are operated by a standard toggle light switch located near the electrical panel within the stair access down to the basement. The battery system was functional at the time of the site observation (however, it was not tested for a full 90 minutes of backup). These lights only provide egress illumination along the stair treads, supplemental egress lighting in other areas of the Farm Home may be needed for proper egress illumination in the event of a power failure. If it is agreed that the Farm Home is not to be utilized during hours of darkness and the existing light levels provided by daylighting are adequate for egress, supplemental battery powered egress illumination may not be required.



Figure 3-113: Existing battery backup system, Jon Brooks 12/6/11

Electrical – Telecommunications

The building is served by an exterior building mounted telephone demark enclosure where two phone lines are routed into the basement. One phone line is connected to the fire alarm/security panel and the second is connected to a single phone jack located behind the desk on the first floor, just outside of door 113.

Electrical – Fire Alarm and Security System

The existing fire alarm and security system consists of a combination security/fire control panel, Vista-128FB, located within the basement. Panel includes a remote dialing system and is connected to one of two incoming phone lines from the phone utility company. This panel serves the following types of devices:

1. Smoke detectors
2. Heat detectors, 135 degree fixed temperature
3. Glass break ultrasonic devices
4. Motion detectors
5. Tamper switches
6. Alarm light/horn at northwest exterior soffit overhang
7. Security system key pad located at the top of the basement stair access
8. Tool shed building Garage door contacts and remote keypad



Figure 3-114: Existing security and fire alarm control panel, Jon Brooks 12/6/11

Smoke and heat detector devices are located within the basement, each bedroom, entry hall 101, dining room 104, kitchen 105, and stair landing. The majority of all security and fire alarm system wiring is concealed within the walls of the first and second floors; however, the cabling to the occupancy sensor within kitchen 105 is routed within surface mounted Wiremold.



Figure 3-115: Surface mounted conduit in kitchen 105, Jon Brooks 12/6/11

Electrical – Lightning Protection

Lightning protection consists of brass air terminals and brass or copper down-cables that appear to be terminated on buried ground rods. Air terminals are located at the peak of the roof, on the peak of each dormer, on three of the four chimneys.



Figure 3-116: Lightning protection system on roof, Jon Brooks 12/6/11

Hazardous Materials Physical Description

Lead Containing Paint

The December 2011 Lead-containing paint (LCP) inspection included a visual inspection and sampling of the residence structure and review of data compiled from previous LCP inspections and analysis. Prior LCP inspections included samples collected in 1996 that were analyzed utilizing sodium sulfide, a technique that is recognized as a screening non-quantitative method for identifying LCP. In 2010 an additional inspection and testing for LCP was conducted using an XRF detector coupled with bulk paint sampling and laboratory analysis. This limited XRF inspection was conducted by the Baker Environmental Consulting, Inc. in March 2010. This inspection confirmed that LCP is present on exterior soffits, cornice brackets front door components and the front porch ceiling.

On December 6, 2011 a total of 9 paint chip samples were collected by Landmark Environmental, Inc. and submitted for laboratory analysis, including nine samples at the residence. The samples were analyzed at an accredited independent laboratory, Reservoirs Environmental, Inc., which is an

analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental samples by the American Industrial Hygiene Association, Lab ID 101533 - Accreditation Certificate #480. Reservoirs analyzed the sample(s) using Atomic Absorption Spectroscopy (AAS)/Atomic Emission Spectroscopy - Inductively Coupled Plasma (AES-ICP) per using method USEPA SW846 3050B/AA (7420).

The findings of the December 2011 LCP inspection and other historical LCP studies are incorporated into this report by reference.

- i. Detectable lead in paint was confirmed for the following testing combinations.
 1. Interior plaster walls painted off-white or tan color.
 2. Interior plaster walls in bedroom 204 painted green or grey.
 3. Interior wood trim and door for stairwell at dining room, painted brown or gray.
 4. Interior wood trim in bedroom 204 painted brown or green.
 5. Exterior wood trim painted green in kitchen addition areas.
- ii. Paints with greater than 0.5 percent by weight lead (lead based paint) are identified at the following building components.
 1. Exterior soffits and fascia boards (wood substrate, white or green outer layer).
 2. Exterior cornice brackets (wood substrate, green).
 3. Exterior door casings (wood substrate, green).
 4. Exterior door facing (wood

substrate, green).

5. Exterior door threshold (wood substrate, gray).
6. Interior window, north basement wall 001 (wood substrate, white).

The identified LCP and lead based paint (LBP) was observed to be in fair to good condition. Loose/flaking LCP is not identified on the exterior or interior of the structure.

a) *Lead Dust*

The interior of the residence was generally well maintained, loose and flaking paint or dusts with paint debris were not visually identified. Wipe sampling for lead dust analysis was not conducted in the residence because identified paints were in fair to good condition.

b) *Lead in Soils*

Areas of the surface soils adjacent to the structure were not observed to have LCP debris.

c) *Asbestos*

An asbestos-containing material (ACM) Survey was conducted by Landmark Environmental, Inc. on December 6, 2011. The sampling was conducted according to U.S. Environmental Protection Agency (EPA) Asbestos Hazard and Emergency Response Act (AHERA) and U.S. Occupational Safety and Health Administration (OSHA) Chapter 29 Code of Federal Regulations (CFR) 1926.1101 requirements, as well as generally accepted industry standards. A total of 13 bulk samples were collected throughout the residence. Samples were collected from a total of eight types of suspected ACMs, including electrical wire insulation, wall plaster, wall board underlying wall plaster, tar paper in the

attic, flue insulation, and woven-type wall or ceiling paper.

The samples were analyzed at Reservoirs Environmental, Inc., using Polarized Light Microscopy (PLM). Of the suspect ACMs that were sampled, no materials were confirmed to be ACM by laboratory analysis.

d) *Mold*

Inspections of the structure were performed to identify the readily ascertainable visual extent of mold growth. Moisture testing in building materials was not performed nor was sampling of building materials performed for microbial analysis. Mold was not visually identified.

Summary of Hazardous Material Findings

Building Number	LCS ID 70144
Building Name	Truman Farm Residence
>1% Asbestos Confirmed	No
Detectable Lead in Paint Confirmed	Yes Interior & Exterior Painted Surfaces
Detectable Lead in Paint greater than 0.5% by weight (LBP)	Yes Interior & Exterior Painted Surfaces
Lead Dusts	None observed no samples collected
Lead Debris on Soils	None Observed no samples collected
Other Hazardous Materials Observed	No
Visual Mold Observed	No
Indication of Buried Tanks	No

General Condition Assessment

In general, the Farm Home is in good condition with the exception of the recurring damage caused by foundation movement and wood decay caused by insects and moisture.

Condition Assessment -- Architecture

Architecture – Roof

Condition: Good

The roofing is in good condition.

Architecture – Gutters & Downspouts

Condition: Good

All are in good condition. However, the fascia at each integral gutter corner of the west wing exhibits some minor damage at the vertical joint at each corner. It is unknown what is causing the damage but it could possibly be from differentiation of expansion between the wood and stainless steel gutter, causing a gap at the end grain of the fascia members.



Figure 3-117: c.1984 stainless steel integral gutter, minor damage at corner joint, EMH 12/6/11

The downspout on the north side of the west wing needs to be reattached to be effective. The current disconnected condition may be contributing to the foundation settlement issue in that area.

Architecture – Chimneys

Condition: Good

The chimneys are in good condition.

Architecture – Exterior Walls

Condition: Good

All appear to be in good condition, with the exception of the separation issue.

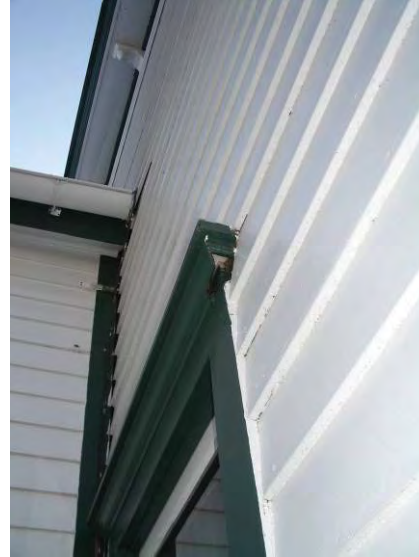


Figure 3-118: Separation of central and east wing, EMH 12/6/11

Architecture – Exterior Trim

Condition: Good

Overall, the exterior trim is in good condition with some minor joint damage at the corners.

Architecture – Porches

Condition: Good

All appear to be in good condition with the exception of the structural issues identified in the structural section.

Architecture – Windows

Condition: Good

In general, the windows lack appropriate weather-stripping and are therefore uniformly loose/leaky.

West Wing: These windows are in good condition with the exception of some wood

deterioration at two of the exterior header trims (windows 106 and 107).

Central Wing: The first and second floor wood windows are in good condition. The basement windows are in fair to poor condition. Debris has covered a portion of the exterior and has trapped moisture against the windows. The window wells themselves are small, with minimal air circulation or space for maintenance.



Figure 3-119: Basement window well condition, NAA 12/6/11

East Wing: These windows are in good condition.

Architecture – Doors

Condition: *Good*

West Wing: Screen door 101A is in good condition with the exception of missing approximately 18” of screen stop at the exterior face.

Door 101 is in good condition. However, the transom’s interior glazing compound is starting to crumble.

The interior doors are in good condition.

Central Wing: The four exterior doors and the interior doors are in good condition.

Architecture – Ceiling Finishes

Condition: *Good*

The ceiling finishes are generally in good condition. Most of the ceilings have been assumed to have been replaced during the 1983-1984 restoration work per George Fogelson’s work logs and as per data from the environmental testing.

Architecture – Interior Wall Finishes

Condition: *Fair to Good*

In general, the interior wall finishes are in good condition but there is peeling paint in dining room 104 and some instances of full height cracks, primarily around the chimneys on both the first and second floor. This condition is related to structural movement (see structural assessment).

Architecture – Interior Trim

Condition: *Good*

West Wing: The base trim (on both floors) in this portion of the Farm Home is generally in good condition with some separation and misalignment at joints and light wear and tear.

Central Wing: Dining room 104 has good base trim and wainscot with minor wear and tear. Bedroom 205’s base trim is in good condition with the exception of the missing base shoe along three of the walls. Porch 106’s base shoe is also in good condition.

East Wing: Kitchen 105 and porch 107 have base trim that is in good condition.

Architecture – Floor

Condition: *Fair to Good*

West Wing: The floors in this portion of the Farm Home are in fair to good condition. The first floor rooms show signs of moderate wear and tear beneath the carpet runners. On the second floor, bedroom 203 has a floor section along the

west wall that is heavily worn, has failing varnish and splitting floor boards.

Central Wing: Dining room 104 and porch 106 floors are in mostly good condition with some weathered paint on the porch 106 floor and minor board separation. At bedroom 204, the flooring is in fair condition with a sun-bleached area below the south window and sections of the base trim with sizeable gaps between the wall.

East Wing: Kitchen 105 floor is in good condition. Porch 107 floor, similar to porch 106's floor, has some weathered paint.

Architecture – Stairs

Condition: *Good/Poor (Code)*

West Wing: The primary staircase leading to the two bedrooms is in good condition. However, it does not have sufficient handrails and railing height at the second floor to meet current code requirements of 42".

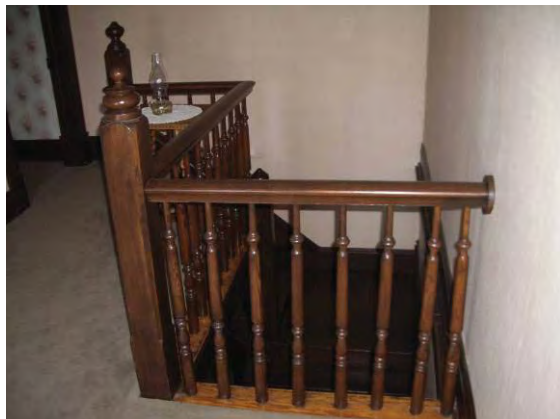


Figure 3-120: Primary staircase railing in hall 201, ABA 12/6/11

Central Wing: The stair to bedroom 205 is in good condition. However, it does not meet current code of 42" and has insufficient handrails.

The basement stair is in poor condition.

The open risers do not meet code and a tread is missing. There are no handrails on this stair.

Architecture – Code/Life Safety

Condition: *Poor*

The Farm Home does not meet the code's requirements limiting it to a one story building. The addition of a fire suppression system would allow a two-story building. NPS Director's Order 28 requires that this building be fire sprinkled.

Architecture – Accessibility

Condition: *Poor*

The reference material for accessibility is the Architectural Barriers Act Accessibility Standard for Federal Facilities (ABAAS) and American National Standards Institute (ANSI) A117.1. The current configuration does not meet accessibility standards due to the lack of handrail at the ramp (where one is required with 6" change in height), the various narrow door widths (where 32" clear is required), knob style door hardware (where accessible lever style is required) and the various changes in elevation at doors and within the house (where 1/2" max is required). The existing ramp slope is 1:12, but does not have edge protection or handrails.

Condition Assessment -- Structural

Applicable Codes:

The code references used for the Condition Assessment include the 2009 IBC, 2009 IEBC and ASCE 7-05.

Structural – Foundation

Condition: *Poor*

The perimeter foundation walls in the basement are in good condition although

they are cracked and have cracked recently due to foundation movement. The wall cracks are about 1/8" wide (following figure). The slab on grade in the basement has also cracked recently and the crack is sizable, about 1/8" to 3/16" wide.



Figure 3-121: Basement wall crack, PD 12/6/11

The shallow foundations under the west wing and kitchen 105 move with moisture changes in the soil at the depth of the foundations as discussed in the 2005 report by Quinn Evans Architects and Fitzpatrick Structural Engineering P.C. This is causing distress in the foundations and cracking in the walls of the west wing, and separation of the west wing and kitchen 105 from the center portion of the house (figures 3-122 and 123).



Figure 3-122: West wing wall cracking, second floor hall 201 adjacent to north chimney, PD 12/6/11



Figure 3-123: Separation of west wing from center of house as measured by crack monitor installed in 2004, PD 12/6/11

The brick grade beams under the west wing are in poor condition. Bricks and mortar are cracking (figures 3-124 and 125). A large section of the north grade beam is unstable when the soil dries and the grade drops. Repairs have been made and need to be made again. A brick was easily removed to provide viewing of the crawl space.



Figure 3-124: Deteriorated bricks and mortar, brick grade beam, southeast corner of west wing, PD 12/6/11



Figure 3-125: Cracking and Rowlock brick easily removed from south grade beam of west wing, PD 12/6/11

Structural – Floor Framing

Condition: Good

The first floor framing in dining room 104 is in good condition. Floor framing around the stair to the basement is in fair condition - the support posts down to the basement floor are not secured and they just rest on the slab on grade without consideration for decay. The embedded sill plate at the top of the basement wall is in fair condition but has elevated moisture content. This wood absorbs moisture from the surrounding masonry and it is not preservative treated.

First floor framing for the west wing is generally in fair condition. The crawl space under this framing is not adequately vented, but the wood joist moisture content as measured in December near the southern edge was not excessive. It's possible the mechanical ductwork in the crawl space is providing some air movement and contributing to the favorable environment. It's also likely the moisture content increases during times of wet weather. The venting should be improved. The wood sill plate or beam that bear on the brick grade beams are decayed (figure 3-126). The wood rim joist bearing on masonry is also likely decayed.



Figure 3-126: Decayed wood sill plate (or beam?) on brick grade beam, south wall west wing, PD 12/6/11

Very little of the floor framing in kitchen 105 was observed because the underside is covered with wood sheathing. Although no decay was noted in the small area that was visible, there is inadequate separation from finished grade to the bottom of the framing. The adjacent porch framing was already replaced because of decay, and decay is expected at the kitchen floor.

The second floor framing in bedroom 204 is in good condition.

The second floor framing in the west wing

could not be observed, thus its condition is unknown. No obvious signs of distress or damage were observed.

Conversations and photos provided by Lewis McKarnin indicate the joists and beam replaced at porch 107 are in good condition. The wood decking, however, is not pressure-preservative treated and decays requiring regular replacement. The 1983 porch framing at porch 106 and the front porch was not preservative treated and was not made with wood that is naturally resistant to decay. Decay is expected in this framing.

Structural – Roof Framing

Condition: *Good*

The wood roof framing that was observed is in good condition in that only minor localized dry rot or decay was observed.

Structural – Ceiling Framing

Condition: *Good*

The ceiling framing of the west wing, above bedroom 204, and over kitchen 105 are all in good condition.

Structural – Wall Framing

Condition: *Good*

The exterior wall framing is in good condition. The finishes on interior walls of the west wing are cracked and therefore in poor condition. Most of the cracking is in the upstairs hall 201, but some cracking continues in the first floor hall 101 especially above the corners of the door opening into room 102. The cracking appears to be due to foundation movement.

Structural – Lateral System

Condition: *Good*

Lateral stability of the building appears to be good. No racking of walls was observed. It's been reported the building

survived a tornado with only localized damage to the roofing and siding.

Structural – Load Requirements

Condition: *Fair*

As noted above, the minimum live load required for residential use is 40 psf and is 100 psf for public assembly use per the 2009 IBC.

The wood that was visible was visually graded in general conformance with the Southern Pine Inspection Bureau grading rules. Since only a portion of the framing was visible, a range of member capacities are presented. The range extends from a possible low grade for wood members not visible up to the actual graded value for the visible members.

Dining room 104 floor live load capacity is estimated to be between 34 and 59 psf depending on wood grade. The floor will be quite flexible at these loads. Deflections will be between 1" and 2", which far exceed the 2009 IBC requirement of span divided by 360, or 5/8".

West wing first floor live load capacity is estimated to be greater than 40 psf based on the strength of the floor joists. The joist deflection under this live load is 7/8". The floor joists are flexible and exceed the code allowable deflection limit of span/360, which is about 5/8" for this span. Floor deflections this large will likely be manifested by cracking in the plaster wall finishes. However, the finishes on this level are not cracked, so the joists have likely not experienced this live load. The live load capacity may be limited by the floor joist to rim joist connection, which is unknown because it is hidden, and by decay of wood framing in contact with the brick grade beams.

Kitchen 105 floor live load capacity is

between 35 & 60 psf based on wood species and grade used in the 1983 construction.

The live load capacity in bedroom 205 is estimated to be between 30 and 57 psf depending on wood grade and joist spacing. The floor will be quite flexible at these loads. Deflections will be between 7/8" and 1.5", which far exceed the 2009 IBC requirement of 5/8". The live load capacity of the stair to bedroom 205 is estimated to be greater than 40 psf.

The porch floor live load capacity is estimated to be greater than 40 psf based on member strengths. Connections between members will likely limit the capacity. Connections are unknown. If the joists are notched at the 6 x 6 beams as shown on the 1983 drawings, the live load capacity is approximately 28 psf, provided the wood is not weakened by decay.

In summary, the floor live load capacity is generally adequate for residential use, but not adequate for public assembly. The existing floor live load capacity is likely adequate if access is limited to small groups, such as groups of ten or fewer people. Dining room 104 and porches 106 and 107 likely do not have adequate live load capacity due to expected decay and connections. These should be rebuilt/strengthened.

The ceiling live load capacity in the west wing is estimated to be 12 psf. The deflection under this load is about 7/8" which exceeds the code limit of 1/2", so if the ceiling joists were loaded to this level the resulting deflection would likely crack the ceiling finish.

The ceiling live load capacity above bedroom 204 is controlled by the rafters as discussed above.

The ceiling live load capacity above kitchen 105 is estimated to be 60 psf.

The roof snow load capacity of the west wing is approximately 12 psf based on simplifying calculations. The snow load capacity is likely to be lower because the rafters do not align with the ceiling joists. The rafter reaction is carried by a 1 x 6 that spans to the ceiling joists. The roof framing has performed for over 100 years, so there are other load paths or the roof is able to shed snow.

The roof snow load capacity at the central wing is estimated to be between 0 and 10 psf. This load is limited by rafter bending caused by the ceiling joists being located above the rafter bearing elevation on the 2 x 4 wall. The capacity of the connections may even be less.

The roof snow load capacity of kitchen 105 is estimated to be 43 psf based on member strength. The capacity could be reduced based on the rafter-to-ceiling joist connections, which are unknown.

Roof snow load capacity of the porch roofs is unknown because the framing is unknown.

Condition Assessment -- Mechanical

Applicable Codes:

The code references used for the Condition Assessment include the 2009 IMC, 2009 IPC, NFPA and AHSRAE.

Mechanical – Condition Assessment:

Condition: *Good*

The existing main mechanical infrastructure system is in good condition overall. The existing mechanical geothermal borefield wells and piping are less than five years old. The existing heat pump in the basement is less than two

years old. There is approximately 13 years of useful life remaining on the heat pump.

The supply and return ductwork is approximately 28 years old and has a useful life of approximately ten more years.

The supply diffusers in the second floor ceiling are showing signs of rusting. There are also other indications of challenges with humidity control in the building. The wallpaper applications in the rooms are showing signs of separation from the walls. The presence of a mobile dehumidification unit indicates that the staff is being proactive at trying to maintain a consistent humidity level in the house.

The existing insulation on the ductwork in the attic has fallen off in a couple locations and is in fair to poor condition.

Plumbing – Condition Assessment:

Condition: *Good*

The existing water line into the building is in good condition and has an expected remaining useful life of 20+ years. There is no backflow preventer on the entry line which is required by the International Plumbing Code.

The existing sanitary line condition and routing is unknown below the basement floor level.

Fire Protection– Condition Assessment:

Condition: *N/A*

There is no fire protection system located in the house.

Condition Assessment -- Electrical

Applicable Codes:

- National Electrical Code 2011 (NEC 2011)

- National Electric Safety Code (NESC)
- NFPA Codes and Standards (Not including NFPA 5000)

Electrical – Infrastructure

Condition: *Fair*

Existing infrastructure appears to be sized appropriately for the loads served, equipment is in fair condition with 10-15 years of remaining useful life.



Figure 3-127: Existing main electrical panel, Jon Brooks 12/6/11

Electrical – Branch Circuits

Condition: *Fair*

Existing branch circuits are contained within conduit. Ground wires have been provided to outlets for safety. Quantity of branch circuits indicates that circuits are not likely overloaded with general purpose loads.

Electrical – General Power Outlets and Equipment

Condition: *Fair*

Outlet provisions throughout the Farm Home appear to be adequate for the purposes served.

Electrical – Lighting Systems

Condition: *Poor*

Existing interior lighting consists of step lighting at main stairs which were installed in 1984 and do not provide much illumination for emergency egress. The trim on these fixtures are covered in wallpaper which is not cut to fit properly. Three small puck style lights, two at dining room stair and one under desk at top of basement stair were more recently added with surface mounted cabling. The puck style lights do pose a potential fire risk due to proximity of adjacent wood and installation location.

Electrical – Telecommunications

Condition: *Fair*

Existing phone line and line for remote dialer are in working order. These cables are not within conduit inside the house so there is the potential for damage. The NPS standard is to locate exposed low voltage cabling in EMT conduit. The existing phone system does not currently have spare capacity for additional lines.

Electrical – Fire Alarm and Security System

Condition: *Fair*

Functionality of all devices could not be tested at time of observation. Location and aesthetics of exterior light and horn devices are obtrusive.

Electrical – Lightning Protection

Condition: *Fair*

Lightning protection systems are intact, however over time, connections deteriorate and components corrode. The integrity of the system cannot be assured. Downleads are not tight to building and are draped loosely in some locations.

Condition Assessment -- Hazardous Materials

Refer to 'Physical Description -- Hazardous Materials' for detailed descriptions of locations and conditions of hazardous materials.

Contributing Features for the Farm Home

Mass/Form. The two-story hipped massing with wings extending to the east are contributing features, as is the central hall layout and fenestration pattern.

Exterior Materials. Although much of the exterior materials have been replaced, the siding, trim (including corbel and ogee detailing) and chimneys all contribute to the significance.

Openings. The west entry, porches and window openings of the west, central and east wings are all contributing features.

Interior Materials. The original wood tongue and groove flooring is located throughout the west and central wings. Some areas of original plaster are likely but their specific locations were not identified during the site investigation. The original paint and door frame exist at the front entry, per the paint samples analyzed (Appendix F). The stair newel, railings and balustrade are all contributing features.

GARAGE

Chronology of Alterations and Use

Original Construction

The Garage was originally constructed between 1890 and 1910 in the town of Grandview and served as the barber shop and post office. In 1915, Harry S Truman re-located the building to the Truman Farm to act as a Garage for his recently purchased Stratford car.

Significant Alterations/Current condition

Little documentation exists on this out building other than historic photographs. Significant alterations to the Garage include internal stabilization in 1994 and in 2009. New stamped metal siding (as an in-kind replacement) was installed on the exterior in 2008 with new windows on east side and a new wood shingle roof. The exterior was also painted white in 2008.



Figure 3-128: Garage west elevation, ABA 12/6/11



Figure 3-129: Garage north elevation, ABA 12/6/11



Figure 3-130: "Grandview Farm: Shed," Al O'Bright, 8/83, NPS Park Records

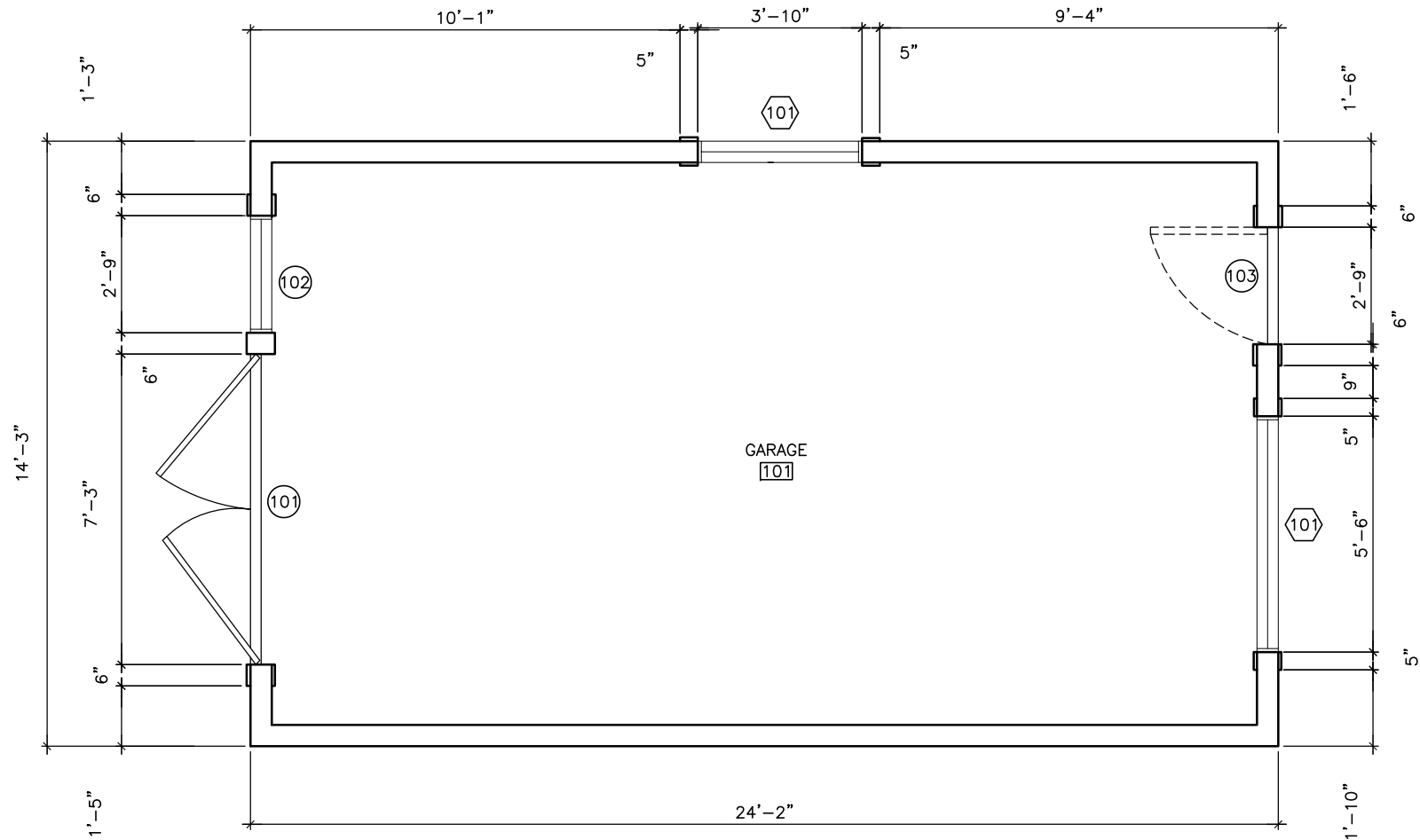


Figure 3-131: "Truman Farm Garage, facing Southwest," York, 2/84, NPS Park Records

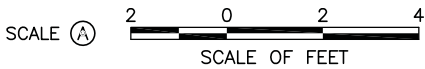
Summary of Documented Work on the Building

Date	Work Described (Source Reference)
1890-1910	What is currently the Garage is built in Grandview as a post office/barber shop. (Evans-Hatch, 2001)
1915	HST moves the post office/barber shop to the Farm to be a Garage for his car. He was elected postmaster for Grandview in 1914. (Evans-Hatch, 2001)
1983	Jackson County purchases the remaining Truman family home (5.3 acres) from the Truman family. (Harry S Truman Library and Museum, legal record on file)
1985, Feb	Truman Farm Garage entered into the National Register of Historic Places and was included as part of the Farm Home's National Historic Landmark status. (NPS NHL, 1985)
1993, Dec	Public Law 103-184, Act of Congress, added Truman Farm to the Harry S Truman National Historic Site. (NPS GMP, 1999)
1994, April	Jackson County conveyed the Truman Farm deed to the federal government and the NPS assumed ownership of the property. (HSTR records)
1994	Garage stabilized internally with cabling. (HSTR maintenance records)
2003-2009	Funds received for additional stabilization (2003); stabilization process completed (2009). (HSTR maintenance records)
2008	The NPS stabilized the structure and installed new metal in-kind siding, east windows and wood shake roof. The exterior was painted white. (HSTR maintenance records)

11/30/12 14:14 ADRIENWANTONUCCI R18 N:\M PROJECTS\2011\2011400 TRUMAN FARM HSR\BIM\ACAD\ARCH\08 OF 11_FL PLAN - GARAGE_REV.DWG XREFS: ..\BASE\VA-GARAGESKETCH.DWG;

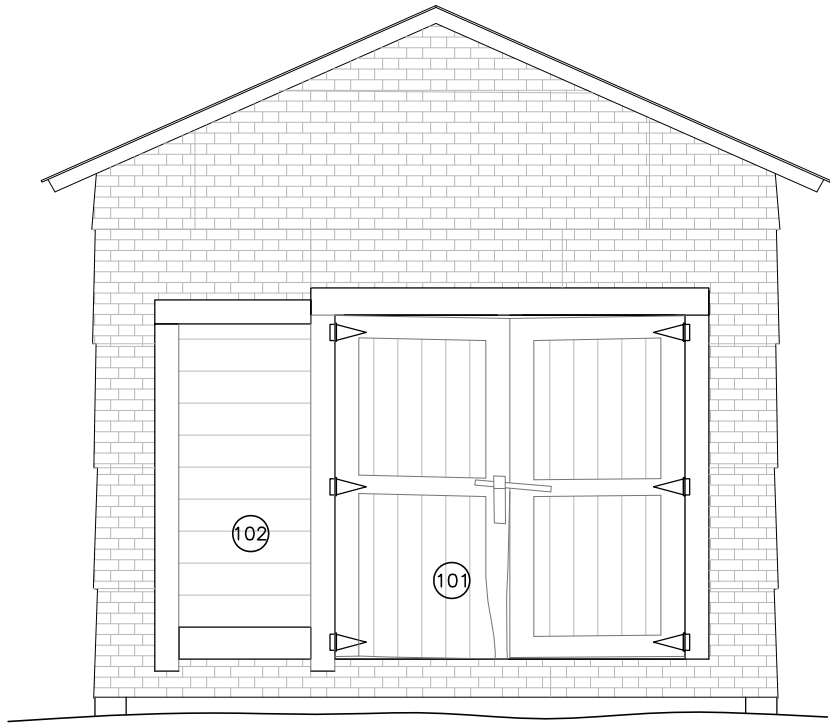


1 GARAGE - PLAN
8 11 SCALE (A)



NOVEMBER 2012	TITLE OF PROJECT TRUMAN FARM HISTORIC STRUCTURES REPORT		
UNITED STATES DEPARTMENT OF THE INTERIOR TRUMAN FARM NATIONAL HISTORIC SITE	TITLE OF DRAWING GARAGE PLAN		
EXISTING CONDITION DRAWINGS SHEET 8 OF 11	NAME OF PARK TRUMAN FARM - HARRY S TRUMAN NATIONAL HISTORIC SITE		
	REGION MIDWEST	COUNTY JACKSON	STATE MISSOURI

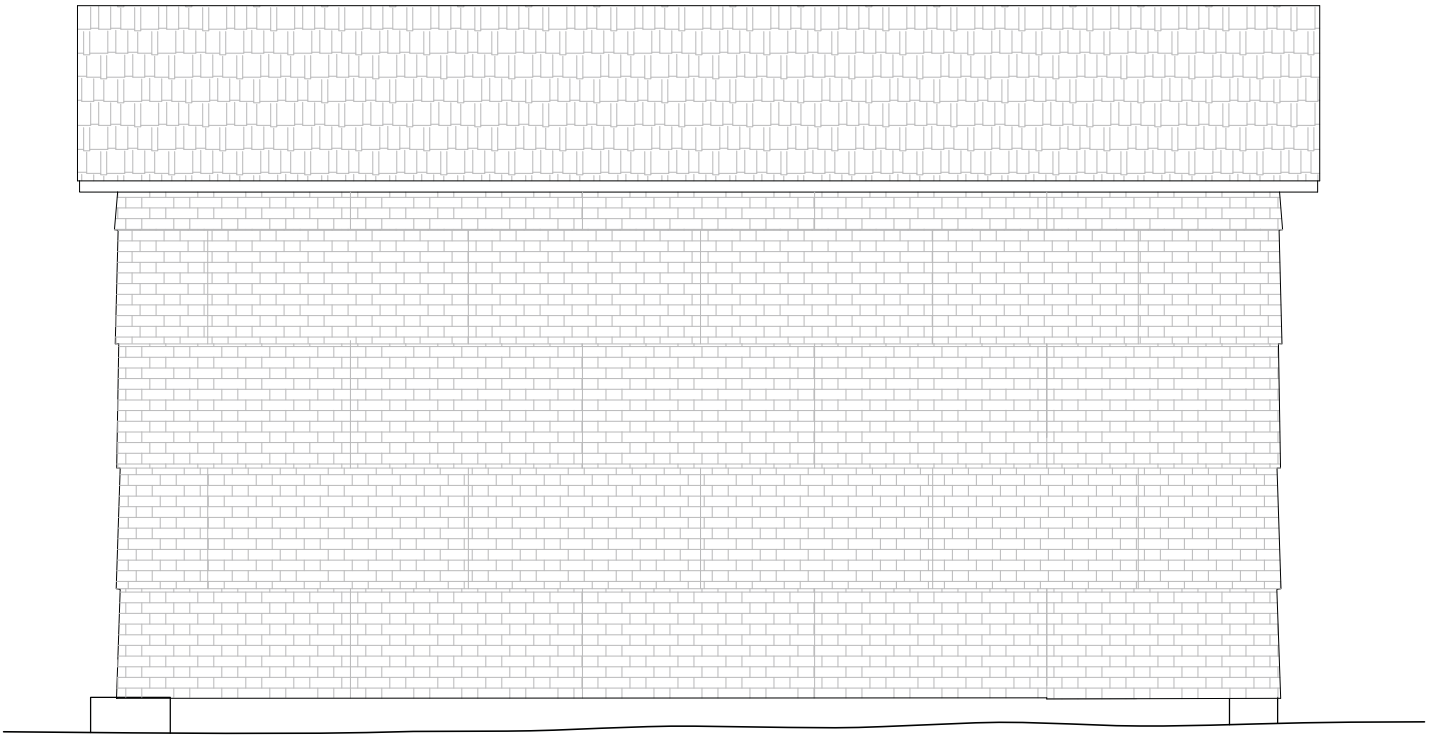
12/3/12 13:49 JORENENANTONUCI R18 N:\A PROJECTS\2011\2011400 TRUMAN FARM HSR\BIM\ACAD\ARCH\09 OF 11_ELEVATION - GARAGE_REV/DWG XREFS: \BASE\VA-GARAGES\ETCH.DWG;



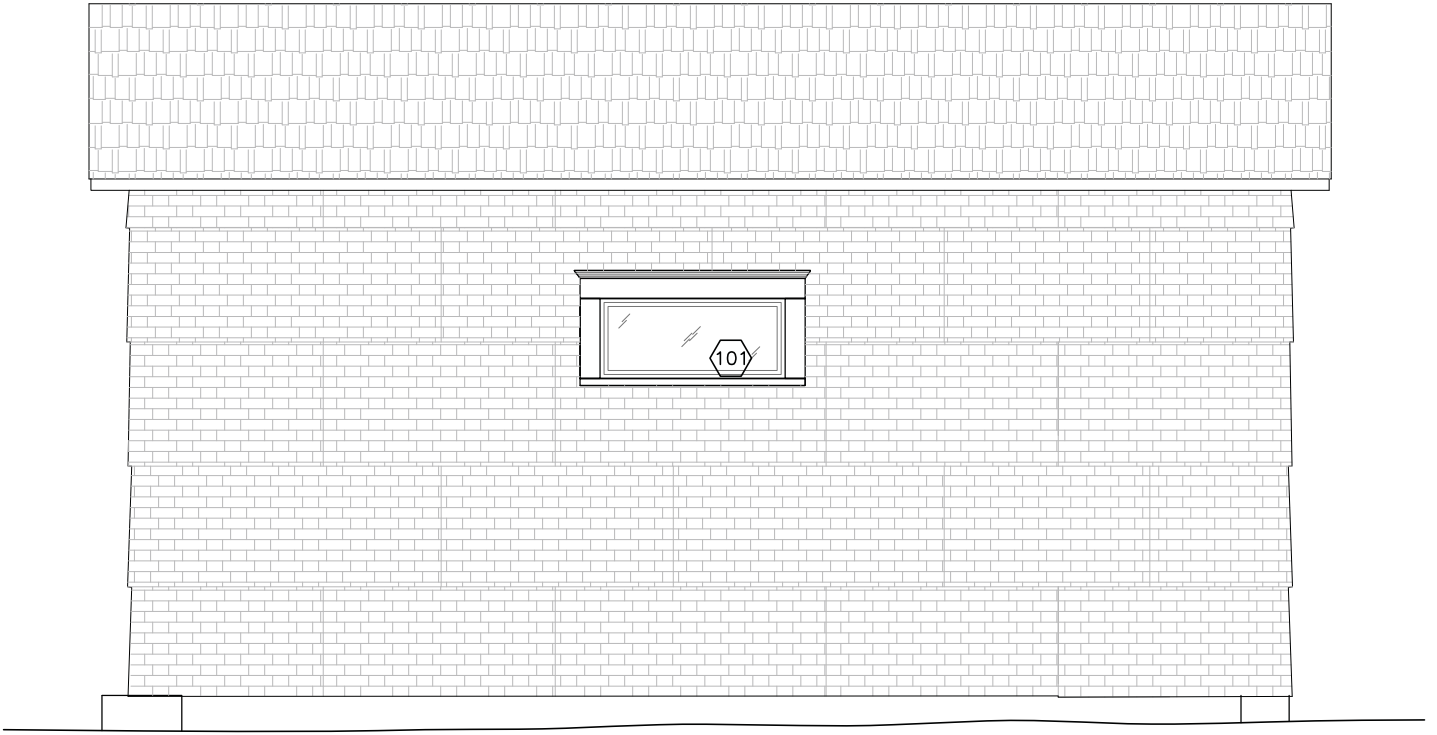
1 GARAGE – WEST ELEVATION
9 | 11 SCALE (A)



3 GARAGE – EAST ELEVATION
9 | 11 SCALE (A)



2 GARAGE – SOUTH ELEVATION
9 | 11 SCALE (A)



4 GARAGE – NORTH ELEVATION
9 | 11 SCALE (A)

SCALE (A) 2 0 2 4
SCALE OF FEET

NOVEMBER 2012	TITLE OF PROJECT TRUMAN FARM HISTORIC STRUCTURES REPORT		
UNITED STATES DEPARTMENT OF THE INTERIOR TRUMAN FARM NATIONAL HISTORIC SITE	TITLE OF DRAWING GARAGE ELEVATIONS		
EXISTING CONDITION DRAWINGS SHEET 9 OF 11	NAME OF PARK TRUMAN FARM - HARRY S TRUMAN NATIONAL HISTORIC SITE		
	REGION MIDWEST	COUNTY JACKSON	STATE MISSOURI

General Existing Conditions

The Garage is a simple rectangular wood frame gable structure. What appears to have been the original commercial front faces east. The foundation is composed of six helical piles anchored into the ground. The 2008 stabilization provided new helical piles for the building.

Existing Conditions -- Architecture

Architecture – Roof

The existing roof consists of wood shingles with a 5" exposure. The eave is boxed in with a solid wood soffit and a 1 x 4 fascia, all painted white. Park records indicate it was replaced in 1996 and again in 2008.²⁹ Historic photos indicate the original roofing was wood shingles.



Figure 3-132: Underside of Garage roof, ABA 12/6/11

Architecture – Exterior Walls

Exterior walls consist of nominal 2 x 4 framing with 1 x 12 board sheathing and metal stamped siding to replicate brick. The pattern of the stamped metal is of running bond and is 2'-4" x 4'-8" sheets, painted white. The existing siding is a reproduction of original stamped metal siding, which was replaced in 2008. Park staff report the original stamped metal siding is currently in park storage. There is a flashing drip edge at the base of the siding.

²⁹ From sketch "Farm Home Garage Roof," dated 4/28-5/2/95, on file at HSTR Park Headquarters and Park Records from 2008.



Figure 3-133: Exterior of Garage, east elevation, ABA 12/6/11

Architecture – Exterior Trim

There is no exterior trim on the building with the exception of the east window and door trim discussed in the other sections.

Architecture – Windows

The Garage has three extant windows. One is located on the north elevation and the other two are on the east elevation. One of the east windows is a transom above the infilled door (see door description below). The other east window has a divided lite transom but has been infilled with wood shingles below. Per park staff, the north window is original. All three windows are fixed, though the large window on the east elevation has remnants of historic thumb turn locks, and were replaced in 2008.

Window trim consists of simple 1x wood surrounds with header trim that has an ogee profile that continues over the door on the east elevation. All trim is painted white.



Figure 3-134: East elevation, windows and door, ABA 12/6/11

Architecture – Doors

The Garage has three doors. There is a pair of wood stile and rail swing doors located on the west elevation. Both doors are barn style doors with a padlock securing them closed and modern hardware. Next to the barn doors is a 2'-9" wide single door now infilled with 1x boards.

The east elevation also has a single door that has been infilled with 1x boards. It is 2'-9" wide with a transom above.

The exterior trim around the doors is 1 x 5 boards, painted white. The door header trim on the east elevation has an ogee profile that continues over the windows.



Figure 3-135: Exterior of Garage, west elevation and barn doors, ABA 12/6/11

Architecture – Interior Wall Finishes

Portions of the original plaster are attached to the remaining lath along the wood frame walls. Plaster sample number 5 was taken of this wall plaster and showed a skim coat of lime and a plaster composed of horse hair (see Appendix F for in-depth analysis of the results).



Figure 3-136: Interior Garage wall finishes, ABA 12/6/11

Architecture – Ceiling Finishes

The ceiling retains small areas of the original lath. Remnants of plaster remain (typically between the lath and roof framing).



Figure 3-137: Interior Garage ceiling and roof structure, ABA 12/6/11

Architecture – Floor

The tongue and groove wood flooring runs east-west and shows obvious signs of large portions having been replaced. It is assured this floor is not original due to its previous use for car storage.



Figure 3-138: Interior Garage tongue and groove flooring, ABA 12/6/11

Architecture – Code/Life Safety

The Garage would be best classified as a “U” (Utility) Occupancy and its wood frame construction is a type V-B (non-rated) Rating. Per the 2009 IBC, 5,500 sf and one-story is allowable. The Garage is 340 sf.

Architecture – Accessibility

This building is not currently accessible. It is currently precluded by the change between grade elevation and finish floor (13 ½”) and that none of the doors have accessible lever style hardware.

Existing Conditions -- Structural

Structural – Foundation

The Garage was stabilized during the summer of 2008. The construction documents are dated June 19, 2003. The

Garage is now supported on six helical piles (Chance C150-0132). The helical piers are unfinished steel and show signs of surface rust (figure 3-139).



Figure 3-139: Helical pile, PD 12/6/11

Structural – Floor Framing

The floor framing was rebuilt as part of the stabilization. Unless noted otherwise all the framing described in this paragraph is modern material installed as part of the stabilization project. The floor framing consists of 3 built-up beams each consisting of 4-2x12s (nominal) that are ganged together and span north-south. Although the 2003 construction documents require the framing to be pressure-preservative treated, it could not be confirmed that the 4-2x12 members closest to the ground were in fact treated. No tags were found and the members do not have a green color like the other adjacent preservative treated members. The built-up beams bear on steel U bracket on the helical piers. The built-up beams cantilever a foot or two over the helical pier and support a nominal 2x12 rim joist that spans east-west approximately 10' to the adjacent built-up beam. On the south side the rim joist is connected to the built-up beam with steel angles (approximately L3x3x3/8 x 0'-11" long, figure 3-x) that connect to the beams with 3 approximately 3/8" diameter

thru bolts and connect to the rim joist with 3 approximately 3/8" diameter lag screws. On the north side the rim joist is continuous and rests on top of the built-up beams. The rim joists support 2x12 floor joists that span north-south approximately 14' between rim joists. A 3/4" solid tongue and groove (T&G) flooring spans 16" to the 2x12 joists. The T&G flooring is about 50% original reused wood and 50% new wood.



Figure 3-140: Angle connecting rim joist to built-up beam, PD 12/6/11

The floor joists between the last built-up beam and the east wall are supported by a 2'-6" length of rim joist on the south side. This rim joist cantilevers off the steel angle connection at the built-up beam. This construction is very weak. A stone has been placed under the corner of the Garage and offers support for the weak framing (following figure). The same condition occurs at the southwest corner.



Figure 3-141: Stone supporting Garage corner, PD 12/6/11

The floor framing is near finished grade. Finished grade is within about 6" at the west end and slopes to within about 12" at the east end.

This construction does not match that shown on the 2003 construction drawings, which showed the rim joist being 3-2x12's (instead of one installed) and shows the rim joist resting on top of the built-ups beams (instead of connected with the steel angle for the south rim joist). The as-built construction is substantially weaker than that shown on the drawings.

Structural – Roof Framing

The roof framing consists of nominal 2x4 rafters spaced at about 24" o.c. The rafters span north-south approximately 7' (horizontal dimension) between the exterior wall and the ridge where they abut the rafter from the opposite slope. The rafters are sheathed with nominal 1x4 solid wood sheathing spaced at approximately 7" o.c. Approximately 50% of the sheathing was replaced during the 2008 stabilization. The rafters do not align with the ceiling joists.

Many rafters have been replaced with new 2x construction and many 1x sheathing boards were replaced with new as part of the stabilization project.

Structural – Ceiling Framing

The Garage does not have a finished ceiling. Original wood lath is still present in most areas, but the lath is bare. The ceiling joists are nominal 2x4s spaced at 16" o.c. and span approximately 14' between the north and south exterior walls. The ceiling joists do not align with the rafters.

Several new ceiling joists have replaced the original members. The new members are 2x6 Douglas-Fir-Larch.

The ceiling joists and rafters are toe nailed to the wall top plate.

Structural – Wall Framing

The exterior walls are framed with the original nominal 2x4 studs at 16"o.c. Exterior walls are sheathed with wood lath on the inside and nominal 1x12 sheathing on the outside. The sheathing is not spaced. Some of the original plaster remains and is held to the lath with metal bolts and washers that were installed as part of the 2008 stabilization. The exterior finish is metal siding stamped with a brick pattern. The gable end walls with large openings are also framed with nominal 2x4 studs. King studs and headers are generally absent or if present are minimal.

The wall studs run past the face of the floor rim joist and are fastened to the rim joist. The size and number of fasteners are unknown.

Structural – Lateral System

Lateral stability for the building is provided by the exterior walls, wall sheathing, exterior wall finish, and plaster. This system is inherently weak and flexible and does not comply with current codes. The large openings on the east and west gable ends further

weaken the building's north-south lateral strength.

The 2008 stabilization drawings specified that three lines of bracing were to be added to the interior of the building. These were not installed.

Structural – Load Requirements

The required floor live load capacity will depend on the intended use of the building. Per the 2009 IBC the live load is 40 psf for storage of cars, and 100 psf for use as a public gathering space. Floors supporting cars also need to resist the concentrated loads from the tires. The 2009 IBC prescribes this as a 3,000# point load applied over a 4.5 inch x 4.5 inch area. This load is based on a fully loaded 9 passenger Sports Utility Vehicle, which is unlikely to be placed in this building.

The required ceiling live load capacity is 10 psf based on the 2009 IBC and 10 psf total load based on an older code (1946 UBC).

The roof snow load required for the City of Grandview, Missouri is 20 psf if the building is occupied and 16 psf if it is not.

Existing Conditions – Mechanical

Mechanical Physical Description

None.

Plumbing Physical Description

None.

Fire Protection Physical Description

None.

Existing Conditions -- Electrical

Electrical – Infrastructure, Branch Circuits, General Power Outlets and Equipment, Lighting Systems, Telecommunications,

Fire Alarm and Security System, Lightning protection

No electrical systems exist on this building. It appears that there was electrical connected to this building near its original construction as is evidenced by the existing porcelain knob and tube connectors located under the roof eave above the Garage entry door.



Figure 3-142: Garage Building Knob and Tube Connectors, Jon Brooks 12/6/11

Physical Description -- Hazardous Materials

a) Lead Containing Paint

The December 2011 Lead-containing paint (LCP) inspection included a visual inspection and sampling of the Garage structure. On December 6, 2011 paint chip sample was collected from the exterior of the Garage by Landmark Environmental, Inc. and submitted for laboratory analysis. The sample was analyzed at an accredited independent laboratory, Reservoirs Environmental, Inc., which is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental samples by the American Industrial Hygiene Association, Lab ID 101533 - Accreditation Certificate #480. Reservoirs analyzed the sample(s) using Atomic Absorption Spectroscopy (AAS) / Atomic Emission Spectroscopy - Inductively Coupled Plasma (AES-ICP)

per using method USEPA SW846 3050B / AA (7420).

- i. Paints with greater than 0.5 percent by weight lead (lead based paint) are identified at the following building components.

- 1. Exterior paint on Garage wood siding and trim painted white.

The identified lead based paint (LBP) was observed to be in fair to good condition. Loose/flaking LCP is not identified on the exterior or interior of the Garage.

b) Lead Dust

The interior of the Garage was not painted and loose and flaking paint or dusts with paint debris were not visually identified. Wipe sampling for lead dust analysis was not conducted in the Garage because identified exterior paints were in fair to good condition.

c) Lead in Soils

Areas of the surface soils adjacent to the Garage structure were not observed to have LCP debris and therefore no soils samples were collected.

d) Asbestos

An asbestos-containing material (ACM) Survey was conducted by Landmark Environmental, Inc. on December 6, 2011. The sampling was conducted according to U.S. Environmental Protection Agency (EPA) Asbestos Hazard and Emergency Response Act (AHERA) and U.S. Occupational Safety and Health Administration (OSHA) Chapter 29 Code of Federal Regulations (CFR) 1926.1101 requirements, as well as generally accepted industry standards. A total of two samples were collected in the Garage.

Samples were collected from two types of suspected ACMs, including remnant wall plaster and wall paper.

The samples were analyzed at Reservoirs Environmental, Inc., using Polarized Light Microscopy (PLM). Of the suspect ACMs that were sampled, no materials were confirmed to be ACM by laboratory analysis.

e) *Mold*

Inspections of the structure were performed to identify the readily ascertainable visual extent of mold growth. Moisture testing in building materials was not performed nor was sampling of building materials performed for microbial analysis. Mold was not visually identified.

Summary of Hazardous Material Findings

Building Number	LCS ID 70145
Building Name	Truman Farm Garage
>1% Asbestos Confirmed	No
Detectable Lead in Paint Confirmed	Yes Exterior Painted Surfaces
Detectable Lead in Paint greater than 0.5% by weight (LBP)	Yes Exterior Painted Surfaces
Lead Dusts	None observed no samples collected
Lead Debris on Soils	None Observed no samples collected
Other Hazardous Materials Observed	No
Visual Mold Observed	No
Indication of Buried Tanks	No

General Condition Assessment

Overall, the Garage is in fair condition due mainly to the structural issues. The lateral system is in severely poor condition. The recent stabilization drawings were not followed and the resulting load capacity is far below what was designed.

When the proposed use of the building is determined (i.e. is the public to access the interior?), the assessment can better inform the treatment recommendations.

Condition Assessment -- Architecture

Architecture – Roof

Condition: Good

The roofing is in good condition.

Architecture – Exterior Walls

Condition: Good

The walls are in good condition with the exception of the structural mitigation required.

Architecture – Exterior Trim

Condition: N/A

Architecture – Windows

Condition: Good

The three extant windows are in good condition; however the shingle infill panel is poor.

Architecture – Doors

Condition: Fair/Poor

The barn doors are in fair condition with weathered paint and misaligned hinges that affect the angle in which the doors operate. The 1x wood infill of missing doors is poor.

Architecture – Interior Wall Finishes

Condition: Poor

The remaining lath and plaster are in poor condition.

Architecture – Ceiling Finish

Condition: Poor

The remaining lath and minimal plaster are in poor condition.

Architecture – Interior Trim

Condition: N/A

Architecture – Floor

Condition: Fair

There historic wood floor is heavily worn and stained; it is clear to see where newer flooring has been installed.

Architecture – Code/Life Safety

Condition: Good

The Garage falls within the Type U/V-B code limitations. However, if the park was to consider changing its use beyond storage and if the public was to enter the building, either would trigger the need for code upgrades and a more detailed analysis would be required.

Architecture – Accessibility

Condition: Poor

The building is currently not accessible.

Condition Assessment – Structural

Applicable Codes:

The code references used for the Condition Assessment include the 2009 IBC, 2009 IEBC and ASCE 7-05, Minimum Design Loads for Buildings and Other Structures.

Structural – Foundation

Condition: Good

The six helical piles appear to be performing fine. The piles are not galvanized and show signs of rusting. It's unknown whether the piles were designed to accommodate corrosion.

Structural – Floor Framing

Condition: Good

The rebuilt floor framing is in good condition owing to its recent construction. Pressure-preservative treated lumber was specified which is appropriate due to the close proximity of finished grade to the underside of the framing, but the built-up beams appear to be non-treated.

Structural – Roof Framing

Condition: Fair

The wood roof framing is in fair condition in that no dry rot or decay was observed. Most of the damaged members were replaced with new framing during the recent stabilization project.

Structural – Ceiling Framing

Condition: Fair

The wood ceiling framing is in fair condition in that no dry rot or decay was observed. Most of the damaged members were replaced with new framing during the recent stabilization project.

Structural – Wall Framing

Condition: Fair

The exterior wall framing is in fair condition. Most of the damaged members were replaced with new framing during the recent renovation, but the ends of the wall studs and many other members have some damage. The south top plate is severely damaged by insects.

Structural – Lateral System

Condition: Severe

Lateral stability of the building is very, very weak and the building is in danger of collapsing. The large openings in the gable end walls severely weaken the racking resistance of these walls. We understand the gable end walls were severely racked prior to the recent stabilization. The walls were

straightened, but the lateral bracing recommended in the 2008 drawings has not been installed.

Structural – Load Requirements

Condition: Severe

The as-built framing relies on the steel angle connection between the south rim joist and built-up beam to support the floor, wall, and roof dead load as well as floor live load and roof snow load. The total load capacity of this connection is estimated to be less than 600#. The dead load of the floor, wall, and roof exceed this capacity. Any live load on the floor or snow load will further overstress this connection. The live load capacity of the end 3' at the east and west ends is also severely below requirements, but the added stones supporting the corners have improved the capacity.

The ¾" wood flooring is not adequate to support the wheel loads of a modern heavy car.

The ceiling live load capacity is estimated to be greater than 10 psf based on calculation of the wood members. However, the deflection under a load of 10 psf is about 1". The code would limit the deflection to no more than ½" to prevent damage to plaster ceilings. As noted above, the ceiling live load capacity is limited by the rim joist connection to the built-up floor beam.

The roof snow load capacity is 14 psf based on calculations of the roof members, which is less than the 20 psf required. The snow load capacity is further limited by the south rim joist connection to the built-up floor beam.

The roof is not adequately anchored to the walls for uplift due to wind.

Condition Assessment – Mechanical

Mechanical – Condition Assessment:

Condition: *N/A*

Plumbing – Condition Assessment:

Condition: *N/A*

Fire Protection – Condition Assessment:

Condition: *N/A*

Condition Assessment – Electrical

Electrical – Infrastructure, Branch Circuits, General Power Outlets and Equipment, Lighting Systems, Telecommunications, Fire Alarm and Security System, Lightning protection

Condition: *N/A*

Contributing Features for the Garage

Mass/Form. The original form has not been altered and remains historically significant with its simple gable form, storefront openings to the east and utilitarian openings to the west. The open layout of the interior remains.

Exterior Materials. The stamped metal siding has been replicated to match the historic metal siding.

Openings. The window and door openings are historic and contribute to the significance and history of the Garage, including the orientation of them (retail versus Garage use).

Interior Materials. The extant plaster walls and ceilings are contributing and should be preserved.

POULTRY HOUSE

Chronology of Alterations and Use

Original Construction

The Poultry House was built around 1900 and was originally located north of the Farm house. The structure was moved between 1917 and 1944 to its present location (refer to Chapter 2, Period Plans for location information).

Significant Alterations / Current condition

Significant alterations to the Poultry House include the move it made between 1917 and 1944 and the 2005 NPS roof replacement.



Figure 3-143: Poultry House west elevation, ABA 12/6/11



Figure 3-144: Poultry House north elevation, ABA 12/6/11



Figure 3-145: "Grandview Farm: Chicken Coop," Al O'Bright, 8/83, NPS Park Records

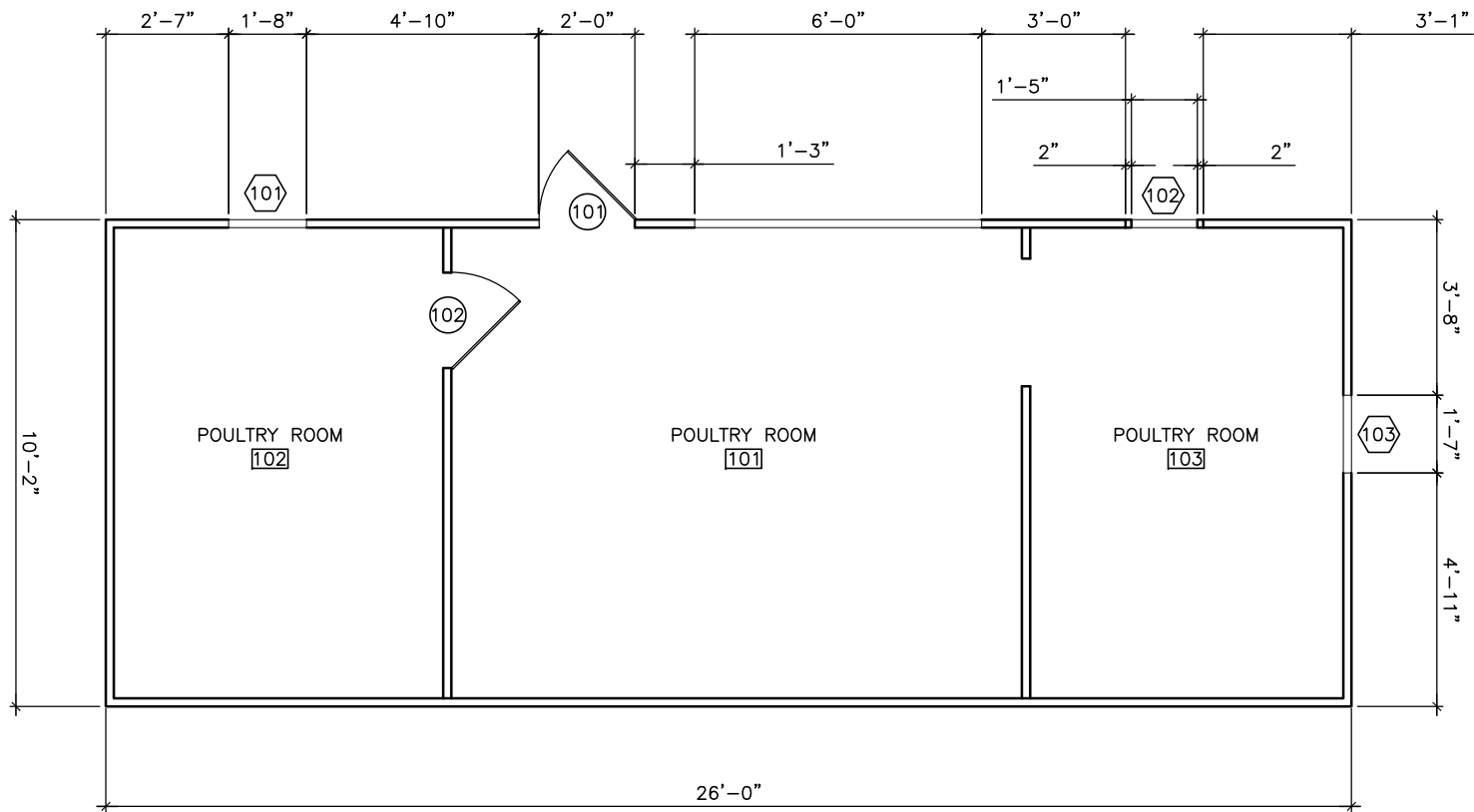


Figure 3-146: "Truman Farm Chicken Coop, facing N/E," York, 2/84, NPS Park Records

Summary of Documented Work on the Building

Date	Work Described (Source Reference)
c.1900	The Poultry House was built north of the Farm Home. (Bray, 1983)
1917-1944	Poultry House moved from the north side of the house to the east side. (U.S. Soil Conservation Service, aerial photograph, 1944)
1983	Jackson County purchases the remaining Truman family home (5.3 acres) from the Truman family. (Harry S Truman Library and Museum, legal record on file)
1985, Feb	Truman Farm Poultry House entered into the National Register of Historic Places and was included as part of the Farm Home's National Historic Landmark status. (NPS NHL, 1985)
1993, Dec	Public Law 103-184, Act of Congress, added Truman Farm to the Harry S Truman National Historic Site. (NPS GMP, 1999)
1994, April	Jackson County conveyed the Truman Farm deed to the federal government and the NPS assumed ownership of the property. (HSTR records)
2005	The park woodcrafter replaced rough sawn rafters and roof sheathing in-kind in the Poultry House and replaced roofing using new metal sheets as well as original roofing material. (HSTR maintenance records)

11/30/12 14:23 ADRIENNEANTONUCCI R18 N:\VA PROJECTS\2011\2011400 TRUMAN FARM HSR\BIM\ACAD\ARCH\10 OF 11_FL PLAN - POULTRY_REV.DWG XREFS: ..\BASE\VA-POULTRY\SCHELDWG;



1
10 11

POULTRY HOUSE - PLAN

SCALE (A)

SCALE (A)

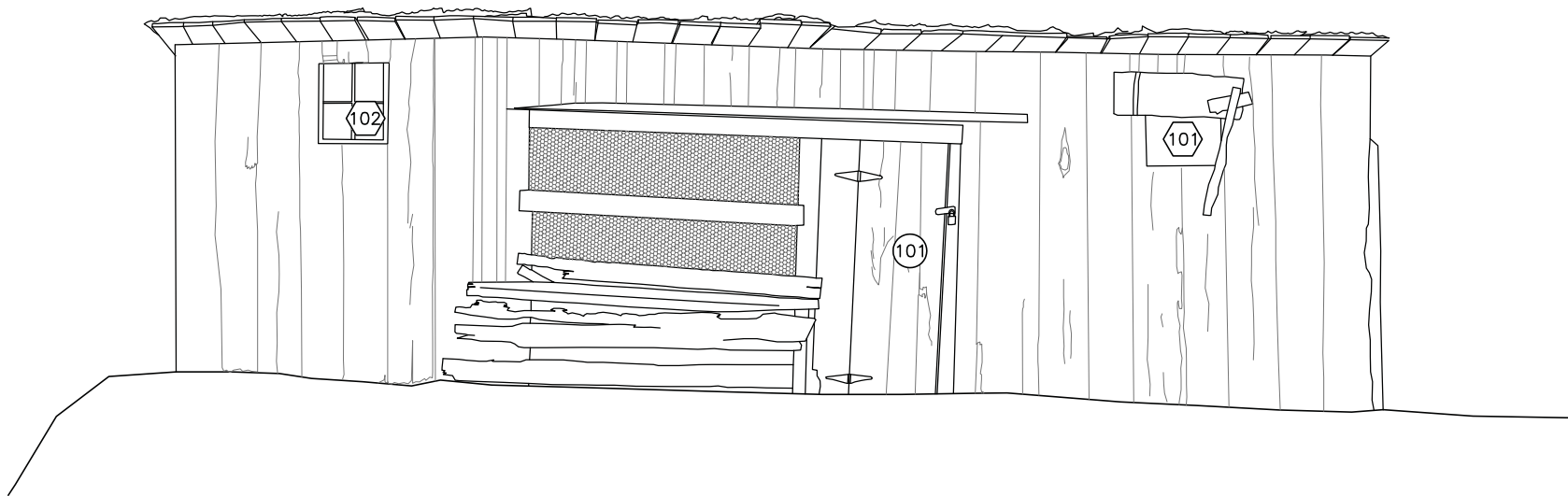


SCALE OF FEET

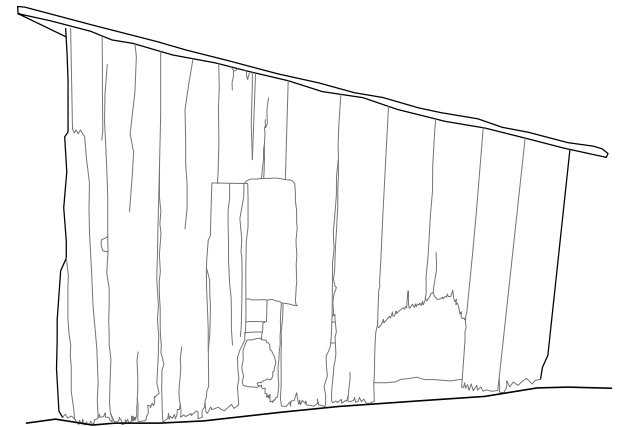


NOVEMBER 2012	TITLE OF PROJECT TRUMAN FARM HISTORIC STRUCTURES REPORT
UNITED STATES DEPARTMENT OF THE INTERIOR TRUMAN FARM NATIONAL HISTORIC SITE	TITLE OF DRAWING POULTRY HOUSE FLOOR PLAN
EXISTING CONDITION DRAWINGS SHEET 10 OF 11	NAME OF PARK TRUMAN FARM - HARRY S TRUMAN NATIONAL HISTORIC SITE
	REGION MIDWEST
	COUNTY JACKSON
	STATE MISSOURI

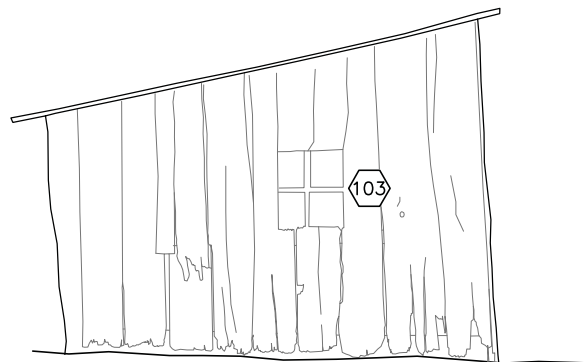
11/25/12 14:24 ADRIENNEANTONUCI R18 N:\VA PROJECTS\2011\2011400 TRUMAN FARM HSR\BIM\ACAD\ARCH\11 OF 11_ELEVATION - POULTRY_REV.DWG XREFS: ..\BASE\VA-POULTRY\SKETCH.DWG.



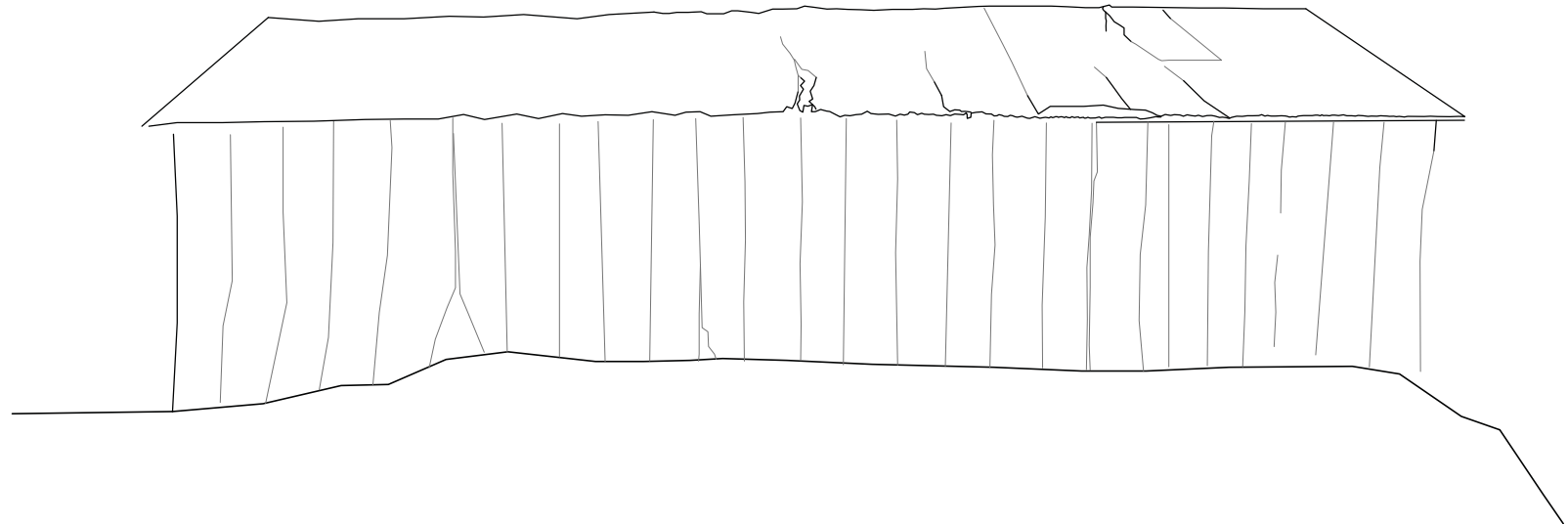
1 POULTRY HOUSE – WEST ELEVATION
11/11 SCALE (A)



2 POULTRY HOUSE – SOUTH ELEVATION
11/11 SCALE (A)



3 POULTRY HOUSE – NORTH ELEVATION
11/11 SCALE (A)



4 POULTRY HOUSE – EAST ELEVATION
11/11 SCALE (A)

SCALE (A) 2 0 2 4
SCALE OF FEET

NOVEMBER 2012	TITLE OF PROJECT TRUMAN FARM HISTORIC STRUCTURES REPORT
UNITED STATES DEPARTMENT OF THE INTERIOR TRUMAN FARM NATIONAL HISTORIC SITE	TITLE OF DRAWING POULTRY HOUSE ELEVATIONS
EXISTING CONDITION DRAWINGS SHEET 11 OF 11	NAME OF PARK TRUMAN FARM - HARRY S TRUMAN NATIONAL HISTORIC SITE
	REGION MIDWEST
	COUNTY JACKSON
	STATE MISSOURI

General Existing Conditions

The Poultry House is a simple utilitarian structure oriented to the west. It is a wood frame structure with a corrugated metal panel shed roof shedding to the east. Its rectangular footprint is subdivided internally into thirds. Currently, the interior is inaccessible.

Existing Conditions -- Architecture

Architecture – Roof

The roof consists of corrugated metal panels (1'-10" wide) replaced in 2005, per park records. Sheathing is 1x10 boards with tar paper.



Figure 3-147: Poultry House east elevation, ABA 12/6/11

Architecture – Exterior Walls

The Poultry House has board (10 ¼" wide) and batten (2 ¼" wide) siding. The west wall is approximately 3" out of plumb per field documentation. There are various gaps and holes in the boards.



Figure 3-148: Poultry House west elevation, ABA 12/6/11

Architecture – Windows/Openings

There are four openings in this structure – three are approximately 1'-10" x 1'-5" and the remaining opening is a large expanse measuring 5'-11" x 5'-9 ½". None of the openings have glazing but all have chicken wire covering most of the openings. Two of the windows have muntins (north window on the west elevation and window on the north elevation).



Figure 3-149: Poultry House north elevation, ABA 12/6/11

Architecture – Doors/Openings

The one door on the west elevation is comprised of vertical wood boards and has a 2'-0" wide clearance. The door is currently boarded over at the top. It has two diamond hinges and a padlock. The adjacent opening is 6'-0" wide x 5'-9" high with no door – only various boards nailed in place to block access. On the interior, there are door openings on the interior but no visible doors.



Figure 3-150: View of the interior, looking towards the north portion, ABA 12/6/11

Architecture – Interior Wall Finishes

Two interior wall divisions were constructed and are simple board and batten walls that divide the interior of the structure into approximately equal thirds.

Architecture – Floor

Approximately 2/3 of the interior of the structure has a concrete pad. The concrete pad extends past the south elevation of the structure to provide an exterior pad area. The one portion of the structure (northern portion) which does not have the concrete floor has a packed earth floor.



Figure 3-151: Poultry House south elevation and concrete floor extension, ABA 12/6/11

Architecture – Code/Life Safety

The Poultry House would be best classified as a “U” (Utility) Occupancy and its wood frame construction is a type V-B (non-rated) Rating. Per the 2009 IBC, 5,500 sf and one-story is allowable. The Poultry House is 260 sf. The opening to the structure is not currently code compliant (6'-0" w x 5'-9" h) with various boards preventing access.

Architecture – Accessibility

This building is currently not accessible due to it not having an accessible route, small opening size and elevation changes.

Existing Conditions -- Structural

Structural – Foundation

The building does not appear to have a foundation. The wood members appear to be embedded in the ground or simply resting on the ground.



Figure 3-152: Bottom of wall showing decay and no foundation, PD 12/6/11

Structural – Floor Framing

The Poultry House has a dirt floor in the north one-third section and a thin concrete slab on grade in the middle and south sections.

Structural – Roof Framing

The roof framing consists of nominal

1x12 sheathing boards spanning from the east wall to the west and supported by 2x4 purlins placed a 1/3 points (approximately) of the sheathing span. The sheathing overhangs the walls by about 9 inches. The roofing is corrugated steel. The sheathing was replaced in 2005 by Lewis McKarnin, NPS Wood Crafter.

Structural – Wall Framing

The exterior and interior walls of the entire structure are framed with 1x12 nominal vertical sheathing boards. 2x nominal skirt boards are provided at ground level to support the walls.

Structural – Lateral System

Lateral stability for the building is provided by the exterior and interior walls.

Structural – Load Requirements

The roof snow load required per the city of Grandview, Missouri is 16 psf for this unoccupied, agricultural structure.

Existing Conditions -- Mechanical

There are no mechanical systems in the Poultry House.

Plumbing Physical Description

There are no plumbing systems in the Poultry House.

Fire Protection Physical Description

There are no fire protection systems in the Poultry House.

Existing Conditions -- Electrical

Electrical – Infrastructure, Branch Circuits, General Power Outlets and Equipment, Lighting Systems, Telecommunications, Fire Alarm and Security System, Lightning protection

No electrical systems exist on this building.

General Condition Assessment

Overall, the Poultry House is in very poor condition and is in danger of collapsing. Determining the park's proposed use of the building (a protected "ruin" or if the public or staff would be able to enter) will better inform the assessment and treatment recommendations of this building.

Condition Assessment -- Architecture

Architecture – Roof

Condition: *Poor*

The corrugated metal panel roof is weathered and rusted.

Architecture – Walls

Condition: *Poor*

The west wall protrudes by 3" and there are many gaps/holes in the siding. Refer also to structural.

Architecture – Windows/Openings

Condition: *Poor*

The window openings are in poor condition with dry rot. Without glazing, there is no protection of the building from weather and vermin.

Architecture – Doors/Openings

Condition: *Poor*

The only entrance to the interior has been boarded over. The adjacent large opening has portions of boards nailed to the bottom.

Architecture – Interior Walls

Condition: *Poor*

The interior walls are in poor condition, as viewed from the exterior.

Architecture – Floor

Condition: *Poor*

The concrete pad is in poor condition as it has large cracks running throughout.

Architecture – Code/Life Safety

Condition: *Poor*

The Poultry House falls within the code limitations for square footage and height. Once the final use is determined by the park, a more detailed code analysis can be performed utilizing the IEBC.

Architecture – Accessibility

Condition: *Poor*

This building is not accessible.

Condition Assessment – Structural

Applicable Codes:

The code references used for the Condition Assessment include the 2009 IBC, 2009 IEBC and ASCE 7-05 Minimum Design Loads for Buildings and Other Structures.

Structural – Foundation

Condition: *Severe*

New foundations are needed to anchor the building against wind and support its weight and snow load.

Structural – Roof Framing

Condition: *Severe*

The recently replaced wood sheathing is in good condition other than the damage caused by the tree limb that broke through the roof. The sheathing boards though are not adequately supported. The 2x4 purlins are severely overstressed and are cracked in places (figure 3-153) and are not adequately anchored. There is a noticeable sag in the roof plane.



Figure 3-153: Cracked original and new 2x4 purlins, PD 12/6/11

Structural – Wall Framing

Condition: Severe

The bottom of the sheathing boards in contact with the ground have rotted away. The wood that remains has a moisture content exceeding 15% and continues to rot. The wall boards are not adequately supported and the walls are not anchored to the ground.

Structural – Lateral System

Condition: Severe

Lateral stability of the building is precarious. Lateral loads are carried by nail bending in the sheathing boards. Because the building isn't anchored to the ground lateral loads are not readily transferred to the ground.

Structural – Load Requirements

Condition: Severe

The roof snow load capacity is 10 psf based on member strength but the end connection capacity is expected to be lower. The roof is not able to support a person on the roof, such as may be required to perform maintenance.

Contributing Features for the Poultry House

Mass/Form. The simple original rectangular form of the building and its shed massing are contributing.

Exterior Materials. Most of the original wood board and batten siding is extant. The corrugated metal roofing is also a contributing feature.

Openings. The window and door openings are original to the structure, though no glazing, doors or hardware remains in situ.

Interior Materials. The separation of the interior into thirds is a contributing design element.

Chapter 4. Affected Environment

ENVIRONMENTAL CONTEXT AND NATURAL SYSTEMS/ AFFECTED ENVIRONMENT

This section provides an overview of the environmental context within which the Truman Farm is located and the natural systems at the Truman Farm. This section also describes resources potentially affected by the alternatives. It is organized by impact topics that were derived from NPS internal scoping and external public scoping.

Environmental Context and Natural Systems

The Truman Farm is in the town of Grandview, Missouri. The town of Grandview is situated on rolling topography with elevations varying between 920 and 1,060 feet above sea level.¹ The farm is fairly flat, with the southern parcel cut down in elevation. All of the property has been previously disturbed and is currently surrounded by residential and commercial development. A small stream is southeast of the property.

Pre-settlement, the town of Grandview was likely dominated by deciduous hardwood forests. The fertile soils on the bluffs overlooking the Missouri River valley made the area attractive for agricultural use. Once the site was cleared, it took considerable effort to keep grasses, shrubs, and trees from reestablishing. Regular cultivation, mowing, or clearing was necessary to maintain the farm grounds.

¹ NPS CLI, 53.

Historical Structures and Cultural Landscapes

Detailed information on historic structures and cultural landscape features associated with the farm is provided in chapters 2 and 3.

Archeological Resources

Detailed information on the historic archeological resources associated with the farm is provided in chapter 3. Although not specifically addressed in park planning and resource documents, it is possible that prehistoric archeological artifacts are also present in the Truman Farm parcel. Extensive disturbance and cultivation of the farm makes it likely that any artifacts present would be isolated and not part of a historic property.

Vegetation

Vegetation at the Truman Farm is typical of properties that have been continuously modified by human disturbance. Little, if any, of the vegetation is reflective of conditions present before agricultural use of the site. The vegetation surrounding the Farm Home and parking lot consists of upland turfgrass dominated by fescue (*Festuca* sp.), Bermudagrass (*Cynodon dactylon*), bluegrass (*Poa* sp.), and foxtail (*Setaria glauca*). A thick line of trees lines the fence line to the east and south of the Farm Home. The southern and eastern parcels past the fence lines are dominated by smooth brome (*Bromopsis inermis*), switchgrass (*Panicum virgatum*), fescue, and dropseed (*Sporobolus* sp.). A small clump of trees and shrubs is present in the southeast corner of the property. There are no sensitive or unusual vegetation communities or species present in either the farm parcel or the recently acquired parcel to the south. Additional information on vegetation in the context

of the cultural landscape is provided in Chapter 3.

Visitor Experience

The farm opened to the public for ranger-guided tours in 1996. Guided tours are currently offered to the public on Friday through Sunday beginning Memorial Day and through Labor Day. On a busy summer day, the farm has 30 to 40 visitors.²

The urban development surrounding the farm causes difficulty in conveying a sense of the farm as it was when Harry S Truman lived there between 1906 and 1917.³ Most of the current interpretation occurs inside the house; however, most of the significant activities on the farm happened outside. This creates a challenge for the interpreters in relating some of the primary stories that are not clearly tied to the furnished rooms. Guided tours are limited to six people. A park ranger meets visitors at the side porch where a table displays informational literature. The tour, which involves the negotiation of two separate stairways, leads visitors to rooms on both the first and second floors. Interpreters sometimes encounter preservation and security concerns if visitors choose not to climb one or both of the stairs. A photo album that illustrates all areas of the house is available for those not willing or who are unable to negotiate the stairs.⁴ Introduction to the farm is provided to the public through use of a wayside exhibit, site bulletins, a temporary exhibit panel discussing the Truman family, and through ranger contact.⁵ A cell phone tour is also available of the farm.

2 NPS LRIP, 16.

3 NPS LRIP, 14.

4 NPS LRIP, 14.

5 NPS GMP, 43.

Park Operations

The Truman Farm consists of the restored Farm Home, Garage (former Grandview post office), smokehouse, privy, Poultry House, and surrounding remnant agricultural landscape. There are no visitor facilities at the farm. Under the current operation, park rangers lead visitors on ticketed tours. Rangers meet, greet, and distribute tickets to visitors from the kitchen porch of the Farm Home, which causes additional wear and tear to the resource.⁶ Maintenance operations at the farm are currently housed in a temporary shed located on the farm grounds, which compromises the historic scene and presents an inaccurate view of the farm to visitors.

The Truman Farm has no permanent full-time staff dedicated solely to staffing or maintaining the Grandview Unit. During the summer, employees from the Independence Unit, seasonal staff, and volunteers fill the staffing requirements at the farm. The recent purchase of the adjacent paint store (to be used as a visitor contact center) would likely increase staffing needs at the farm.

Visual Resources

Detailed information on the visual resources associated with the Truman Farm is provided in chapter 3.

6 NPS GMP, 43.

Chapter 5. Treatment

OVERVIEW

This section presents the treatment recommendations for the repair, protection, and stewardship of the Truman Farm and its contributing features. The treatment recommendations are founded on review of historic documentation, assessment of existing condition and history, and application of the Secretary of the Interior's standards and guidelines as they apply to the treatment of historic landscapes and buildings.

A no action and four action alternatives were identified to address improvements to site management, resource protection, and visitor experience. Two treatment approaches, rehabilitation and restoration, were evaluated.

- Alternative 1: The Family Farm
- Alternative 2: Farm, City, Nation
- Alternative 3a: Restoration to 1917
- Alternative 3b: Restoration to 1957

Alternatives 1 and 2 proposed rehabilitation of the cultural landscape and buildings, differing in the extent of modifications. Alternatives 3a and 3b proposed restoration to a specific timeframe within the period of significance. Alternative 3a proposed restoration to 1917 (the period currently interpreted). Alternative 3b proposed an end date of 1957, the latest date with the most extant resources.

An evaluation of alternatives was conducted during a Value Analysis/Choosing by Advantages (VA/CBA) work session in July 2012. The VA/CBA facilitated the project's scoping process and identified appropriate treatments to be undertaken within the context of

the park's current and future ability to perform the work. In addition, the four action alternatives were evaluated for their compliance with the park's 1999 GMPA, and other relevant laws, regulations, policies, and guidance, and for their ability to address the project's goals and objectives.

Alternative 2: Farm, City, Nation with a recommended treatment approach of rehabilitation was identified as the preferred alternative. This alternative represents the NPS preferred management action, and defines treatment for the Truman Farm cultural landscape and historic buildings as well as recommendations for connectivity with future planned park facilities.

CHAPTER ORGANIZATION

This chapter describes the no action and each of the four action alternatives. The no action alternative is presented first, followed by goals, objectives, and treatment common to all action alternatives. The first action alternative presented is a detailed description of the preferred alternative—Alternative 2: Farm, City, Nation. This is followed by summary descriptions of the other three action alternatives.

NO ACTION ALTERNATIVE

The no action alternative provides a basis for comparison with the action alternatives, including the preferred alternative, and with the respective environmental consequences.

Under the no action alternative, the present level of use, management,

interpretation, maintenance and operations would continue. As identified in the 1999 GMPA, the no action alternative would include removal of non-historic features, and development of the recently acquired building and land of Tract 3, a parcel originally part of the Truman farmland.

The building on Tract 3 would be converted for park facilities including those for visitors such as restrooms, drinking fountains, and a sales area. Parking for visitors and park staff would be in an improved parking area on this parcel. The existing entrance drive and parking area would be eliminated on Tract 1. The visitor program would continue at its current level at the Farm Home with visitor orientation and sales. For the short-term, the property would accommodate park administration and maintenance by the continued use of the Farm Home and non-historic maintenance shed, and these would continue to expand as needed. Stabilization and preservation of the Farm Home, Garage and Poultry House would continue under the no action alternative.

Considered But Rejected

Two treatments were considered but rejected from further consideration during the process of developing the action alternatives due to current issues with security and maintenance.

These were the potential addition of small scale structures such as small sheds in the garden and Farm Home yard for day-to-day use at select locations; and a three-dimensional marking at the granary in the form of a pavilion to express the original structure in form and mass, and to provide visitor interpretation.

These treatments were rejected as they are not currently feasible due to issues with vagrancy and limited oversight and maintenance at the property. Should these management conditions change these treatments could be re-evaluated.

Goals Common to All Action Alternatives

1) Represent Harry S Truman's relationship with the Truman Farm from his tenure as a young man working the farm to his intimate influence on daily operations, and through his presidency and into his later years regarding his decisions on land development.

2) Preserve the Truman Farm's cultural landscape, including its individual features and overall historic character that contribute to this story, and to the NHRP and NHL districts with an expanded period of significance (1906 to 1965).

3) Increase visitorship by creating opportunities for visitor engagement through an authentic experience that readily conveys the period of significance, and provides for interaction as well as ease of access to historic buildings, structures, features and spaces.

4) Continue to develop partnerships with local, state, and regional agencies and organizations to increase awareness of the Truman Farm, and to create a corps of stewards and volunteers.

5) Address building issues such as deterioration and deficiencies, address operational needs and code deficiencies such as accessibility, utility system, distribution, and fire and life safety in a manner that preserves the cultural resources.

Objectives Common to All Action Alternatives

1) Protect cultural resources and museum collections through accepted preservation practices including preservation, stabilization, restoration, and repair. Preserve known, potential, and unknown archeological resources.

2) Repair and maintain contributing buildings, structures, landscape features, and vegetation patterns. Remove non-contributing features.

3) Reveal the farm's historic spatial qualities and the historic physical and visual connections between the NHL and the adjacent land that was originally part of the Truman's landholdings.

4) Convey the extent of the Truman Farm landholdings during the period of significance and the evolution from 600+/- acres to 11.19 acres today, while also screening surroundings not related to this history.

5) Fulfill the Long Range Interpretive Plan's objectives to interpret the evolution of the farm and its connection to the railroad, community, and other Truman sites.

6) Create a visitor contact center (as per the 1999 GMPA) on Tract 3 to support the visitor experience. Provide for NPS maintenance, administration and curatorial facilities, and opportunities for multiple agency engagement.

Treatment Common to All Action Alternatives

This section describes treatment proposed as a basic recommendation for all action alternatives. The treatment that is common to all alternatives is summarized in this section and is not repeated in the descriptions of the action alternatives.

Natural Systems

1) Preserve existing natural systems including the pattern of taller grasses and trees along perimeter fence lines, and the natural outcroppings of limestone.

2) Protect vegetation and trees on the east perimeter as habitat for small animals.

Land Use

The land associated with the Truman Farm as defined by the boundary of three tracts will remain. Tract 1 (NHL boundary), Tract 2 (5-acre parcel of original Truman landholdings), and Tract 3 (with existing building and parking, part of original Truman landholdings), will remain.

1) The NHL boundary will remain as it currently exists. No changes are recommended.

2) The visitor facilities as identified in the 1999 GMPA will be developed on Tract 3. New, relocated administration and maintenance facilities will be removed from Tract 1 and relocated as indicated below.

- Develop visitor facilities in the existing building and property on Tract 3 along with parking and vehicular access. Provide a park sign at the relocated vehicular entrance.

- Relocate NPS maintenance facilities from the current sheds to Tract 2 or 3.
- Develop an orientation space and a pedestrian connection to the Farm Home and the farm yards.
- Develop an interpretive system including reuse of existing signs.

Topography and Landform

Any soil disturbing activities will include a geophysical baseline survey of the property. Adequate archeological ground truthing will be done for any geophysical anomalies to determine their nature, integrity and extent. This will be done as the first step in all projects.

Circulation

Vehicular traffic will be relocated to Tract 3 and the existing parking area and drive eliminated as per the 1999 GMPA.

- Remove the non-historic asphalt parking area and driveway. Allow maintenance and ABAAS access only on the restored entrance drive. Protect existing geothermal fields.
- Provide a pedestrian sidewalk along Blue Ridge Boulevard (by city).
- Provide an accessible route through the property and between contributing spaces and features.

Structures

Non-historic structures from 1982 construction including the maintenance shed, smokehouse and privy, will be removed.

Vegetation

Select non-historic trees will be removed for views into the Truman Farm, and

vegetation added to screen adjacent development not associated with the Truman Farm.

- Remove existing trees (crabapples) at northwest corner of site.
- Remove non-historic shrubs near the Farm Home.
- Retain the vegetation along the north property line.

Small Scale Features

Select non-historic features will be retained and repaired as they provide security, privacy and boundary definitions.

- Continue to fence the north, east, and south property boundaries.
- Remove debris and rubble on Tract 2.

Utilities

Repair and upgrade utilities to provide a fully functioning site.

- Remove existing outdoor light fixtures and provide new facade lighting using smaller, energy efficient LED fixtures with optics to reduce light spill at the Farm Home.
- Move flagpole to Tract 3, and provide LED uplighting to comply with U.S. Flag Code.
- Provide lighting between the future park facilities on Tract 3 and the Farm Home using low light levels with full cutoff optics.
- Move one existing fire hydrant (required by removal of asphalt parking area).
- Excavate and repair the drainage swale and culvert under entrance

- drive for positive drainage.
- Provide positive drainage away from Farm Home, Garage, and Poultry House. Add a perimeter drain (10-feet from building) around Farm Home and routed to an outfall on the south field. Extend roof downspouts a minimum of 10-feet from the edge of the Farm Home and flow to or connect to the perimeter drain.
- Provide water quality and storm water detention facilities for the farm facilities. Repair drainage swale and culvert at vehicular entrances.

RECOMMENDED TREATMENT, ALTERNATIVE 2: FARM, CITY, NATION (PREFERRED ALTERNATIVE)

General

Alternative 2: Farm, City, Nation is the preferred alternative for recommended treatment for the Truman Farm. This alternative follows a rehabilitation approach for the historic buildings and cultural landscape that will allow for compatible use and provide for restoration, repair, alteration, and additions to the Truman Farm while also preserving those features that convey the historical and cultural values of the historic site. This alternative was selected as the preferred alternative during the VA/CBA process in July 2012.

In general, the preferred alternative recommends rehabilitation of the Truman Farm to provide a holistic visitor experience where extant contributing features are repaired, missing features are restored, and new compatible features are added.

The rehabilitation approach is well-suited to preserving the Truman Farm and its contributing features while ensuring the site offers the contemporary visitor a multitude of tactile, sensory, and kinetic experiences.

The preferred alternative is compatible with the period of significance of 1906 to 1965 as it recommends conveying the broad story of Harry S Truman—his character and the influence he had on agriculture, commerce, and politics—from his early years through his presidency and after he left office.

The preferred alternative recommends telling this story through the rehabilitation of his family farm, and through the interpretation of the

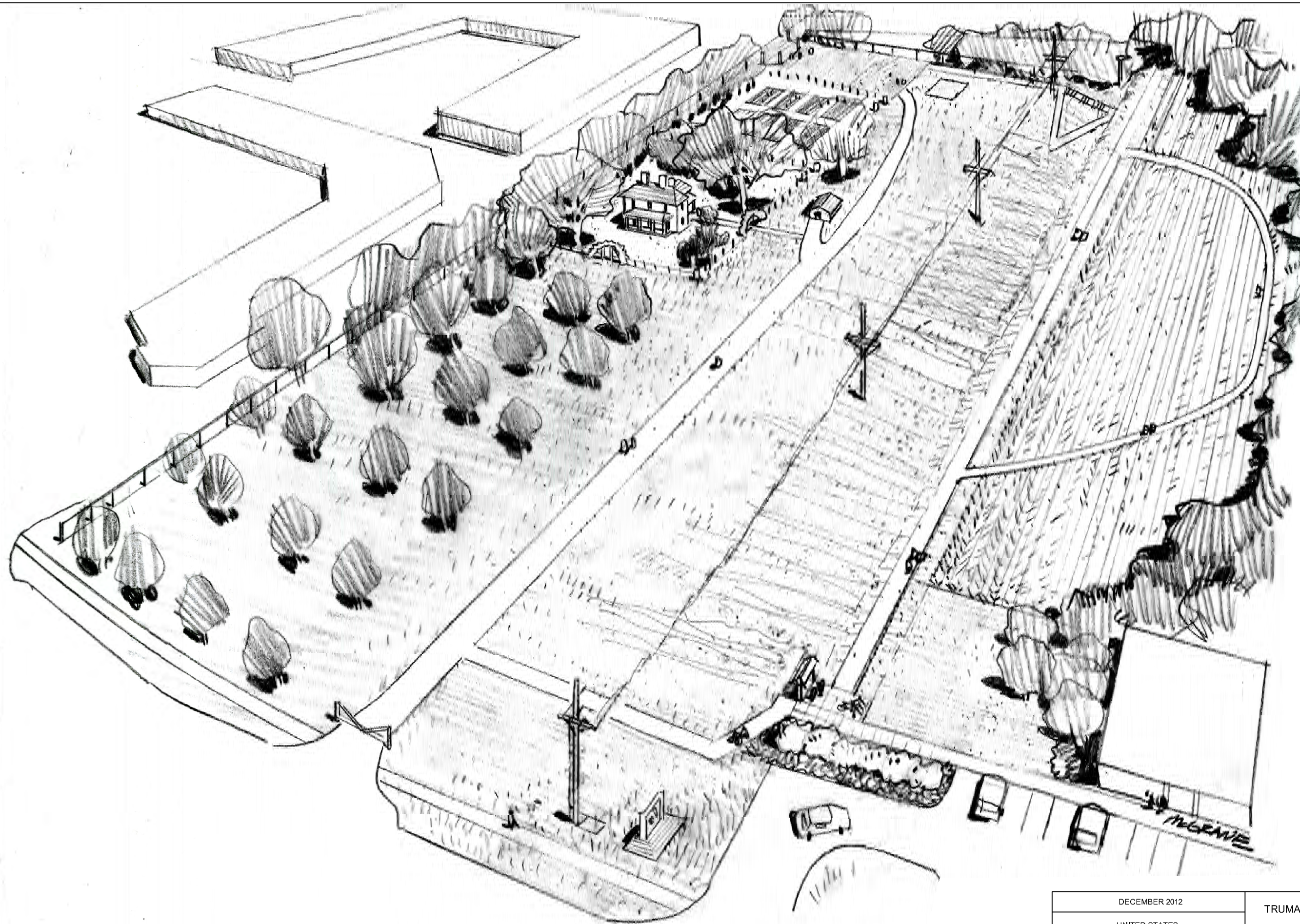
farm's immediate setting and broader surroundings as a place that was heavily influenced by President Truman's actions and decisions.

The preferred alternative is compatible with the 1999 GMPA. It is also compatible with park's Long-Range Interpretive Plan as it conveys Primary Theme 1 as being a product of the events of Truman's presidency, Primary Theme 7, and Primary Theme 8 as revealing Truman's character learned from his time on the farm.

In summary, the preferred alternative recommends the following actions. These actions are supported by the treatments identified as common to all alternatives.

- Allow a moderate amount of change to the site with very few modifications to the Farm Home. With the rehabilitation approach, significant modifications to the Farm Home are not necessary.
- Provide the greatest interpretation of the farm to illustrate President Truman's influence on the farm, the community, and on the nation after his presidency.
- Develop visitor, administrative and maintenance facilities on Tract 3 using the existing building for visitor facilities (restroom, drinking fountain, sales, orientation, exhibits), and the site for visitor and staff parking.
- Develop an outdoor gathering space and visitor orientation/kiosk between the visitor facilities and the Farm Home.

- Repair all extant contributing features in situ (for features in their historic location). For those moved from their original locations, locate repaired features in new locations approximate to their historic location or in a compatible spatial relationship with other contributing features.
 - Allow minor reconstruction of missing features, and the addition of new compatible features to tell Harry S Truman's broader story. The stone posts currently in disrepair would be reset, and the foundations of the Solomon Young Barn and the Granary would be marked on the surface and/or in three-dimensions, with the possibility of a wood frame scrim or wall.
 - Restore the historic spatial character of the Truman Farm by repairing the historic spaces such as the maple grove, Farm Home yard, the garden and barnyard, and the open visual character between the Farm Home and the adjacent Truman land to the south. Allow the use of contemporary, compatible materials to redefine these historic spaces.
 - Provide a pedestrian circulation system to include the restored historic entrance drive extending from Blue Ridge Boulevard to the barnyard, the modified 1950s roadway, and the addition of a new path to connect to the future orientation space at the future park facilities on Tract 3.
 - Provide modifications to the Farm Home for ABAAS access including altering the southeast porch to provide ABAAS access through the kitchen, and adding a new ramp to the Garage so visitors may view the inside.
- Provide a fire sprinkler system for the Farm Home and Garage. Allow the Poultry House to be viewed from exterior and provide interpretive media.
- Provide the necessary utilities for the fire suppression system.
 - Address building issues such as deterioration and deficiencies. Address operational needs and code deficiencies, utility system and distribution, and fire and life safety issues.
 - Buffer adjacent development from the Truman Farm by placing groupings of trees along the property lines to interrupt but not completely screen the adjacent land uses. Provide a screen fence along the south boundary.
 - Create narrow views into Truman Corners to the east at select points for an understanding that this land was intentionally developed by President Truman.



HSTR 492 116064

DECEMBER 2012	TITLE OF PROJECT TRUMAN FARM CULTURAL LANDSCAPE REPORT
UNITED STATES DEPARTMENT OF THE INTERIOR TRUMAN FARM NATIONAL HISTORIC SITE	TITLE OF DRAWING PREFERRED ALTERNATIVE SKETCH
	NAME OF PARK TRUMAN FARM - HARRY S TRUMAN NATIONAL HISTORIC SITE
	REGION MIDWEST
	COUNTY JACKSON
	STATE MISSOURI

Archeological Sites

Archeological sites within the Truman Farm are relevant to the history and story of life on the farm. These archeological sites represent the remains of approximately five non-extant barns as well as other non-extant outbuildings and features. The archeology of the site likely includes foundations and artifacts from the period of significance.

1) Preserve known archeological sites, and undertake measures to identify and preserve areas of potential archeological significance.

2) Preserve those known archeological sites that contribute to the historic character of the Truman Farm and could yield more information on the farm's history and use.

- Solomon Young Barn Foundation
- Granary Foundation
- Small Barn Foundation
- Icehouse/Coalhouse Site
- Smokehouse Site
- Unknown Structure/Topographic depression
- Stone Threshold/Truman Farm Barn (TF09)
- Road Trace

3) Undertake archeological investigations for any proposed projects in advance of any other work on the project, including demolition. Integrate archeology investigations with any and all construction activities.

- Include archeological monitoring when undertaking protection and stabilization measures to the Farm Home, structures or the cultural landscape, to identify and analyze potential archeological resources.

4) Preserve known and potential archeological sites by locating new improvements such as utilities in previously disturbed locations.

5) Consider performing a comprehensive archeological survey of the entire property.

6) Consider performing archeological investigations for the non-extant garden and orchard to determine the extent and composition of the historic plantings including plant species, locations, and arrangement. Collect seeds and pollen to determine historic plant species.

7) Consider performing archeological investigations for the non-extant Granary and Solomon Young Barn and barnyard. This will determine the historic extents of the barnyard and locations of the non-extant barns and will assist in defining and marking these historic features.

Spatial Organization

The spatial organization of the Truman Farm reflects the historic arrangement of the farm as built and modified by Harry S Truman and his family during the period of significance.

The Farm Home and its adjacent spaces were originally more clearly defined than today, separated by fencing and the various activities that occurred in each space. In addition, these spaces were visually and physically connected to the surrounding farmland.

1) Restore the historic spatial arrangement of the four distinct spaces associated with the Farm Home. These are the sugar maple grove, the Farm Home, the garden, and the barnyard, now an open lawn framed by trees.

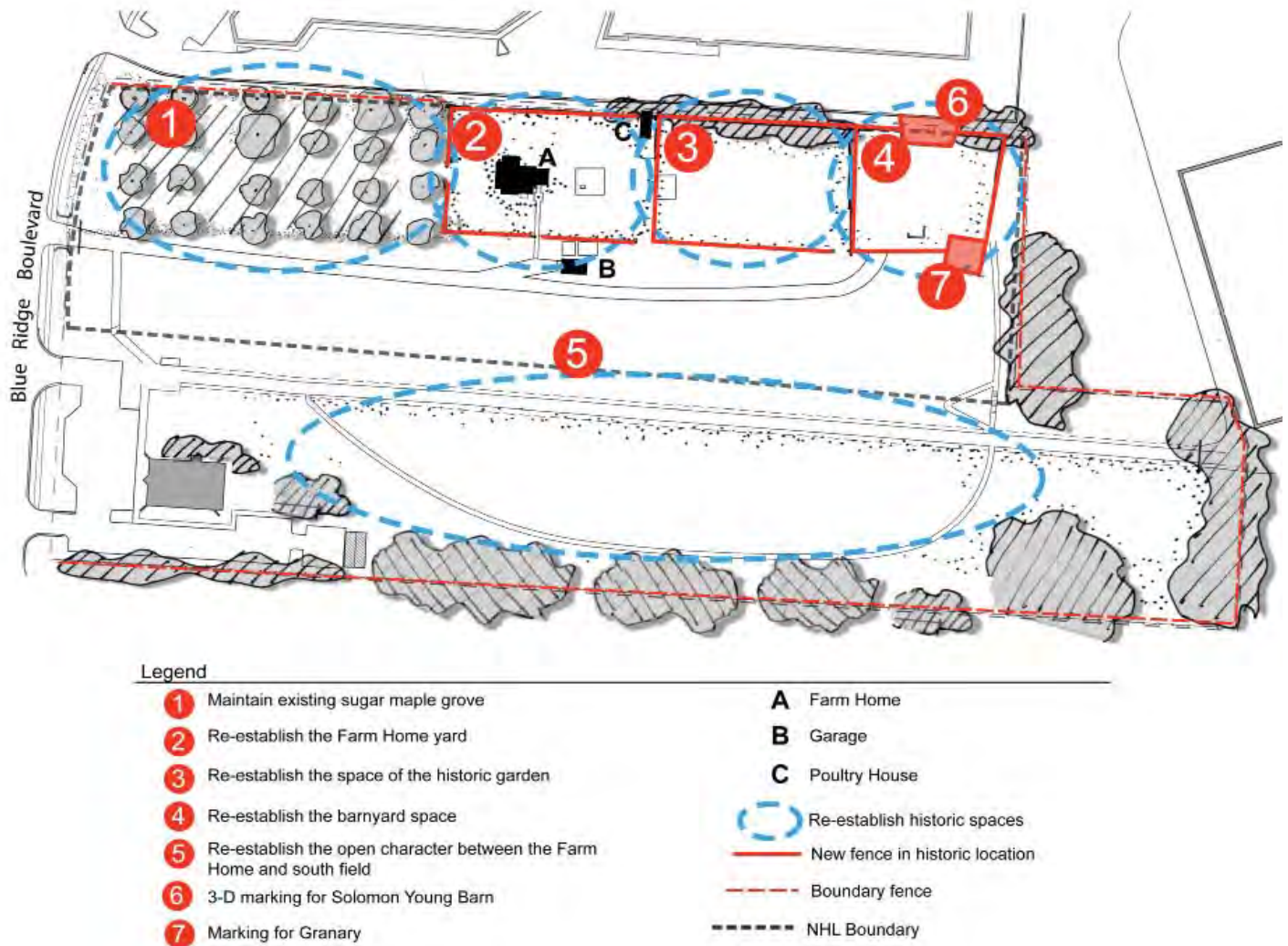


Figure 5-1. Treatment recommendations for re-establishing the historic spatial organization. MBD

- Maintain the sugar maple grove by replacing or adding trees as necessary to maintain the grid of trees and the space they define. Initially add three trees to complete the grid pattern.
 - Restore the Farm Home yard by adding new simple unornamented contemporary fences set along the alignments of the original fencing. Allow fencing to connect to the extant stone posts. Maintain the existing trees and open lawn of the Farm Home yard.
 - Re-establish the historic space of the garden by defining the space with the addition of new simple unornamented contemporary fences set along the alignments of the original fencing. Consider establishing garden plots or beds. Coordinate with the local Master Gardeners or other community groups for volunteer assistance in developing and maintaining the garden.
 - Restore the barnyard space by defining the space with fencing, removing existing lawn and resurfacing the space to reflect the historic barnyard surface. Acceptable surfacing includes compacted earth or crusher fines.
- 2) Restore the historic spatial arrangement between the Farm Home and the surrounding farmland including the south field and the lands to the east.
- Remove existing vegetation on the slope between the Farm Home and the south field to restore the open visual connection that historically occurred between the two spaces.
 - Remove non-contributing structures to re-establish the historic relationships between buildings, structures, and farm yards. Remove the NPS shed, smokehouse, and privy.
- Maintain the open appearance of a field and/or cropland in Tract 2 through plantings of crops and/or tall grasses.
- 3) Consider marking the historic non-extant structures to illustrate their size, form and mass as existed historically.
- Allow for marking the foundations of the non-extant structures of the barnyard, including the Solomon Young Barn and the Granary, with a three-dimensional marker to convey the historic spatial arrangement of the barns and outbuildings in relation to the Farm Home.
 - Consider a contemporary three-dimensional marking for the Solomon Young Barn to convey the size, mass, and orientation of the barn. Consider a wall or frame construction that is clearly contemporary but authentically reflects the mass and scale of the historic barn.
 - Consider marking the Granary footprint, by outlining the historic form with a gravel surface, vertical posts, or stone edging. Preserve the extant foundation as part of marking either by burying it or by integrating it into the marking.

Topography and Landform

The topography and landform of the Truman Farm remains as it was at the end of the period of significance. The higher elevation of the property, at the Farm Home, is a fairly flat gradient. This topographic form extends the full width of the property and to the approximate center where a steeply sloping hillside built in the 1950s separates the Farm

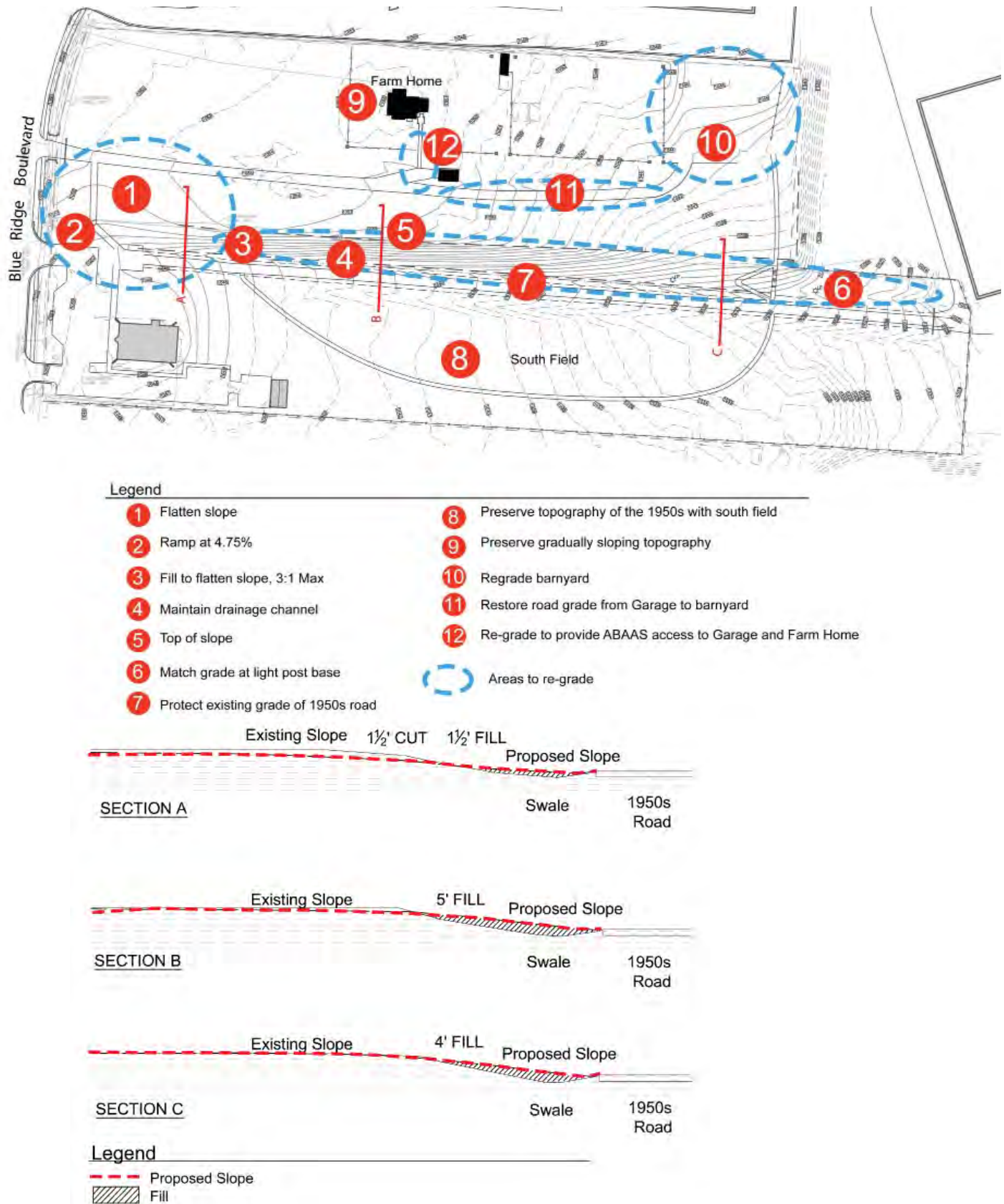


Figure 5-2. Treatment recommendations for Topography and Landform include minor regrading of the slope between the Farm Home and the south field for ease of maintenance and a better visual connection between the two spaces. MBD

Home from the south field. The lower level is also fairly level and is the product of the 1950s development. This land was never developed, but the topographic form remains. These characteristics of topography and landform are as built and modified by Harry S Truman and his family during the period of significance.

1) Preserve the topography and landform of the upper area of the Truman Farm, where the Farm Home and barnyards exist.

- Preserve the gradually sloping topography as it descends away from the Farm Home in all directions. Preserve this topography through the sugar maple grove to the west, through the garden on the east, and to the slope on the south.
- Preserve the topography as this slight rise historically provided the views to the surrounding Truman-owned farmland, and provides views to the full property today.
- Provide positive drainage away from, and around the Farm Home and other historic structures.

2) Restore the topographic form of the barnyard.

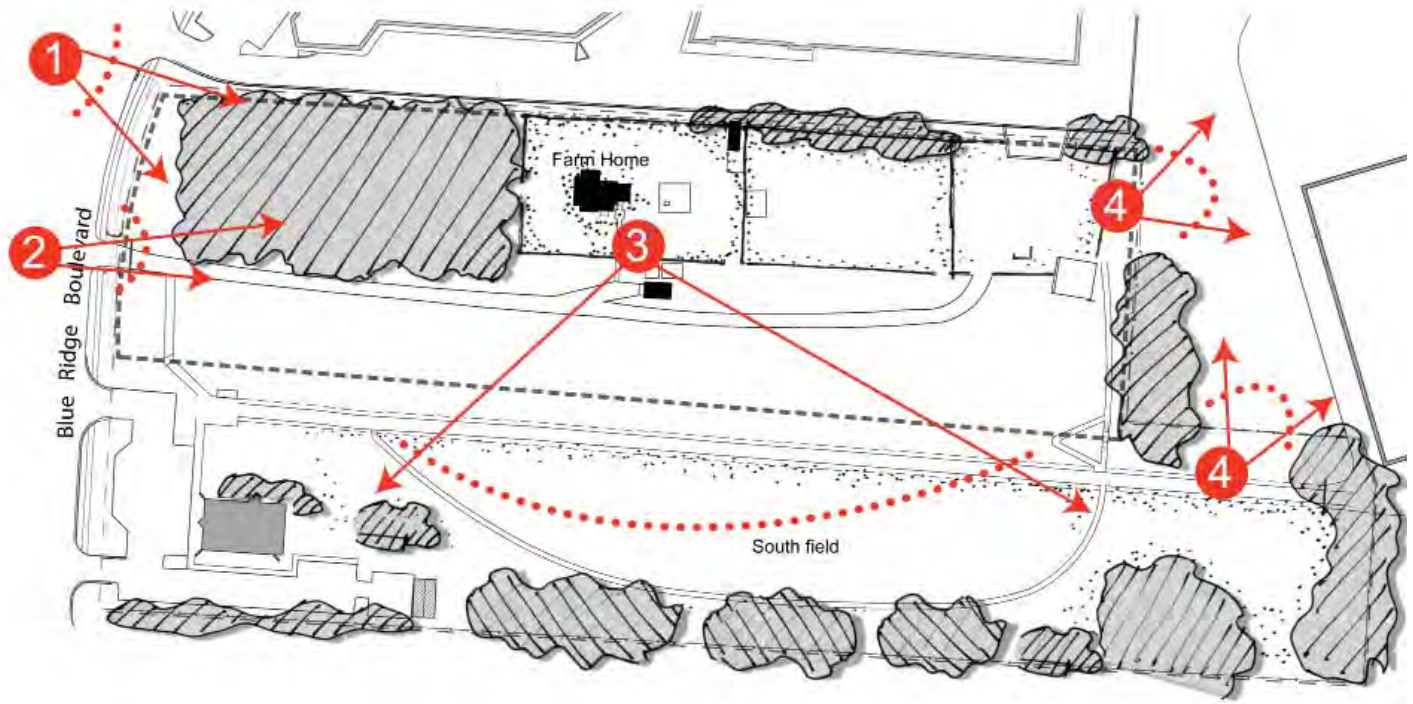
- Regrade the barnyard on the west to re-establish the slope that historically separated the barnyard from the garden.
- Regrade and fill the area of the barnyard on the north that historically led to the Solomon Young Barn.
- Preserve the sloping topography of the barnyard as it slopes towards the east.

3) Allow portions of the historic slope that separates the Farm Home from the south field to be regraded to restore visual and spatial connections between these two spaces.

- Allow the western portion of this slope near the future park facilities to be regraded to flatten the slope and to reduce or eliminate the visual interruption between this future space and the Farm Home.
- Allow the portion of the slope directly south of the Farm Home to be regraded to improve the spatial arrangement and allow for ease of maintenance between the existing top of slope and the north edge of the historic road gradient. Allow for a maximum 3:1 slope in this area.
- Ensure that the historic road gradient of the 1950s roadway remains intact. Allow for removal of three 1950s light posts, and protection of one post.
- Undertake measures to preserve the slope elsewhere, mitigating erosion issues.

4) Preserve the topography and landform of the south field of the Truman Farm as graded for development in the 1950s.

- Preserve the gradually sloping topography as it descends from west to east.
- Preserve the topographic form of the 1950s roadway.
- Allow alterations to the 1950s roadway on the west to accommodate a future vehicular entrance, parking, and an orientation/gathering area.



Legend

- ① Preserve view of Farm Home and sugar maple grove from Blue Ridge Boulevard
- ② Preserve view of Farm Home and sugar maple grove from entrance drive
- ③ Restore view from Farm Home to south field
- ④ Provide select views to Truman Corners

Figure 5-3. Treatment recommendations for views and vistas. MBD

Views and Vistas

1) Undertake measures to preserve or restore historic views and vistas to and from the Farm Home that contribute to its historic character.

- Repair the view from Blue Ridge Boulevard to the sugar maple grove, by removing non-historic vegetation.
- Preserve the views from Blue Ridge Boulevard and along the entrance drive to the Farm Home, as this is the historic view for people arriving at the Truman Farm.
- Restore the views to and from the Farm Home to the south field, the original Truman farmland, by removing existing naturalized and non-historic vegetation (trees and shrubs) along the slope.
- Repair and maintain the view from the south field to the Farm Home by establishing low growing vegetation such as crops and grasses in the south field.

2) Work with the City of Grandview and local property owners to re-establish the visual corridor from Old Grandview Road east to Blue Ridge Boulevard, and into the Truman Farm.

- Work with adjacent property owners to remove/modify signage that distracts from the view to and appearance of the Truman Farm.
- Work with adjacent property owners to encourage low-density development and non-distracting signage for any new buildings to be constructed within the viewshed. Work with these owners on preserving the view to the Truman Farm.

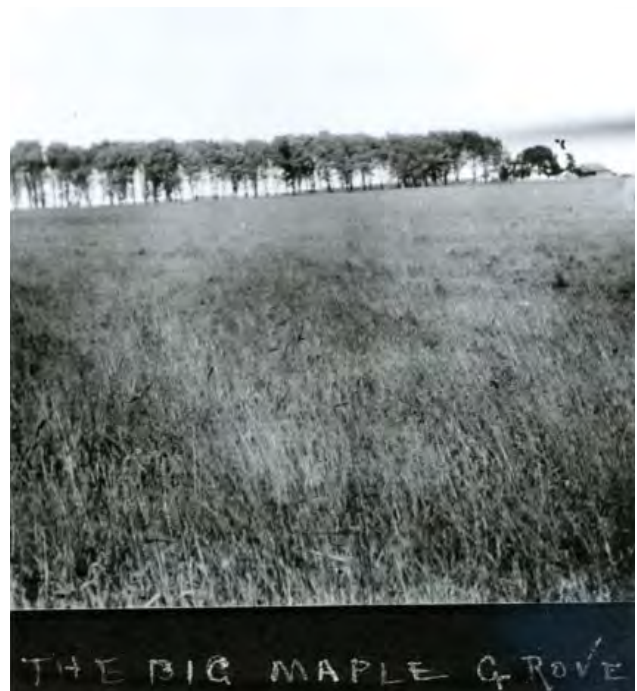


Figure 5-4. Historically, the sugar maple grove stood out against the agrarian landscape. Treatment recommendations include preserving an open view to the sugar maple grove and Farm Home from Blue Ridge Boulevard. HSTL 84-12-3

3) Provide select, narrow views between the Truman Farm and Truman Corners.

- Establish a narrow, focused view to Truman Corners from the barnyard where the 1950 development of buildings and site can be best interpreted.
- Establish a narrow focused view to Truman Corners from the eastern portion of the 1950s roadway.

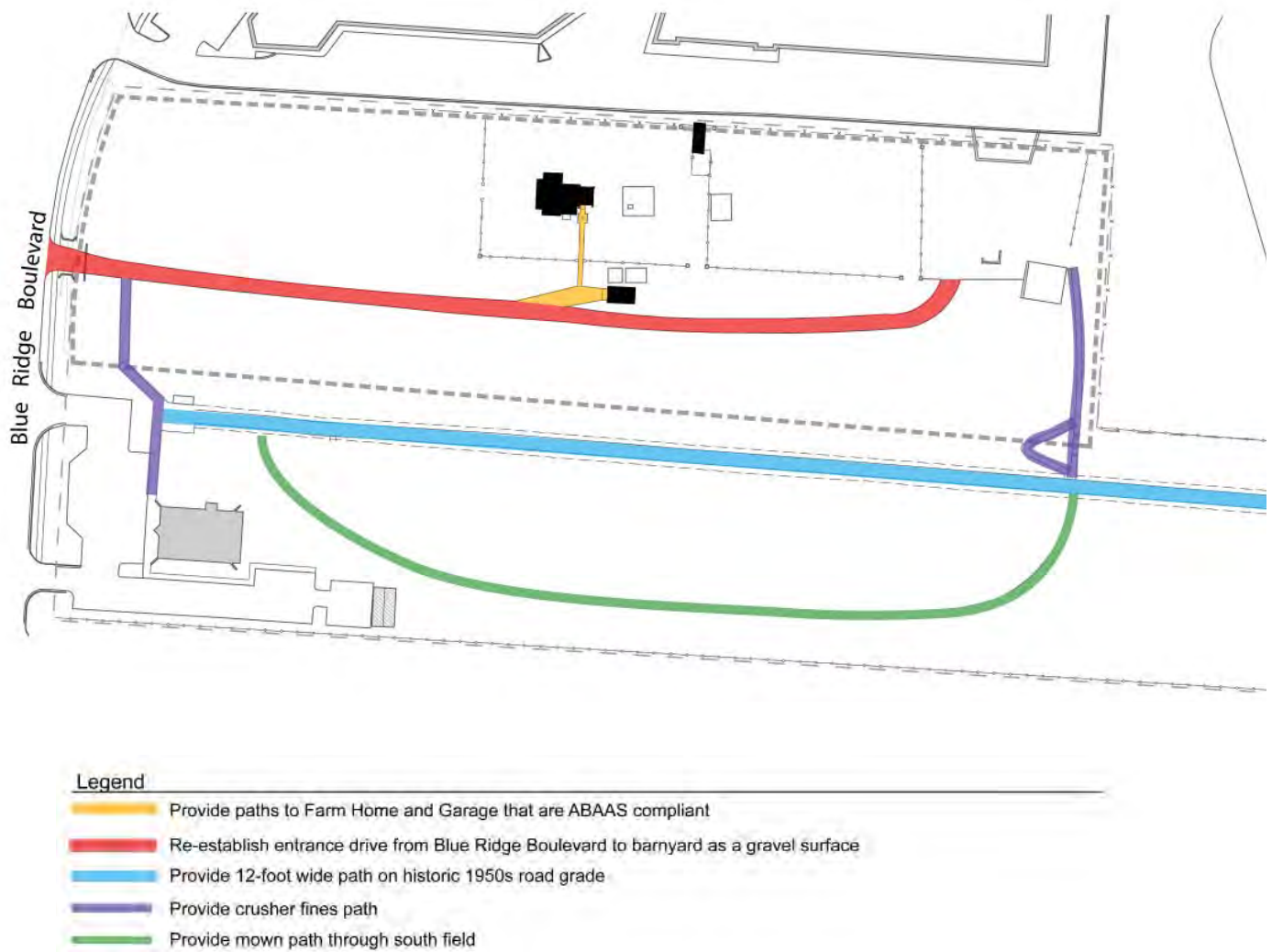


Figure 5-5. Treatment recommendations for circulation. MBD

Circulation

1) Restore the Truman Farm's historic vehicular and pedestrian circulation system by removing non-historic and non-contributing features and by re-establishing those features, drives and walkways, that contribute to the significance of the property:

- The original entrance drive from Blue Ridge Boulevard to the Garage, and from the Garage to the barnyard;
- Path from the Garage to the Farm Home;
- The 1950s roadway built to provide access to a never-completed commercial development.

2) Remove non-contributing circulation routes and features.

- Remove the existing non-historic asphalt parking area and drive, concrete curb and concrete walk in accordance with the 1999 GMPA.

3) Restore the entrance drive from Blue Ridge Boulevard to the Garage, and from the Garage to the barnyard.

- Follow the original alignment and topography of the historic entrance drive. Evidence of the alignment exists between the Garage and the barnyard.
- Provide a gravel paved drive with a surface appropriate for daily use as ABAAS compliant pedestrian path, and for the occasional vehicular use for emergency or maintenance vehicles.
- Install a gate at the connection to Blue Ridge Boulevard to assist in restricting vehicles.

4) Repair the 1950s roadway for pedestrian use.

- Remove the existing asphalt paving. Maintain the historic topography of the 1950s roadway including the width.
- Provide an ABAAS compliant path, preferably of a stabilized crusher fines surface at a width of approximately 12-feet.

5) Provide universal accessibility to the Farm Home and select historic structures.

- Provide ABAAS accessibility to the Farm Home in a manner that respects the historic character and preserves contributing features.
- Consider in the long-term providing ABAAS accessibility into the interior of the Garage. For the short-term, provide ABAAS accessibility to the exterior entry of the Garage.
- Provide accessibility to the Poultry House (exterior not interior access).

6) Establish new paths to provide pedestrian circulation throughout the property.

- Provide a new paved ABAAS accessible path to connect the future park facilities with the entrance drive near the west edge of the property. Allow gravel or crusher fines that area stabilized to meet ABAAS standards in a width of approximately 6-feet.
- Consider providing a mown path through the rotated crops recommended in the south field. This path would not be ABAAS compliant, but would provide a secondary path through the property, with an alignment that could change from year-to-year.

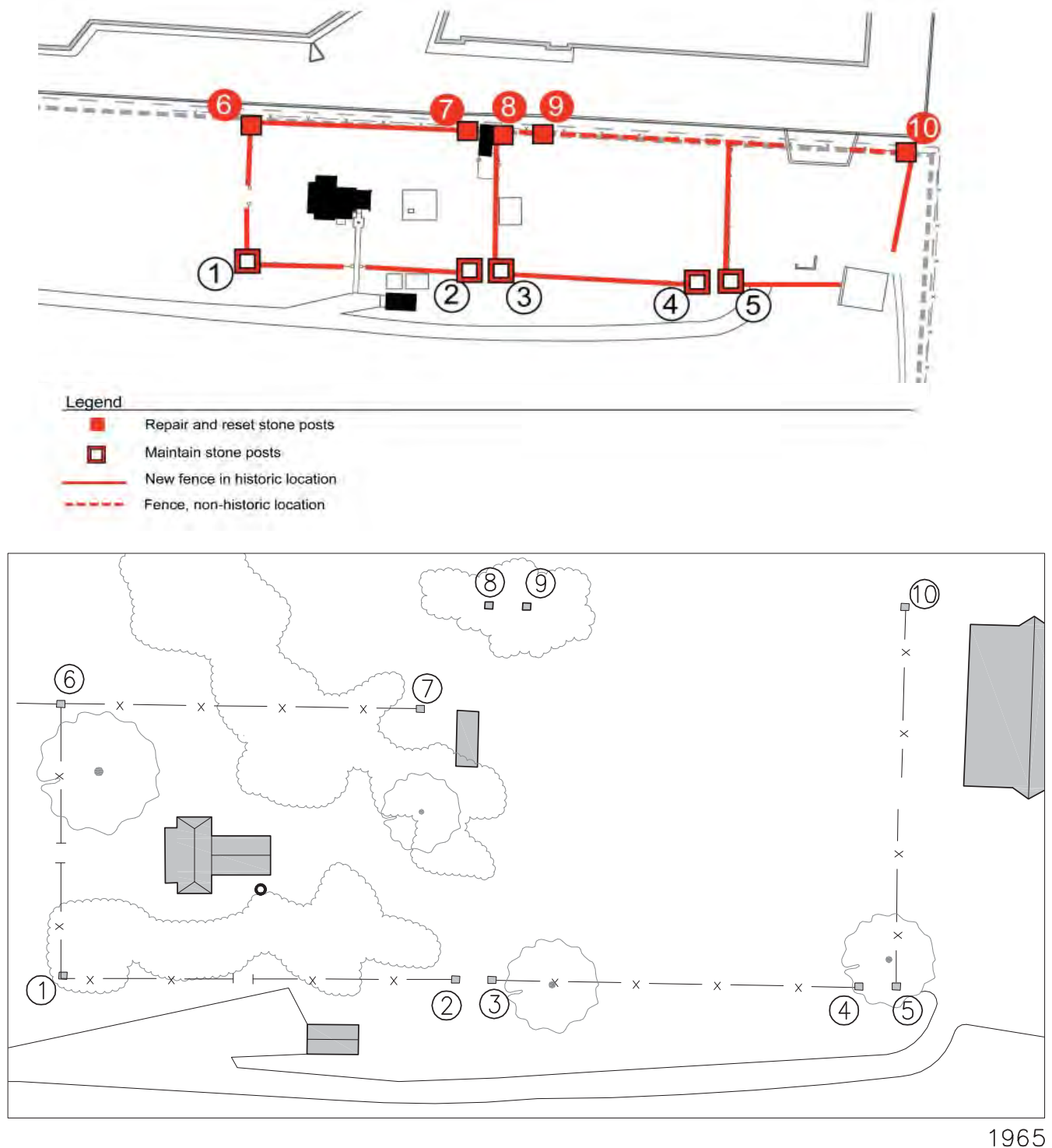


Figure 5-6. Treatment recommendations for contributing small scale features are diagrammed in the top image. The lower image illustrates the historic location of the stone posts in 1965. The posts date from c.1930. After the 1987 commercial development of Vivian Truman's farm to the north of the Truman Farm, several stone posts (Posts 6 through 10) were removed and placed on their sides on the Truman Farm property. MBD

Small Scale Features

1) Repair contributing small scale features including the extant stone posts, fencing, concrete pad at the Poultry House, and 1950s lightposts.

- Maintain and repair the original stone posts (Posts 1 through 5) that are in their original, historic locations, in-situ. Provide on-going maintenance and repair as needed. Remove any vegetation encroaching or undermining the posts.
- Repair and re-set the contributing stone posts that are currently overturned (Posts 6 through 10), placing these posts as close to historic locations as possible, generally along the north fence line.
- Repair the Poultry House fence. Remove overgrown vegetation and replace wood posts with in-kind materials as needed. Provide new fence fabric to span between the existing wood fence posts.
- Maintain the concrete pad south of the Poultry House, replace portions of the concrete if damaged. If a new foundation is required for the Poultry House (Refer to the Poultry House, Structural Treatment for further recommendations), rebuild the concrete pad in the size and configuration of the existing pad with a similar color, texture and workmanship.
- Consider resetting the pump to orient as it was historically, and plumbing the pump so that is active, allowing visitors to use the pump.
- Repair the 1950s light post along the 1950s road. Consider removal of three posts in the long-term to facilitate a

more open visual connection between the Farm Home and south field.

Consider further research on the light posts to more clearly identify their date of construction.

2) Consider removing non-contributing small scale features that detract from the historic setting.

- Consider removing the existing fence at the top of the slope to allow for a better connection between the Farm Home and the south field.

3) Allow select non-contributing features to remain that do not detract from the historic setting or have functional value.

- Move the existing flagpole to the future park facilities.
- Maintain and repair existing fences, posts and fabric, along the north and east property boundaries to provide a fully enclosed historic site. Provide a consistent perimeter fence along the south and east edges of the site.

4) Allow select contemporary small scale features to assist in restoring historic spaces and spatial arrangements to provide an authentic feeling and character of a family farm.

- Allow fencing to define the historic spaces—the Farm Home yard, garden, and barnyard. Allow the reuse of existing stone posts. Provide new posts and fabric as required.
- Re-establish the two arbors at the Farm Home yard fence in their historic locations. One is west of the front door, and the other is at the fence opening leading to the south side of the Farm Home.

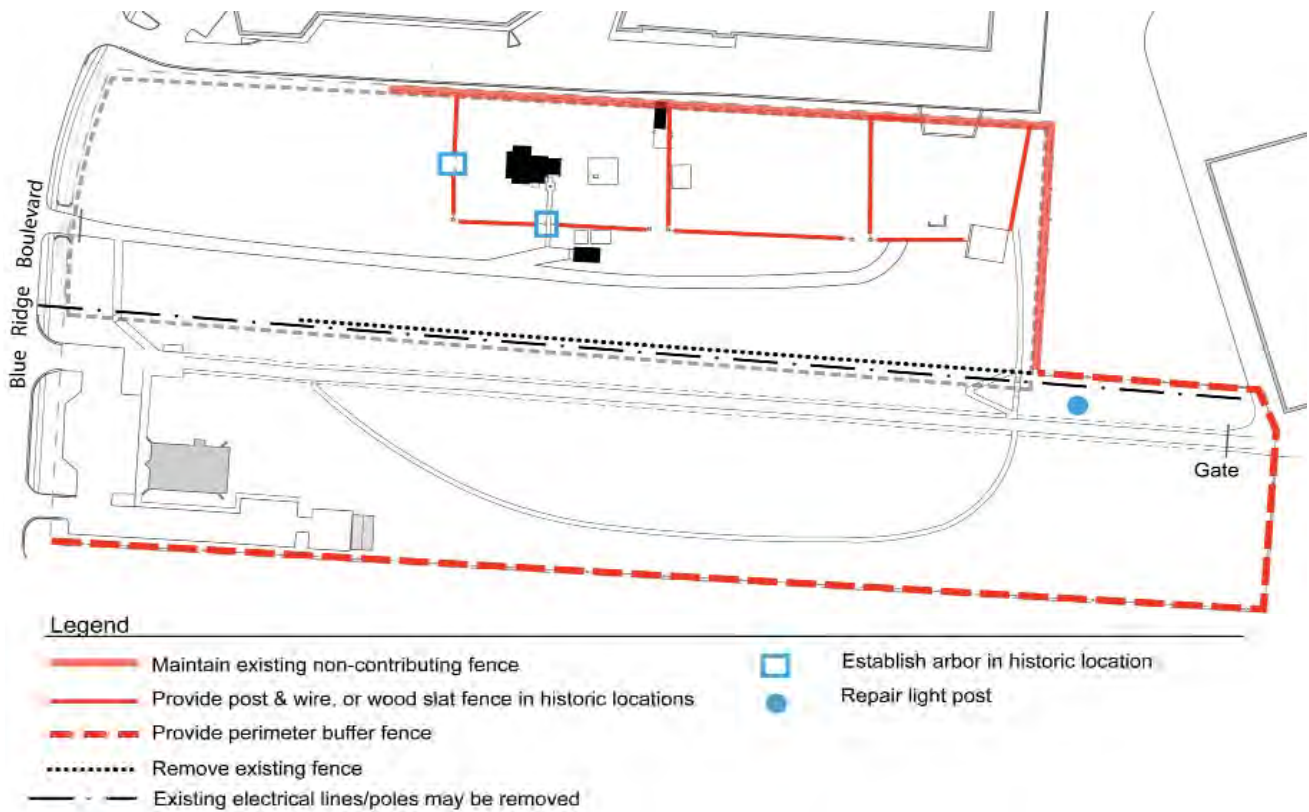


Figure 5-8. Treatment recommendations for small scale features. MBD



Figure 5-9. New fences, arbors and other features for delineating farm and barn yards should be simple, utilitarian designs that do not mimic historic styles that never existed on site. Compatible new farm yard fencing could include wire rails or mesh with round wood or narrow steel posts. These fence types or an agricultural wood rail fence would be used at the barn yard.

- Consider adding rain barrels to catch rainwater from the Farm Home roof for irrigation use during summer months. Historically a rain barrel was located at the kitchen porch near the pump.
 - Design fences, arbors and other features for farm yard or barn yard fencing to be simple, utilitarian features that do not mimic historic styles that never existed on site.
 - For new fencing in historic locations that define farm spaces, design fencing to be of the height and character of historic agricultural fencing that occurred on site. Allow round wood posts and wire rails or wood slats with a simple style and form. Examples of compatible fencing includes wire rails or mesh with round wood or narrow steel posts.
 - Add perimeter buffer fencing at the south and southeast edges of the site to ensure a secure site. Allow a fence type that does not mimic a historic style and is of simple detailing. Ensure the fence not be an opaque screen creating a solid wall, but allow glimpses into the Truman Farm.
 - Arbitrary features or elements such as antique farm implements or structures from other historic properties should not be allowed as they would create a confusing historic appearance.
- 5) Allow select, new contemporary small scale features for visitor comfort and as functional amenities.
- Consider adding trash and recycle receptacles in functional locations compatible with the historic character.
 - Consider adding benches at select locations for resting spots, and at important spots for views within the Truman Farm or the immediate surroundings. Design a contemporary, simple bench.
- 6) Develop a visitor orientation area near the future park facilities parking area to facilitate wayfinding and to provide information when the building is closed.
- Provide visitor information, seating, and shade in a space separated from the parking area and focused towards the historic core.
 - Provide information about Truman Farm as well as other sites associated with the Harry S Truman NHS.
- 7) Consider developing a sign plan and sign vocabulary to provide identification, wayfinding and interpretation in a manner compatible with Truman Farm's historic character.
- Consider developing a Wayside Exhibit Plan.
 - Consider adding new waysides to assist in interpreting restored historic spaces and features including the non-extant historic barns, Solomon Young Barn and granary, and the rotated crops in the south field.
 - Consider adding new waysides to assist in interpreting the influence President Truman had on developing the adjacent Truman Corners.
 - Design of signs and waysides will follow the NPS Graphic Identity Program (DO-52) and NPS standards for signs and wayside exhibits.

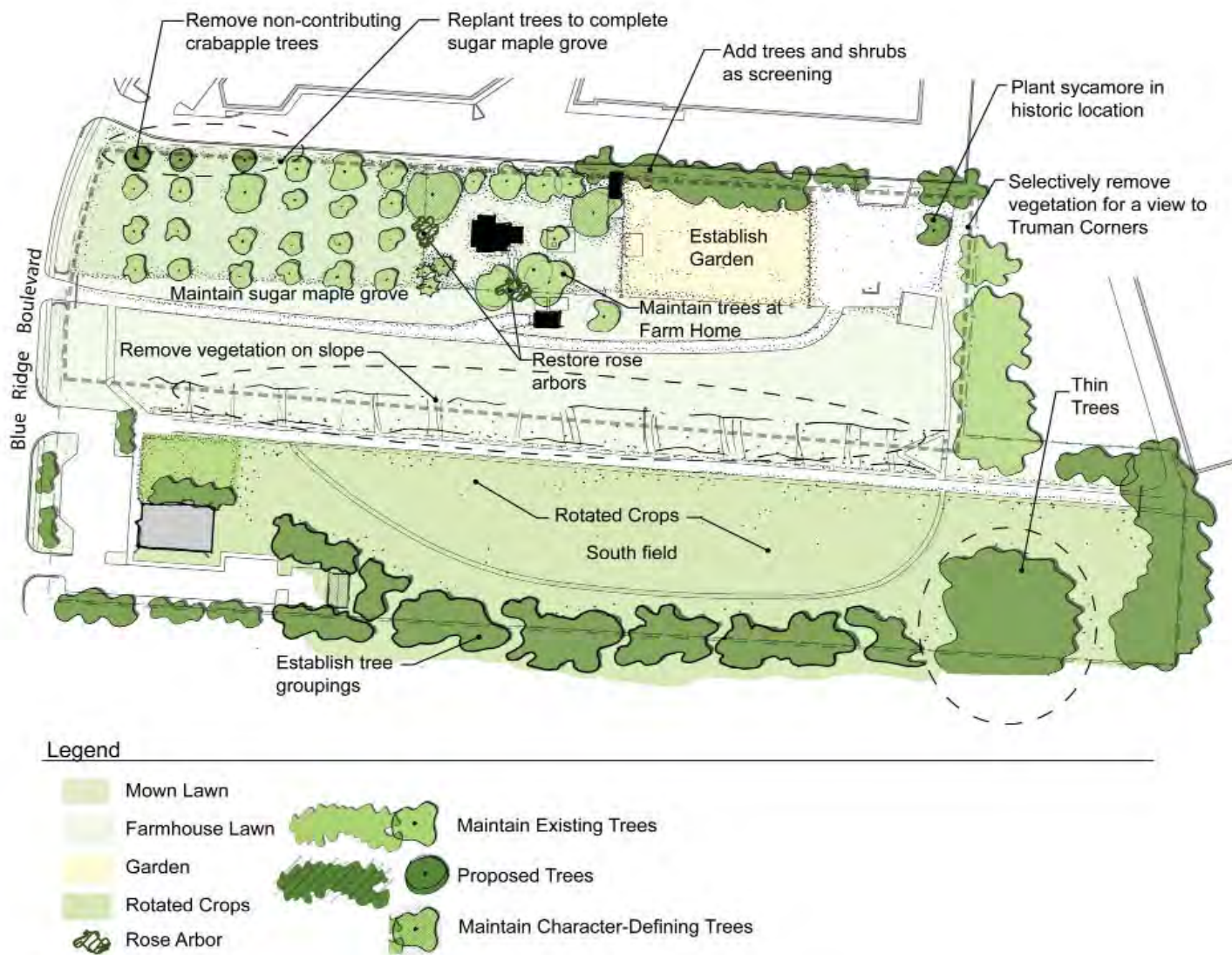


Figure 5-10. Treatment recommendations for vegetation. MBD

Vegetation

The vegetation of the Truman Farm, including extant and non-extant features, are important to the historic character of the property. They also assist in providing an authentic feeling and experience. The treatment for vegetation consists of preserving extant trees that contribute to the historic character or are character-defining, and re-establishing vegetation that existed historically using the same or similar species.

1) Preserve extant vegetation and vegetative patterns that contribute to the Truman Farm's historic character and that have a role in defining the site's spatial organization, views and vistas. Consider having a certified arborist perform a condition assessment and provide maintenance recommendations for mature trees.

2) Preserve the extant sugar maple grove as character-defining trees and as a contributing historic pattern.

- Add three new sugar maple trees to complete the pattern. Remove non-contributing trees that conflict with the restoration of the grove.
- Replace sugar maple trees as needed with the same or similar species to maintain evenly spaced rows and the uniform number of trees per row.
- Maintain the uniform appearance of mown lawn under the grove and throughout the space between the Farm Home and Blue Ridge Boulevard.

3) Preserve the extant contributing trees and groundcover at the Farm Home, as they define the historic spatial arrangement of the Farm Home yard.



Figure 5-11. The historic rose arbors, circa 1930, will be re-established. HSTL 84-82-1

- Maintain the character-defining trees including the oldest deciduous trees near the Farm Home and the pine trees in front of the Farm Home.
 - Maintain the uniform appearance of mown lawn at the Farm Home yard.
- 4) Re-establish vegetation and vegetative patterns that assist in restoring the historic spatial organization of the Truman Farm.
- Restore rose arbors at two locations, on the west and south sides of the Farm Home along the fencing in their historic locations. Add climbing roses of a species, and character similar to those which occurred historically. Add a simple trellis structure to assist in supporting the climbing roses.
 - Consider adding a garden within the historic space. Undertake archeological investigations to determine the actual extents, location, and plant species as these are currently unknown. Consider planting the same or similar vegetation to

that which existed historically. The garden was generally located between the Farm Home and the barns to the east. Consider utilizing volunteers to assist in the layout, planting, and maintenance of the garden.

- Consider adding vegetation in the south field to reflect the historic appearance of crops—clover, alfalfa, or similar species—as would have been grown historically. Maintain crops throughout the growing season and rotate crops each year.

5) Allow removal of non-contributing or non-character-defining vegetation to assist in defining the relationship of Truman Farm to adjacent development (Truman Corners) associated with President Truman.

- Remove select vegetation along northeast edge of the property to provide a narrow view towards Truman Corners.

6) Allow removal of non-contributing or non-character-defining vegetation to restore historic vegetation patterns, and to eradicate invasive species.

- Allow removal of non-contributing vegetation including volunteer trees and shrubs.
- Allow removal of non-contributing, invasive plant species.
- Remove vegetation along slope between the Farm Home and the south field to rehabilitate the historic view and spatial arrangement between the Farm Home and the open field to the south. Maintain this as open mown lawn, with unobstructed views to the Farm Home and maple grove from Tracts 2 and 3.

- Thin trees in the southeast corner of the south field, to allow smaller groupings or groves of trees to increase site safety.

7) Establish a vegetative screen between the Truman Farm NHS and the adjacent north development that is not associated with President Truman.

- Group trees to screen some areas of adjacent residential housing and have some areas open to soften the boundary for aesthetic purposes.
- Establish a vegetative screen of trees and shrubs along the north property line in the area of the Farm Home, garden, and barnyard to screen adjacent commercial development.

8) Establish groupings of deciduous trees along the south property line to buffer adjacent development.

Site Utilities

1) Upgrade and improve utility systems to meet current needs and code requirements. Undertake improvements in a manner that preserves contributing features and the historic character of Truman Farm.

2) Provide utilities for fire suppression in the Farm Home and Garage.

- Extend the water line from the existing line in the current parking area to both buildings.
- Consider installation of a dry well as part of this system, or use a gravity drain from the Farm Home and Garage to the south field. This drain could connect to the perimeter drains that are recommended for the Farm Home.

- Move the existing fire hydrant to a less conspicuous and more functional location.

3) Provide exterior lighting to illuminate the Farm Home and Garage facades as seen from Blue Ridge Boulevard, accomplished in a manner that preserves the Truman Farm's historic character.

- Remove existing yard lights and replace with updated exterior lighting to illuminate the Farm Home and Garage.
- Provide area lighting at the orientation area near the future park facilities. Select or design a style that is contemporary, simple and utilitarian, and that does not evoke a particular era or style. Do not mimic the historic period.
- All new lighting should be energy efficient lighting.

4) Extend electricity and provide power outlets at the barnyard for use in interpreting this space.

5) Consider placing above-ground telephone lines between Tracts 1 and 2 underground. Work with utility company and create a partnership to assist in funding the undergrounding of the lines and removal of the telephone poles and light poles.

Buildings

Three buildings contribute to and are associated with the Truman Farm.

- Truman Farm Home
- Garage
- Poultry House

In order to convey the broad story of Harry S Truman and his relationship with the Truman Farm, all contributing buildings will be preserved with modifications made according to rehabilitation standards. The recommendations for buildings also include priorities for repairs and stabilization.

Generally, the Farm Home will remain the same as current, but improvements will be made to accessibility and stabilization of the foundation, ensuring positive drainage away from the building, and removing moisture from the basement. Recommendations include adding a fire sprinkler system to both the Farm Home as well as the Garage.

To enhance the visitor experience, the Garage use is planned to change from park storage to an interpretive building which visitors could enter or view into, and new exhibits will be added. Recommendations for the Poultry House include maintaining its current use as non-occupied, and viewed from the exterior, while stabilization of existing elements, including repairing/adding a foundation, are recommended.

Farm Home

General Treatment

The rehabilitation approach of the Preferred Alternative allows the Farm Home use to remain the same as current, however features and systems will be

altered as described in the following sections.

Architecture Treatment

Architecture – Roof

Priority: Low

Monitor the condition of the roof as it is +/- 28 years old. No work required at this time.

Architecture – Gutters & Downspouts

Priority: Low

Reattach the north downspout. Monitor the fascia damage. If it worsens beyond the current isolated corner damage, it may indicate a leak within the integral gutter assembly. No work required at this time.

Architecture – Chimneys

Priority: Low

No work required at this time.

Architecture – Exterior Walls

Priority: General: Low; Intersection:

High

Upon completion of the foundation/drainage stabilization, repair the siding at the intersection of the wing to the main house.

Refer to the Accessibility section for exterior wall work related to porch 107. Add a new, prefinished wall louver to match the siding at the two east facing gable ends to facilitate the passive attic venting called for in the structural section.

Architecture – Exterior Trim

Priority: Low

No work at this time, except for any associated exterior wall repair at the intersection repair and porch 107 work.

Architecture – Porches

Priority: *High*

Refer to the Structural Framing section.

Porch decking should be replaced with treated material, primed and repainted.

Porch floor framing is recommended to be replaced at the front porch and porch 106. Porch 107 will be impacted by the accessibility work; please refer to that section.

Architecture – Windows

Priority: *Moderate*

General: Consideration should be given to installing weatherstripping (v-shape, copper at the meeting rail and stiles and felt or similar at the bottom rail) to reduce air infiltration, if the building is to be tempered during the winter. Missing hardware should be inventoried and replaced in-kind, using extant hardware in adjacent locations as the model.

Windows 001 and 002 should be restored to their original operation (probably as awnings), reversed and rehung with proper hinge and closer hardware. Rotted members should be epoxy stabilized or replaced, if not reparable and the entire assembly (frame and sash) should be prepped and repainted. The window wells in which they reside should be cleared of all debris, enlarged slightly to promote adequate ventilation and included on a regular maintenance schedule to prevent future accumulation of debris.

Exterior window trim should be inventoried thoroughly for deterioration. Anticipate epoxy stabilization or replacement of two header trim members.

Architecture – Doors

Priority: *Low*

General: An interpretive plan should

address the visitor route into and through the building. Doors along that route should be surveyed to determine how accessibility may be accommodated (e.g. setting the door in an open position during visitation hours, if that provides adequate clearance, removing the doors, if that provides adequate clearance without compromising security or archiving the doors and frames while replacing them in kind, with wider doors and trim). Thresholds will also require close study in the context of accessibility.

Consideration should be given to replacing the screen door 101A with a screen door that would more closely approximate one of the screen doors depicted in historic photos.

Replace the glazing compound on door 101 with new and repaint the door.

Architecture – Ceiling Finishes

Priority: *General: Low; Fire*

Suppression: *High*

In general, no work is required at the ceilings. However, the addition of a fire suppression system will require access and penetrations through the existing ceilings and therefore these areas will need to be patched and repaired. Careful coordination of the work, to minimize the disturbance of existing finishes, should be part of the planning process. If any historic plaster is uncovered in the course of fire suppression installation, it should be recorded and tested to determine its original composition (for patching and recordation purposes).

Architecture – Interior Wall Finishes

Priority: *General: Moderate; Fire*

Suppression: *High*

General: Once the foundation of the west

wing has been stabilized, the cracks in the plaster board should be repaired. The associated wallpaper should either be repaired or replaced with a wallpaper that closely resembles archived wallpaper, as based upon consultation with the collection's Curator. Peeling paint should be sanded, prepped and repainted to match. The installation of a fire suppression system may require significant removal of existing finishes.

Careful coordination of the work, to minimize the disturbance of existing finishes, should be part of the planning process. If any historic plaster is uncovered in the course of fire suppression installation, it should be recorded and tested to determine its original composition (for patching and recordation purposes).

Due to the limited original plaster as noted previously, it should be a priority not to remove finishes in this area.

Architecture – Interior Trim

Priority: *Low*

General: Trim should be touched up periodically, to protect against wear and tear. Missing sections should be infilled in-kind.

Architecture – Floor

Priority: *Low*

General: Flooring should be touched up periodically (painted or revarnished) to protect against wear and tear. There is already a precedent for using area rugs where floors are subject to heavier traffic. This practice should be continued if it is not in conflict with ABAAS accessibility. Where flooring is split and in danger of splintering or breaking out, the boards should be removed, glued and reinstalled in the same location.

Architecture – Stairs

Priority: *Low*

The Preferred Alternative, according to the International Existing Building Code (IEBC) would be defined as a “Repairs” level scope of work, and essentially requires “maintaining the same level” of egress. Therefore, the handrails and guard rails, though they do not meet the current codes, may be maintained. However, because this is a public building there are several recommendations to improve the existing conditions, although they are not code required.

The railing to bedroom 204 should be replaced by a continuous railing with a simple, round profile that is clearly contemporary – to provide a safe, gripping surface and to distinguish it from a railing of a more historic appearance.

A simple, round railing should be added to the stairway to the basement. Even though this area is not accessed by the public, it still presents a safety hazard.

Architecture – Code/Life Safety

Priority: *High*

A fire suppression system should be added to mitigate the current code infraction of the two-story building. The park should formalize a policy regarding their current administrative control of only allowing six visitors at a time on tours. Having this in place will aid the project in the future. The Preferred Alternative, according to the International Existing Building Code (IEBC) would be defined as a “Repairs” level scope of work and essentially requires “maintaining the same level” of egress. Therefore, no other work is required.

Architecture – Accessibility

Priority: *High*

The Preferred Alternative, according to

the International Existing Building Code (IEBC) would be defined as a “Repairs” level scope of work and essentially requires “maintaining the same level” of accessibility. However, in terms of federal buildings’ ABAAS compliance and the deficiencies noted in previous sections, the following treatments are recommended to improve the level of accessibility offered at the house.

The recommended treatment, as discussed with park staff at the VA/CBA, includes rebuilding the floor of porch 107 and raising it by +/- 6” (with new treated floor framing and replacement treated decking to be painted) to be flush with the finish floor level of the house at that area (99.29’). Doors 110 and 111 and their openings will need to be enlarged by +/- 1.5” to provide 32” clear. As possible, adding onto the existing door stiles would be preferred, so long as this does not sacrifice the door stability/durability. Interior and exterior wall finishes will need to be repaired to accommodate these enlargements. Door hardware will consist of swing free hinges (in order to minimize the needed door width enlargements) and the use of lever style hardware, both of which should match the finish of the existing hardware.

The exterior walk leading to this porch will be reconstructed to accommodate the level change and will be a shallower slope and be considered a “walk” rather than a ramp. Area rugs should be secured to prevent a tripping hazard and allow for an accessible path.

It is understood that the park has several portable ramps stored in the house to aid in the visitors’ access to the house (hall 101/parlor 102 and sitting room 103). However, because they require the aid of another individual, they are

not technically considered to be ABAAS compliant. It is further understood that the park will continue to offer to use the ramps for visitors needing assistance accessing the house. The park will need to maintain an accessible path through the building (furnishings and exhibits).

Structural Treatment

Structural – Foundation

Priority: *High*

Foundation movement continues to cause distress and the damage is likely to become more severe as the structure experiences more and more cycles of movement. Foundation stabilization is recommended. This work should include repair and stabilization of the damaged brick grade beams under the west wing.

Mortar tests results vary. The mortar is extremely soft for interior basement walls and the chimney (interior). The two exposed foundation mortars are moderately soft (at the west/front porch, where it is known 1984 work occurred) to moderately hard at the southeast corner (see Appendix E).

Groundwater enters the basement during wet seasons. A drain system should be provided to prevent water from entering, to prevent decay of wood and deterioration of the rubble masonry walls.

Structural – Floor Framing

Priority: *High: First Floor Framing;
Low: Second Floor Framing*

The first floor framing of the west wing is in danger of decay due to very limited ventilation in the crawl space. The sill plates are decayed and need to be replaced. All sill plates in contact with masonry should be replaced. The wood rim joist that appears to bear directly on

the masonry should also be replaced. Wood members bearing on the basement slab on grade should be protected from decay.

Porch decking decays on a regular basis. Replacement with treated wood is recommended. Porch framing at porch 106 and the west/front porch is weak and likely decayed and should be replaced. (Refer to Accessibility Section for porch 107 work.)

Kitchen floor framing should have more clearance provided between the ground surface and underside of framing.

Although the first floor and second floor live load capacities are limited and below code requirements, no action is recommended at this time because the number of people in the building are managed to prevent large crowds from gathering.

Structural – Roof Framing

Priority: *Low: West Wing & Kitchen; High: Roof Over Bedroom 204*

Although the calculated snow load capacity of the west wing is low, no action is recommended because of the satisfactory performance of the roof over the last century.

The calculated capacity of the roof over bedroom 204 is very low to zero. Although it has performed as-is since 1983, strengthening this roof is recommended. The calculated capacity is too low and it is likely the roof has stood by reducing the factor of safety.

Attic venting should be considered for the attic above bedroom 204 and the attic above the kitchen.

Structural – Ceiling Framing

Priority: *Low*

Although the ceiling framing live load capacity is limited, it is appropriate for a building with managed use such that storage in the attics is not permitted. No action is recommended at this time.

Signage stating storage limitations should be added.

Structural – Wall Framing

Priority: *Low*

Once the foundations are stabilized, the wall finishes in the west wing should be repaired.

Structural – Lateral System

Priority: *Low*

No changes recommended at this time.

Mechanical Treatment

Mechanical –

Priority: *High*

An automated humidity control system for the house is recommended. This system should have the ability to measure the humidity throughout the house and make adjustments to the discharge air humidity level. The goal for the humidity level in the house should be 40-60% with the avoidance of “yo-yo” swings.

There is existing water into the basement for a humidity application and the water quality should be measured and used in selecting a humidification system. Consideration for the mineral content in the discharge airstream from the humidifier system should also be factored in with the historic materials being used in the house to mitigate deterioration and mineral buildup.

The existing duct system should be cleaned, pressure tested, and resealed. This will help with air quality in the house as well as energy conservation.

Clean all existing supply and return grilles.

Replace existing supply grilles in the ceiling of the second floor. Replace the existing supply diffusers that are currently trimmed out with wallpaper.

With no direct outside air intake into the air handling unit, the building is most likely operating in a negative pressure situation. Consideration should be given to adding a direct outside air intake to help pressurize the building to a positive situation which will help keep dirt out and maintaining humidity levels by keeping infiltration levels down.

The existing duct insulation in the attic needs to be repaired and/or replaced.

Provide active crawl space ventilation.

Plumbing –

Priority: *High*

Install a code approved backflow protection device on the existing ¾" cold water line into the house basement.

Provide insulation on the cold water line.

Scope the sanitary line to determine the condition and routing of the pipe out of the basement.

Provide a new 4" sanitary line from the floor drain in the basement to daylight to the south of the building. The line shall tie into foundation drainage line 15'-0" from building exit.

Fire Protection –

Priority: *High*

Provide a new 6" fire line into the building with a new backflow preventor on the line. Provide a new dry-pipe fire protection system for the Farm Home and Garage complete with water flow alarm, air compressor, connection to fire alarm system and all piping in the house. Dry-pipe system shall be zoned into two zones: Farm Home and Garage.

Within the Farm Home, routing of piping shall be carefully coordinated with the architectural fabric of the building. The dry-pipe system in the house shall protect the basement, first floor, second floor, and attics.

Provide a temperature alarm system that provides notification that the basement of the Farm Home is below 40 degrees Fahrenheit and that the water line and fire line are at risk of freezing.

Electrical Treatment

Electrical – Infrastructure

Priority: *Low*

No modifications required.

Electrical – Branch Circuits

Priority: *Low*

Review potential option to replace existing feeders from utility panel, existing main service panel and its breakers.

Electrical – General Power Outlets and Equipment

Priority: *General: Low; Connections to New Mechanical Equipment: High*

All existing wire and devices appear to be in good condition. Existing, recently updated connections to mechanical heat pump unit appear to be in good condition.



Figure 5-12. Existing receptacle, JB 12/6/11

Electrical – Lighting Systems

Priority: *High*

The lighting is very limited in functionality and relies heavily on the use of table lamps or other plug in lamp sources when the Farm Home is utilized in the evening hours. Consideration shall be given to replace existing lighting with new, concealed light sources to allow the Farm Home to more easily be used in nighttime hours. Concealed, fixed sources shall integrate with period table lamps to provide a light level consistent with that of the period of significance.

Consider replacing puck lights with permanent concealed low heat LED lights to allow for a reduced risk of fire.

Consider providing wireless transmission plugs for the lamps to connect to a wireless receiver toggle switch to allow for more control of the table lamps without adding additional wiring.

The existing photocell that controls the exterior lighting shall be removed and the lighting fixtures shall be controlled with a new digital astronomical timeclock which does not require any exterior equipment for control.

Consider providing additional battery

backed up egress lighting to meet egress lighting requirements if the Farm Home is to be utilized during hours of darkness.

Electrical – Telecommunications

Priority: *Low*

Additional telecommunication lines and/or data connections can be added, if desired, by the park.



Figure 5-13. Existing exterior photocell, JB 12/6/11

Electrical – Fire Alarm and Security System

Priority: *High*

Provide a 20amp, 120v power connection to the new dry-pipe sprinkler air compressor to be located within the Farm Home. This single air compressor will provide the compressed air requirements for both the Farm Home and Garage sprinkler systems, per the mechanical treatment recommendation sections.

Provide a new flow and tamper switch at the new sprinkler water entry location. Tie the flow and tamper switches into the existing fire alarm control panel. Provide a single exterior horn/strobe device located on the south exterior wall and provide a new horn/strobe device on the interior of the Farm Home at a centralized location in the entry hall. These horn/strobe devices are to be connected to the existing fire alarm

panel within this building and are to be activated upon fire sprinkler system flow



Figure 5-14. Existing exterior horn, JB 12/6/11

Electrical – Lightning Protection

Priority: *High*

The existing lightning system shall be tested to ensure LPI-175 compliance. Existing downloads that are not neatly routed down the façade and are not securely fastened shall be reconnected in a tight and orderly fashion.



Figure 5-15. Lightning protection downloads, JB 12/6/11

Hazardous Materials Treatment

Asbestos

Priority: *Low*

No asbestos presently identified.

Lead-Containing Paint & Lead Dusts

Priority: *Low*

Loose/flaking LCP or LBP was not identified. Recommend implementing construction safety programs for LBP and LCP, abatement of LCP or LBP is not required for this project.

Lead In Soils

Priority: *Low*

Paint debris was not visually identified on soils surrounding the Farm Home, no action recommended.

Mold/Biological

Priority: *Low*

Mold was not visually identified, no action recommended.

Garage

General Treatment

In general, the Garage will change use from park storage to an interpretive building to retain the story of this building and the decisions Truman made regarding it. An allowance has been added for new exhibits, which will be determined at a future time with park staff input.

Architecture Treatment

Architecture – Roof

Priority: *Low*

No work required at this time.

Architecture – Exterior Walls

Priority: *High*

Due to the structural work required, the analysis and mitigation as outlined in the Structural section is a high priority. The work, ideally, will occur from the interior, however, there may be work required that will necessitate the repair/replacement of the metal siding panels.

Architecture – Exterior Trim

Priority: *Low*

No work at this time, except for any associated exterior wall repair.

Architecture – Windows

Priority: *Moderate*

There is currently no photo documentation to guide the east window work. Remove the shingle infill panel and install two new sashes in this location. Based on the thumb turn hardware remnants, it can be seen that these windows are missing their lower pair of single-hung sash units.

Architecture – Doors

Priority: *High*

Remove the wood 1x infill at the east and west doors. There is currently no photo documentation to guide the door replacement. It may have been a five-panel door or they may have had some degree of fenestration. New hardware and hinges will be required. Door style and hardware finish will require further investigations.

The main door on the west side should be repaired to operate smoothly. Refer to the Accessibility section.

Architecture – Interior Wall Finishes

Priority: *High*

Care should be taken during the structural, fire suppression work to retain all of the plaster remnants in situ. Repair any damaged or replace any missing wood lath in-kind and apply new plaster coats. The plaster mix should match that of the mixture test results in Appendix E.

Architecture – Ceiling Finish

Priority: *High*

The original plaster is no longer extant. There are no interior photos available at this time to guide this work. However, care should be taken to retain the existing lath that is in situ. New wood lath members should be added and plaster coats should be applied following the installation of the new fire suppression system. The plaster mix should match that of the mixture test results in Appendix E.

Architecture – Interior Trim

Priority:

There is no interior trim in situ, and no photo documentation exists. Existing lath should be studied for nail patterns to determine if base or other trim members were present. Based on findings, install new base trim.

Architecture – Floor

Priority: *Moderate*

Retain the portions of the older wood flooring. Repair and patch the existing (older and newer) as needed with the structural work. Sand and refinish. Painting is not recommended due to maintenance and the loss of the differentiation of the older versus newer wood flooring.

Architecture – Code/Life Safety

Priority: *High*

The building will undergo a change in use from a U occupancy to an A-3, and as such it will need to be brought up to current code requirements. It meets the requirements of a VB non-rated building. It is a 340 sf one story building, where 6,000 sf is allowed. The occupant load using 7 occupants/sf falls below the 49 occupant trigger point for 2 exits. Due to NPS Director's Order 28, a fire suppression system will be added; refer to that section. Electrical will also be added to this building to serve the fire alarm, egress lighting and possible new exhibits.

Architecture – Accessibility

Priority: *High*

Because this building will now be open to the public, accessibility must be addressed. The barn doors are wide enough to serve as an accessible entry to the building. A 5'-0" wide treated wood landing (painted) will be built on the west side of the building. The grade and approach will need to be altered to meet the elevation requirements of the new landing. The south leaf will be altered to become the accessible leaf. New lever style hardware and commercial grade hinges will be needed. Hardware finish will need further investigation, perhaps to match the window remnants in situ. The park will need to maintain an accessible path through the building once exhibits are planned and installed.

Structural Treatment

Structural – Foundation

Priority: *Low*

Foundations appear to be adequate and no action is recommended at this time.

Structural – Floor Framing

Priority: *High*

The first floor rim joist framing and connections are too weak for any public use. Strengthening is recommended.

The wood flooring is untreated and located close to the ground. Treated wood flooring is recommended. Codes for new construction require all wood floor framing closer than 18" to the ground to be preservative treated or wood that is naturally resistant to decay.

Structural – Roof Framing

Priority: *High*

The roof anchorage for wind uplift is inadequate. Added connectors are recommended.

Structural – Ceiling Framing

Priority: *Low*

No action is recommended at this time.

Structural – Wall Framing

Priority: *High*

The wall stud to rim joist connection is undefined and should be uncovered, analyzed, and strengthened if necessary. Jamb studs and headers over openings are weak and should be strengthened. The south top of wall plate that is severely decayed by insect damage, and all other decayed members, should be replaced.

Structural – Lateral System

Priority: *Severe*

A north-south lateral system is needed.

Mechanical Treatment

Mechanical –

Priority: *N/A*

Plumbing –

Priority: *N/A*

Fire Protection –

Priority: *High*

Provide a new dry-pipe fire protection system in the Garage. The Garage fire protection system shall be connected to the main line at the Farm Home and be identified as such within the Farm Home and Garage. The dry-pipe system shall be run underground from the Farm Home to the Garage and sloped back to the Farm Home for drainage. The dry-pipe system shall be complete with water flow and connection to fire alarm system. Dry-pipe system can share the air compressor with the house system. The Garage shall be a separate zone from the Farm Home.

Electrical Treatment

Electrical – Infrastructure, Branch Circuits, General Power Outlets and Equipment, Lighting Systems, Telecommunications, Lightning protection

Priority: *High*

Provide new lighting and power within this building as required for potential uses within this reconfigured space.

Electrical – Fire Alarm and Security System

Priority: *High*

Provide single exterior horn/strobe device located on north exterior wall and provide new horn/strobe device on interior of space. These horn/strobe devices are to be connected to existing fire alarm panel

within the Farm Home and are to be activated upon fire sprinkler system flow.

Hazardous Materials Treatment

Asbestos

Priority: *Low*

No asbestos presently identified, no action recommended.

Lead-Containing Paint & Lead Dusts

Priority: *Low*

Loose/flaking LCP or LBP was not identified. Recommend implementing construction safety programs for LBP and LCP, abatement of LCP or LBP is not required for this project.

Lead In Soils

Priority: *Low*

Paint debris was not visually identified on soils surrounding the Garage, no action recommended.

Mold/Biological

Priority: *Low*

Mold was not visually identified, no action recommended.

Poultry House

General Treatment

In general, the building will retain its current use as non-occupied. Visitors will view this building from the exterior. Treatment recommendations are essentially to stabilize the current elements contributing to its degradation.

Architecture Treatment

Architecture – Roof

Priority: *Moderate*

The metal panel roof is only seven years old, however the rust and damage will contribute to further degradation of this outbuilding. Replace the metal panels with new prefinished panels to match the brown/rust color.

Architecture – Walls

Priority: *High*

Refer to structural section.

Architecture – Windows/Openings

Priority: *Moderate*

Keeping the weather out would require a system (perhaps secondary) to enclose the window openings. An interior panel of plexiglass could be considered to aid in weather control and not invite vandalism.

Architecture – Doors/Openings

Priority: *High*

Keeping the weather out and retaining the security of this building (i.e. keeping people out) are high priorities. Once the structural modifications have been made, analysis should be given how to attach a system to keep both weather and people out with minimal visual impact from the exterior. Perhaps, similar to the windows, a secondary plexiglass frame system could be added to the interior.

Architecture – Interior Walls

Priority: *High*

Refer to structural section.

Architecture – Floor

Priority: *Low*

Although the concrete pad is in poor condition, there are no recommendations at this time since the building will not be accessed. Coordinate with foundation work to limit damage to existing slab.

Architecture – Code/Life Safety

Priority: *Low*

This building is not to be open to the public, nor used for storage/staff use. There are no recommendations to upgrade its code life safety elements at this time; however, it is imperative that the building be secured to limit access. See the Door section.

Architecture – Accessibility

Priority: *Low*

This building is not to be open to the public, nor used for storage/staff use. There are no recommendations to alter it to become accessible at this time.

Structural Treatment

Structural – Foundation

Priority: *High*

Foundations are needed. These may be treated skirt boards for gravity support and treated wood or masonry or concrete foundations to anchor the building to the ground.

Structural – Floor Framing

Priority: *Low*

There is no structural reason to modify the dirt floor or thin slab on grade as long as the wood in contact or near these materials are resistant to decay.



Farm Home, ca. 2011

- Repair gutters/downspouts
- Windows - add weather-stripping
- Replace screen at west screen door
- Reglaze transom at main entry door
- Add foundation drain system
- Stabilize foundation from movement
- Replace sill plates in contact with masonry
- Replace rim joist that bears on masonry
- Miscellaneous plaster repair after foundation stabilization
- Protect wood members from decay that bear on basement slab
- Replace porch decking with treated
- Strengthen roof framing over bedroom 204
- Add attic venting at bedroom 204 & kitchen
- Repair west wall finishes due to foundation movement
- Replace porch framing at dining room & west porches
- Allow for investigation/replacement of kitchen floor framing
- Replace <e> supply grills at 2nd floor & wallpaper wrapped diffusers
- Provide new auto humidity control system
- Clean, pressure test & reseal <e> duct system
- Clean <e> supply & return grills
- Add a direct outside air intake
- Repair/replace <e> duct insulation
- Provide active crawl space ventilation
- Install a code approved backflow protection device on <e> 3/4" cold water line
- Insulate cold water line
- Camera scope sanitary sewer line
- Provide power to humidity control system
- Replace <e> photocell controls to exterior lights with new digital time clock
- Replace <e> light pucks
- Fire alarm upgrades
- Reattach lightning system
- Install new fire sprinkler
- Improve ramp at Porch 106 to be ABAAS compliant
- Enlarge doors 107 and 108
- Repair walls (interior and exterior)
- Replace <e> feeders from utility panel, main service & breakers



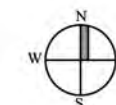
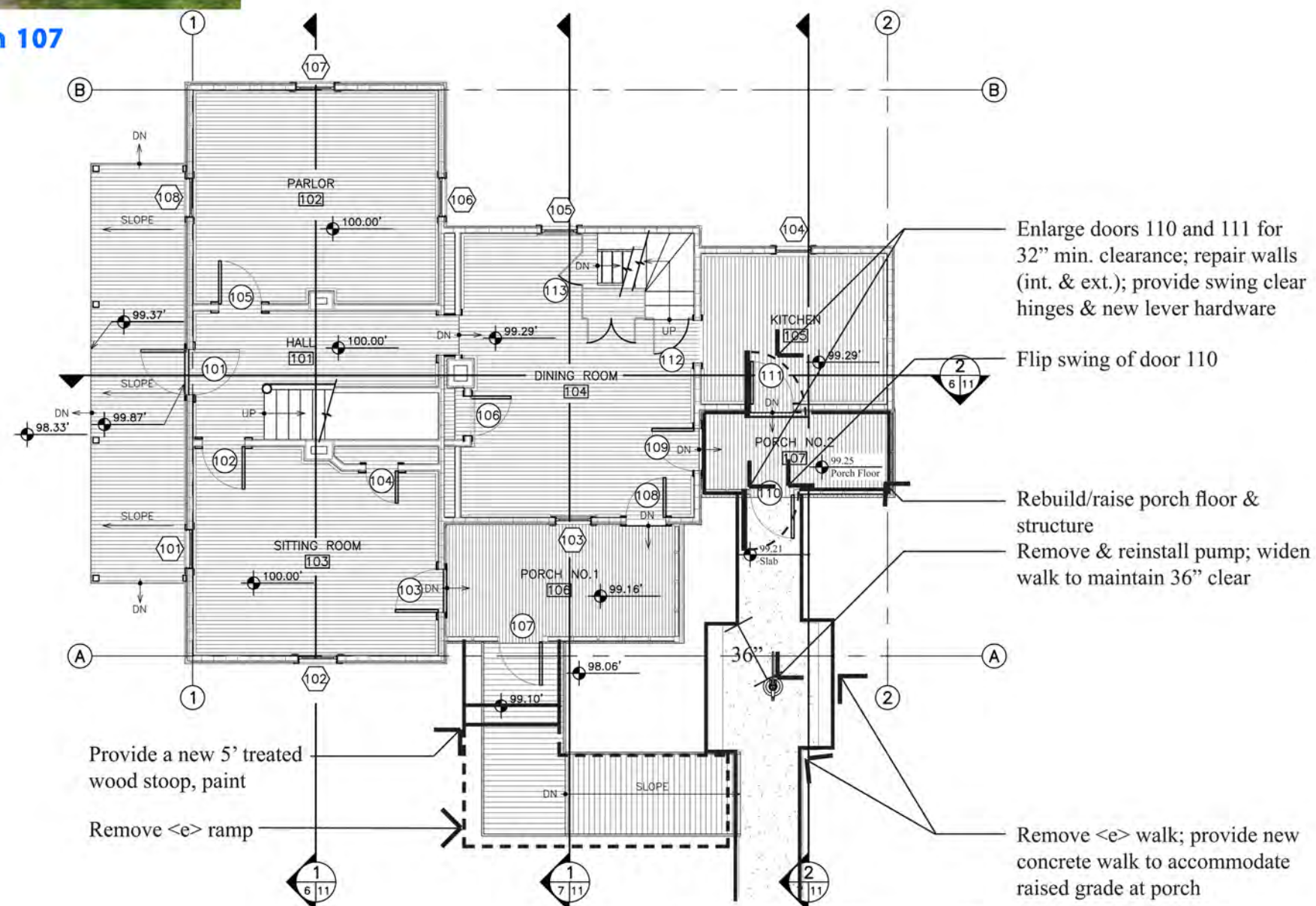
Existing Condition of Porch 107

Retain porch roof framing as is

Raise door up +/- 6"; enlarge for 32" clear; provide new swing clear hinges & lever hardware

Rebuild porch floor structure +/- 6" raised; new porch decking (treated), paint

New walk +/- 13" raised



<p>NOVEMBER 2012</p> <p>UNITED STATES DEPARTMENT OF THE INTERIOR TRUMAN FARM NATIONAL HISTORIC SITE</p>	<p>TITLE OF PROJECT TRUMAN FARM HISTORIC STRUCTURES REPORT</p> <p>TITLE OF DRAWING PREFERRED ALTERNATIVE - FARM HOME</p> <p>NAME OF PARK TRUMAN FARM - HARRY S TRUMAN NATIONAL HISTORIC SITE</p> <p>REGION MIDWEST</p> <p>COUNTY JACKSON</p> <p>STATE MISSOURI</p>
-----------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Install new lever hardware at south leaf

Provide new throwbolt at north leaf

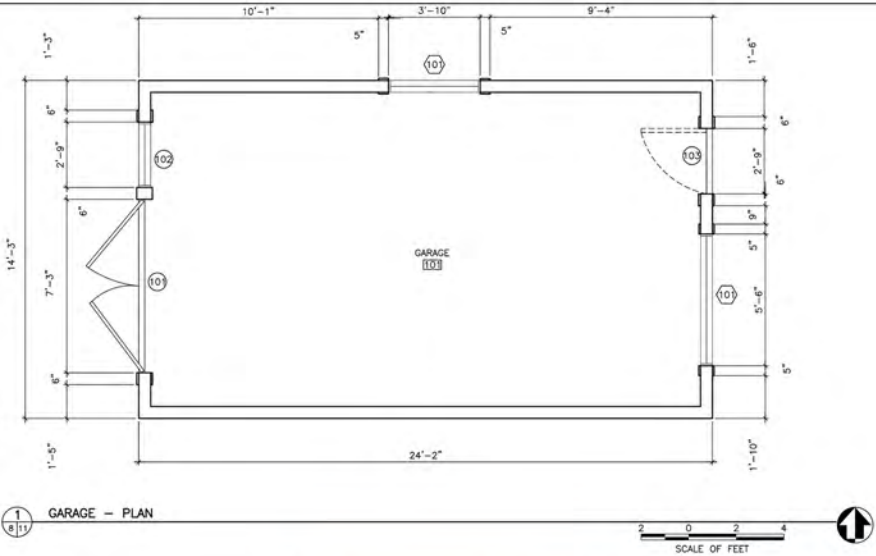
Regrade for 6" max. at edge



Garage, ca. 2011

Garage

- Strengthen floor rim joist
- Replace flooring with treated
- Allow for more decay replacement
- Add a north/south lateral system
- Repair doors/hinges
- Verify/strengthen wall studs & rim joist
- Strengthen all openings studs & headers
- Add connections for roof anchorage (wind uplift)
- Replace south top of wall plate (decayed by insects)



New 5' wide treated wood landing (painted), with edger

Sloped grade to meet ABAAS

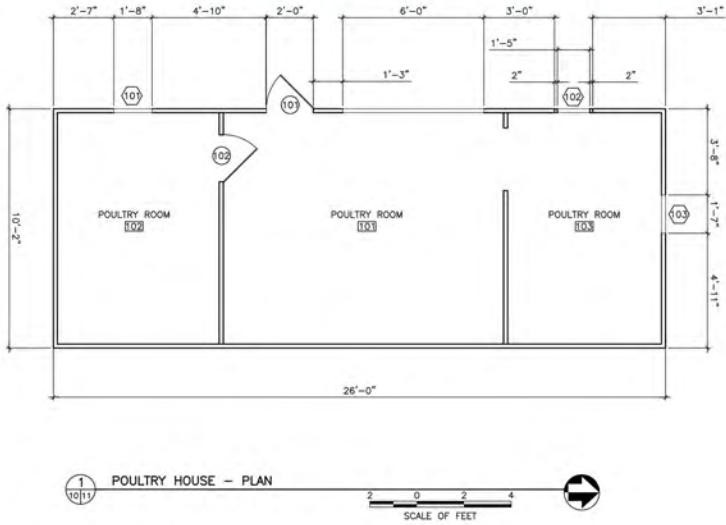


Existing Condition of Garage Interior



Poultry House, ca. 2011

- Add a foundation
- Add 2 purlins & wall support
- Repair damage from tree
- Replace wall sheathing with treated
- Anchor walls to new foundation
- Add a lateral bracing system (nail sheathing to girts or add diagonal sheathing)



NOVEMBER 2012	TITLE OF PROJECT TRUMAN FARM HISTORIC STRUCTURES REPORT		
	TITLE OF DRAWING PREFERRED ALTERNATIVE - GARAGE & POULTRY HOUSE		
	NAME OF PARK TRUMAN FARM - HARRY S TRUMAN NATIONAL HISTORIC SITE		
UNITED STATES DEPARTMENT OF THE INTERIOR TRUMAN FARM NATIONAL HISTORIC SITE	REGION MIDWEST	COUNTY JACKSON	STATE MISSOURI

OTHER ACTION ALTERNATIVES: ALTERNATIVES 1, 3A AND 3B

TREATMENT ALTERNATIVE 1: THE FAMILY FARM

General

Alternative 1: The Family Farm proposes conveying the introspective story of the evolution of the Truman's family farm from Solomon Young's original homestead through the time the Truman family lived, managed or otherwise had a direct connection with the farm.

A treatment approach of rehabilitation is proposed with this alternative, and would focus on repairing extant contributing features and re-establishing the farm's historic character through acceptable preservation practices.

As a rehabilitation approach, Alternative 1 proposes preservation of all extant contributing features (within the period of significance of 1906 to 1965), and the addition of new compatible features. With so many missing features and just a few additions, Alternative 1 provides an authentic experience, but does not fully convey vibrancy of farm life. In addition to repair of extant features, more interpretive media would be used to convey the full story.

Alternative 1 is compatible with the Long-Range Interpretive Plan in that it conveys Primary Theme 1 as it conveys events of Truman's presidency, and Primary theme 8 as reflective of Truman's character learned from his time on the farm.

In summary, Alternative 1 proposes the following actions.

- Provides very little change to the existing condition, with few modifications to the site and no significant modifications to the Farm Home.
- Allows for interpretation related to telling the full history of the farm, and how it evolved has evolved from 1906 through the end of the period of significance.
- Development of a visitor contact station, associated visitor facilities, and maintenance facilities on Tract 3. This is an action common to all alternatives.
- Repair all extant contributing features in situ for features in their historic location. For those moved from original locations, repaired features would be sited in new locations approximate to their historic location or in relationship to other historic features.
- Allows the addition of new compatible features to tell broad story. The foundations of the Solomon Young Barn and Granary would marked on the surface to illustrate their location in the cultural landscape.
- The historic spatial character of the Truman Farm would be re-established by the use of various surface treatments in the different historic spaces. For example, fescue grasses and clovers would delineate the historic garden space, and mown grasses would delineate the barnyard space.
- The pedestrian circulation system would include the restoration of the historic entrance drive as a gravel and mown grass surface. New paths would be added to provide a connection

with the new orientation space at the visitor contact center.

- Historic structures would be repaired but would not provide visitor access.
- Modifications to the Farm Home would include ABAAS access at the south east porch entry.
- Adjacent development would be screened from the Truman Farm (all three tracts) using vegetation. A visual connection would be made between the Truman Farm and adjacent development associated with President Truman (Truman Corners).

Archeology

Alternative 1 proposes preserving and protecting all known and presumed archeological remains.

This alternative does not propose further archeological investigations.

Spatial Organization

The historic spatial organization of the Truman Farm and its relationship to surrounding farm lands that were once a part of the farm would be re-established to the extent possible.

- The historic spatial arrangement of the distinct spaces of the historic core would be restored using groundplane treatments to distinguish the different spaces. No three-dimensional elements would be added.
- The historic space of the sugar maple grove would be maintained by replacing missing trees (3), and by maintaining the mown lawn.
- The historic spatial relationship between the historic core and the

surrounding farmland (mainly Tract 2) would be re-established by removing select areas of overgrown vegetation.

- An open visual relationship would be made between the visitor contact center and the Farm Home to connect the two spaces.
- An open view in front of the visitor contact center would occur along Blue Ridge Boulevard, providing views towards the Farm Home and sugar maple grove.

Topography and Landform

Topography and landform at the Truman Farm would be preserved in this alternative.

- The original level topography of the historic core, including the gently sloping gradient extending from the Farm Home would be preserved.
- The historic 1950s slope between Tract 1 and Tracts 2 and 3 would be preserved. Since some vegetation would be allowed to be removed, erosion control would occur on the slope.
- The level topography of the adjacent 1950s parcel including the road grade and the sloping grass area would be preserved.
- The existing topography at the barnyard would remain.

Views and Vistas

Alternative 1 proposes preserving historic views into and from the Truman Farm, and restoring select views.

- The view from Blue Ridge Boulevard and along the drive into the Farm

Home would be preserved as would the views into the sugar maple grove.

- Views into the Truman Farm from the visitor contact center and between the Farm Home and Tract 2 would be established by removing select non-contributing vegetation.
- Select, narrow views between the Truman Farm and Truman Corners would be established at the barnyard, and at the eastern end of the 1950s road.

Circulation

Alternative 1 proposes restoring the Truman Farm's historic vehicular and pedestrian circulation system by removing non-historic features and by re-establishing those features, drives and walkways, that contribute to the significance of the cultural landscape.

- Non-contributing circulation routes (the existing asphalt parking area and drive, concrete curb and concrete walks) will be removed.
- The original entrance drive from Blue Ridge Boulevard to the Garage would be restored as a gravel drive. A mown path would follow the original alignment of the drive, connecting the Garage with the barnyard.
- The 1950s road built to provide access to a never-completed commercial development would be preserved and resurfaced.
- Universal accessibility to the Farm Home and select historic structures would occur including ABAAS accessibility to the interior of the Farm Home, and to the Garage and

Poultry House (exterior not interior access).

- New paths for pedestrian circulation would occur, including one from the orientation space to the restored drive on the west, and another connecting the barnyard with the 1950s roadway along a historic alignment.
- Two ABAAS accessible parking spaces would be located near the Farm Home, on the restored entrance drive and south of the Garage. Access to the historic core would be via a locked gate.

Small Scale Features

This alternative proposes maintaining and preserving contributing features (i.e. extant stone posts), and allowing for select non-contributing features to remain that have functional value or that do not detract from the historic setting.

- The original stone posts in their original locations would be maintained and repaired, and the stone posts in disrepair (currently overturned) will be re-set in locations as close to original positions as possible.
- The Poultry House fence and adjacent concrete pad would be repaired.
- The 1950s light posts at the 1950s roadway, would remain, maintained and repaired as needed.
- All existing non-contributing fencing (posts and fabric) would remain, maintained to provide for security and identification of the park boundary including those along north and east edges of the site.

Vegetation

Alternative 1 proposes to preserve extant vegetation, and vegetative patterns that contribute to the Truman Farm's historic character, and that have a role in defining the site's spatial organization, views and vistas.

- As a character defining feature, the extant sugar maple grove would be preserved. Three new sugar maple trees will be added to complete the pattern, and non-contributing trees that conflict with the grove will be removed.
 - Extant contributing trees and groundcover at the Farm Home would be preserved as they define the historic spatial arrangement of the Farm Home yard.
 - Different grass types and grasses cut to different heights would be used to define historic spaces, such as the barnyard (mown grass) and garden (fescue or clover), in the south field grasses would be planted that mimic crops.
 - A vegetative screen would be added to the north edge of the farm, and to select portions of the east and south edges. Narrow areas of trees would be removed on the east to provide the view to Truman Corners.
 - Some trees on the slope between the Farm Home and Tract 2 would be removed, to provide glimpses into the field.
- A "Main Entrance" would be created to the Farm Home as the southeast porch entry (as the family would have used), and this entry would be altered for ABAAS.
 - The Garage would be viewed from the exterior with interpretive media.
 - The Poultry House would also be viewed from exterior with interpretive media.

Buildings

The historic Farm Home and two historic structures would be repaired, and would continue to be interpreted to visitors.

TREATMENT ALTERNATIVE 3A: RESTORATION TO 1917

General

Alternative 3A: Restoration to 1917, proposes to restore the Truman Farm to the appearance of the farm between the years 1906 to 1917 when Harry S Truman lived on the farm and managed day-to-day operations.

A treatment approach of restoration is proposed with this alternative, and would focus on restoring contributing features and historic setting to reflect a date near the end of the time President Truman's lived on the farm.

As a restoration approach, Alternative 3A would preserve those features that contribute to the period of 1906 to 1917, including buildings and structures, and the restoration of missing features from this period. This approach would also include the removal of non-contributing features (outside of this period, including some that date to other times with the period of significance.

Historical documentation for the period of 1906 to 1917 is available to a certain extent through historic photographs,. However additional information would be required to authentically restore the Truman Farm to this period, including archeological investigations.

Alternative 3A proposes to tell the story of life on the farm as it would have looked when President Truman's time living on the farm.

This alternative is compatible with the Long-Range Interpretive Plan in that it conveys Primary Theme 8 - Truman's Character Learned from his Time on the Farm.

In summary, Alternative 3A proposes the following actions.

- Extensive modification to the farm site would occur through the re-construction of missing features and changes to the topographic form of Tract 2 to restore the relationship of the Farm Home to the south field during 1906 and 1917. This would eliminate the 1950s slope, road and level topography, a contributing feature of the period of significance.
- Extensive changes to the Farm Home, Poultry House, and sugar maple grove would occur to return these to their appearance between 1906 and 1917.
- Development of a visitor contact station, associated visitor facilities, and maintenance facilities on Tract 3. This is an action common to all alternatives.
- Interpretation would be focused on telling the story of Harry S Truman living and managing the farm as a young man, and those features at were present at the time. Allows interpretation of site and Farm Home, Garage, and Poultry House at one moment in time.
- Some interpretive media would be needed to assist in telling farm years story, more extensive interpretive media needed to tell broader and evolutionary story.
- Propose the repair of features that contribute to the period of 1906 to 1917. Removes or moves contributing features from later periods including the Poultry House, stone posts and 1950s road.

- The historic spatial character of the Truman Farm would be restored using new fencing that reflects the aesthetic of the original fencing and set along historic alignments.
- The pedestrian circulation system would include restoration of the gravel drive with new paths on the east and west.

Archeology

Alternative 3A proposes preserving and protecting all known and presumed archeological remains.

This alternative requires additional archeological investigations to accurately depict the site as it appeared in 1957.

- At a minimum, needed investigations would include garden location and species grown, barnyard surfacing, extent of below-grade foundations.
- Additional historical research is needed for fencing types and locations.

Spatial Organization

Alternative 3a propose the restoration of the historic spatial organization of the Truman Farm and the relationship between the historic spaces.

- The historic spatial arrangement of the distinct spaces of the historic core would be restored using restoration of missing fences, and restoration of the ground plane of each space to reflect the character of the 1906 to 1917 period.
- Tract 2 would be extensively modified to restore the spatial/visual relationship between Farm Home and the south field including

vegetation removal, undergrounding the electrical lines, and regrading to eliminate the grade change between the two areas.

- The spatial relationship between the historic core and the surrounding farmland (mainly Tract 2) would be re-established by removing select areas of overgrown vegetation.

Topography and Landform

This alternative proposes preserving the extant topography of the Farm Home, and extensive regrading in the barnyard and on Tract 2 to restore the appearance of the 1906 to 1917 period.

- The level topography of the historic core, including the gently sloping gradient extending from the Farm Home, would be preserved.
- The topography in the barnyard would be regraded to restore the slope to the barn, and the slope to the north.
- Tract 2 would be filled with an evenly sloping gradient from the fence line extending to the south. The re-grading would occur from Blue Ridge Boulevard to the east edge of the site.

Views and Vistas

Alternative 3A proposes preserving the historic views of 1906 to 1917 into the Truman Farm. Views from the Truman Farm to adjacent development would be screened.

- The view from Blue Ridge Boulevard and along the drive into the Farm Home would be preserved as would the views into the sugar maple grove.

- Views into the Truman Farm from the visitor contact center and between the Farm Home and Tract 2 would be restored.
- Vegetative screens would buffer views from Truman Farm towards adjacent development to the north, east, and south.

Circulation

Alternative 3a proposes restoring the Truman Farm's vehicular and pedestrian circulation system of the period of 1906 to 1917 by removing non-contributing features, restoring missing features (drives and walkways), and adding new compatible features for accessibility.

- Non-contributing circulation routes (the existing asphalt parking area and drive, concrete curb and concrete walks) would be removed.
- The original entrance drive from Blue Ridge Boulevard to the Garage would be restored as a compacted earthen drive, and extended as such to the barnyard.
- The barnyard would be restored as a dirt/compacted soil surface.
- The 1950s road would be removed.
- Universal accessibility to the Farm Home and select historic structures would occur including ABAAS accessibility to the interior of the Farm Home, and to the exterior of the Garage and Poultry House.
- New paths for pedestrian circulation would occur, including one from the orientation space to the restored drive on the west, and another from the

barnyard, and looping through Tract 2 to the visitor contact center.

- Use of the entrance drive would be limited to ABAAS, maintenance, emergency and pedestrian use.

Small Scale Features

This alternative proposes preserving and restoring features present during the period of 1906 to 1917.

- The stone posts would be removed as the date they were added to the farm is not known and since it is unknown/unlikely that they date to 1917.
- The concrete pad and fence at the Poultry House would be removed.
- The water pump would be restored to its 1917 appearance.
- Fencing would be restored around the Farm Home yard and garden yard, as well as at the site's perimeter on the north and east edges. Additional research is needed to provide an authentic restoration of these missing features.
- The 1950s light posts at the 1950s roadway would be removed.

Vegetation

Restoration of the vegetation to reflect the 1906 to 1917 period would include removal of most existing vegetation to restore the historic patterns and species that existed in this time frame.

- The sugar maple grove would be restored by removing all existing trees, and planting new sugar maple trees of one size and in the original pattern and spacing to achieve the historic uniform appearance. The

pattern of the grove was changed at the time the asphalt drive and parking were installed.

- Extant contributing trees and groundcover at the Farm Home would be preserved as they define the historic spatial arrangement of the Farm Home yard.
- Additional pine trees would be added to the site, located north of the Farm Home, and a sycamore tree would be added to the barnyard.
- Different grass types and grasses cut to different heights would define historic spaces. Tall native grasses would be grown in the south field in Tract 2, mown lawn grasses would cover the Farm Home yard, and a tall grass lawn would occur under the sugar maple grove.
- Within the garden space, the garden and orchard would be planted, however further research would be needed to restore these elements to accurately reflect where the garden was located and which species were planted.
- A solid vegetative screen would be added to the north and east edges of the farm to screen adjacent commercial development (including screening Truman Corners). A tree buffer would be added to the south to screen the residential development.

Buildings

Restoration to a period of 1906 to 1917 in this alternative would require few modifications as changes were made to the Farm Home during the 1980s to reflect this period.

- The Farm Home would be restored to the 1917 appearance, requiring a few modifications. The doors would remain as they are and ABAAS access would be to the porch and first floor but with limited access non-ABAAS compliant, similar to today's use.
- The Garage would be preserved, with no modifications.
- The Poultry House would be removed and relocated to its 1917 location; this would require additional research to verify the exact location of the building in 1917. The Poultry House would be viewed from the exterior with interpretive media.

Utilities

This alternative includes the common to all treatments described earlier. In addition, the restoration to the 1906 to 1917 period requires the undergrounding of the overhead utility lines at the edge between Tract 1 and 2. The 1950s light posts would be removed.

TREATMENT ALTERNATIVE 3B: RESTORATION TO 1957

General

Alternative 3b: Restoration to 1957, proposes to restore the Truman Farm to resemble the family farm as it would have looked during President Truman's life time.

A treatment approach of restoration is proposed with this alternative, and would focus on restoring contributing features and the historic setting to reflect a date near the end of the period of significance. Restoration to this date would convey the appearance of the farm as President Truman would have known it. The site has the most contributing features and available historical documentation for 1957. The farm retains the most integrity for the date of 1957.

As a restoration approach, Alternative 3b proposes preservation and restoration of all extant contributing features, restoring contributing features and historic setting to reflect a date near the end of the period of significance. This would include the original sugar maple grove (now modified) and the Solomon Young Barn, both extant in 1957. This approach would also include the removal of non-contributing features (outside of this period, including some that date to other times with the period of significance.

Alternative 3b is compatible with the Long-Range Interpretive Plan in that it conveys Primary Theme 8 - Truman's Character Learned from his Time on the Farm, and Primary Theme 8 – Truman's character learned from his time on the farm.

In summary, Alternative 3b proposes the following actions.

- Extensive modifications to the site and buildings would occur including restoration of the Farm Home, fencing, vegetation and structures to the 1957 date.
- Develop a visitor contact station, associated visitor facilities, and maintenance facilities on Tract 3. This is an action common to all alternatives.
- Interpretation would focus on the evolution of the family farm including the selling of the farm land and President's Truman influence on adjacent development. Allows for interpretation of site and Farm Home, Garage, and Poultry House as they existed in one moment in time.
- Repair or restore all extant contributing features (those extant at 1957), and remove non-contributing features.
- The historic spatial character of the Truman Farm would be restored by adding new fencing, in the aesthetic of the 1957 fencing, and set along 1957 alignments and by adding surface materials to reflect those extant in 1957.
- The pedestrian circulation system would include restoration of the gravel drive with new paths on the east and west.

Archeology

Alternative 3b proposes preserving and protecting all known and presumed archeological remains.

This alternative requires additional archeological investigations to accurately depict the site as it appeared in 1957.

- This would include investigations on fencing alignments, vegetation types, and non-extant building and structure foundations.
- Further archeological research necessary to verify features (Farm Home, fencing) and space in order to convey accurately; least opportunity to convey Truman's influence on surrounding lands;

Spatial Organization

Alternative 3b proposes the restoration of the spatial organization of the Truman Farm and the relationship between the historic spaces, including the relationship between the remaining farm parcels and adjacent development influenced by President Truman, as existed in 1957.

- The historic spatial arrangement of the distinct spaces of the historic core would be restored using restoration of missing fences, and restoration of the ground plane of each space as it existed in 1957.
- The level topography of the adjacent 1950s parcel including the road grade and the sloping grass area would.
- This alternative re-establishes the spatial/visual relationships of 1957 by resurfacing the barnyard with compacted soil/dirt, as well as using different kinds of grasses and other vegetation to indicate the historic spaces. Fencing is restored to define the Farm Home yard and garden spaces.

Topography and Landform

This alternative proposes preserving the extant topography of the farm through 1957 including the landform of the development site in Tract 2.

- The level topography of the historic core, including the gently sloping gradient extending from the Farm Home, would be preserved.
- The topography in the barnyard would be regraded to restore the slope to the barn, and the slope to the north.
- Tract 2 would be filled with an evenly sloping gradient from the fence line extending to the south.

Views and Vistas

Alternative 3b proposes preserving historic views of 1957 into the Truman Farm and to surrounding development influenced by President Truman. Select views from the Truman Farm would be screened at the adjacent development not influenced by President Truman.

- The view from Blue Ridge Boulevard and along the drive into the Farm Home would be preserved as would the views into the sugar maple grove.
- Views into the Truman Farm from the visitor contact center and between the Farm Home and Tract 2 would be restored.
- Vegetative screens would buffer views from Truman Farm towards adjacent development to the north and south.
- Select, narrow views between the Truman Farm and Truman Corners

would be established at the barnyard, and at the eastern end of the 1950s road.

Circulation

Alternative 3b proposes restoring the Truman Farm's vehicular and pedestrian circulation system to 1957 by removing non-contributing features, restoring missing features (drives and walkways), and adding new compatible features for accessibility.

- Non-contributing circulation routes (the existing asphalt parking area and drive, concrete curb and concrete walks) would be removed.
- The original entrance drive from Blue Ridge Boulevard to the Garage would be restored as a gravel surface, and extended as such to the barnyard.
- The barnyard would be restored as a dirt/compacted soil surface.
- The 1950s road would be restored.
- Universal accessibility to the Farm Home and select historic structures would occur including ABAAS accessibility to the interior of the Farm Home, and to the exterior of the Garage and Poultry House.
- New paths for pedestrian circulation would occur, including one from the orientation space to the restored drive on the west, and another from the barnyard, to the 1950s road.
- Use of the entrance drive would be limited to ABAAS, maintenance, emergency and pedestrian use.

Small Scale Features

This alternative proposes preserving and restoring features present by 1957.

- The stone posts would be restored, but it would be difficult to place them accurately as half were originally on parcels no longer part of the Truman Farm.
- The concrete pad and fence at the Poultry House would be removed.
- The water pump would be restored to its 1917 appearance.
- The non-extant fencing around the Farm Home yard and garden as well as around the farm's perimeter on the north and east would be restored, further research is needed to accurately depict its 1957 appearance (most likely post and wire, requires verified).
- The 1950s light posts at the 1950s roadway would be restored.
- The extant barnyard foundation (underground) would be repaired.

Vegetation

Restoration of the vegetation to reflect the 1957 date would include removal of existing vegetation to restore the historic patterns and species that existed in this time frame.

- The sugar maple grove would be restored by removing all existing trees, and planting new sugar maple trees of one size and in the original pattern and spacing to achieve the historic uniform appearance. The pattern of the grove was changed at the time the asphalt drive and parking were installed.

- Extant contributing trees and groundcover at the Farm Home would be preserved as they define the historic spatial arrangement of the Farm Home yard.
- Additional pine trees would be added to the site, located north of the Farm Home, and a sycamore tree would be added to the barnyard.
- Different grass types and grasses cut to different heights would define historic spaces. Mown lawn would be maintained at the sugar maple grove and in the Farm Home yard. Different grasses would depict the garden yard, and tall native grasses would be grown in the south field in Tract 2.
- Within the garden space, the garden and orchard would be planted, however further research would be needed to restore these elements to accurately reflect where the garden was located and which species were planted.
- The two rose arbors from the 1940s would be restored. This would require further research as to the materials used for the arbor and types of roses and color grown.
- A solid vegetative screen would be added to the north and east edges of the farm to screen adjacent commercial development. A narrow opening would be provided in the screen on the east and at the end of the 1950s road for views into Truman Corners. A tree buffer would be added to the south to screen the residential development.

- Trees would be removed along the slope to open the view to the south field.

Buildings

Alternative 3b requires extensive alterations to the Farm Home to restore the building to its 1957 appearance.

- Restoration of the Farm Home to 1957 would include rebuilding one chimney, reconstructing a full two story east wing, and altering both of the east porches. ABAAS access would be to the porch, and first floor but with limited access, similar to today's use.
- The Garage would be restored, and would include the re-installation of the recently removed brick metal siding.
- The Poultry House would be restored, and would remain in its current location.

Utilities

Recommendations for utilities include repairing and maintaining the 1950s light posts at the 1950s roadway, as well as other recommendations that are common to all alternatives.

ALTERNATIVES COMPARISON

A comparison of the alternatives and the degree to which each alternative fulfills the goals of the proposed project is summarized in Table 2.

Table 2. Alternatives Comparison

Goals	Treatment Alternative No Action	Treatment Alternative 1	Treatment Alternative 2 (preferred)	Treatment Alternative 3a	Treatment Alternative 3b
Protect Cultural Resources And Natural Resources <ul style="list-style-type: none"> Represent Harry S Truman's relationship with the Truman Farm from his youth to his later years Preserve cultural landscape, including features and character that contribute to NHRP and NHL districts with an extended POS (1906 to 1965) Address building issues such as deterioration and deficiencies 	<p>This goal would be partially met under the no action alternative. Would represent the full story of Harry S Truman from his early years, through his presidency and after he left office. There would be no rehabilitation or restoration of historic structures or the cultural landscape. Current levels of maintenance would continue and building deterioration and deficiencies would not be addressed.</p>	<p>This goal would be met under treatment alternative 1. The evolution of the site from Solomon Young's original homesteading through the time the Truman family had a direct connection with the farm would be represented, which reflects the POS. Contributing site features and character would be retained and some non-contributing structures and vegetation would be removed. Drainage would be improved around the Farm Home, Garage, and Poultry House. Extant contributing features would be repaired.</p>	<p>This goal would be met under treatment alternative 2. The full story of Harry S Truman's life would be represented. Contributing site features and character would be retained and some non-contributing structures and vegetation would be removed. Drainage would be improved around the Farm Home, Garage, and Poultry House. Extant contributing features would be repaired.</p>	<p>This goal would be partially met under treatment alternative 3a. Would only represent only one phase of Harry S Truman's life. Would retain the least extant features. Would remove 1950s road, light posts, stone posts and regrade the site. Drainage would be improved around the Farm Home, Garage, and Poultry House. Retained extant contributing features would be repaired.</p>	<p>This goal would be partially met under treatment alternative 3b. Would represent the full story of Harry S Truman's life. Contributing site features and character would be retained and some non-contributing structures and vegetation would be removed. Drainage would be improved around the Farm Home, Garage, and Poultry House. Extant contributing features would be repaired</p>

Goals	Treatment Alternative No Action	Treatment Alternative 1	Treatment Alternative 2 (preferred)	Treatment Alternative 3a	Treatment Alternative 3b
Provide for Visitor Enjoyment <ul style="list-style-type: none"> Create opportunities for visitor engagement in an authentic, interactive experience that conveys the POS, while providing for ease of access Develop partnerships to increase awareness of the Truman Farm and create corps of stewards and volunteers 	This goal would not be met under the no action alternative. The focus of interpretation would continue to be the interior of the Truman Farm Home. It would remain difficult to understand spatial arrangement and circulation and Truman's influence on surrounding lands. There would be limited opportunities to increase awareness of the Truman Farm.	This goal would be met under this alternative. New visitor facilities and a new interpretive system would improve visitor access to and understanding of the site. There would be seven opportunities for non-personal interpretation. Would provide one partnering opportunity.	This goal would be met under this alternative. New visitor facilities and a new interpretive system would improve visitor access to and understanding of the site. There would be eleven opportunities for non-personal interpretation. Would provide five partnering opportunities.	This goal would be met under this alternative. New visitor facilities and a new interpretive system would improve visitor access to and understanding of the site. There would be six opportunities for non-personal interpretation. Would provide two partnering opportunities.	This goal would be met under this alternative. New visitor facilities and a new interpretive system would improve visitor access to and understanding of the site. There would be nine opportunities for non-personal interpretation. Would provide two partnering opportunities.

Improve Park Operations <ul style="list-style-type: none"> Address operational needs and code deficiencies such as accessibility, utilities, and fire and life safety while preserving the cultural landscape 	<p>Under the no action alternative, this goal would not be met. Operational needs and code deficiencies would remain unaddressed. The current status of fire and life safety would persist.</p>	<p>This goal would be partially met under treatment alternative 1. A moderate number of areas would be ABAAS-compliant (1 building, parking, path to Farm Home and Garage). The three historic buildings within the NHS would be repaired and maintained.</p>	<p>This goal would be met under this alternative. Highest number of ABAAS-compliant areas (2 buildings, parking, path to Farm Home, Garage, barnyard, and east edge of 1950s road). The three historic buildings within the NHS would be repaired and maintained.</p>	<p>This goal would be partially met under this alternative. Lowest number of ABAAS-compliant areas (0 buildings, parking, path to house, Garage, and barnyard) The three historic buildings within the NHS would be repaired and maintained.</p>	<p>This goal would be partially met under this alternative. A moderate number of areas would ABAAS-compliant (1 building, parking, path to house, Garage, barnyard, east edge of 1950s road, and south edge. The three historic buildings within the NHS would be repaired and maintained.</p>
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

MITIGATION

The NPS places strong emphasis on avoiding, minimizing, and mitigating potentially adverse environmental impacts. To help ensure the protection of natural and cultural resources and the quality of the visitor experience, the following protective measures would be implemented as part of the preferred alternative (Table 3). The NPS would implement an appropriate level of monitoring throughout the construction process to help ensure that protective measures are being properly implemented and are achieving their intended results.

Table 3. Mitigation Measures For All Action Alternative

Resource Area	Mitigation
General Considerations	<p>Where necessary for resource or visitor protection, work areas would be identified with construction fence, silt fence, or some similar material prior to any activity. The fencing would define the work zone and confine activity to the minimum area required. All protection measures would be clearly stated in the construction specifications, and workers would be instructed to avoid conducting activities beyond the work zone. Disturbances would be limited to areas inside the designated construction limits. No machinery or equipment would access areas outside the work limits.</p> <p>Construction equipment staging would occur within previously disturbed areas as much as possible. All staging and stockpiling areas would be returned to preconstruction conditions following construction.</p> <p>Contractors would be required to properly maintain construction equipment (i.e., mufflers and brakes) to minimize noise.</p> <p>All tools, equipment, barricades, signs, surplus materials, and rubbish would be removed from the project work limits upon project completion.</p>
Vegetation and Wildlife	<p>All disturbed ground would be reclaimed using appropriate BMPs including planting native plants.</p> <p>Until the soil is stable and vegetation is established, erosion-control measures would be implemented to minimize erosion and prevent sediment from leaving the site.</p> <p>Temporary barriers would be provided to protect existing trees and shrubs that are not identified for removal.</p> <p>To comply with the Migratory Bird Treaty Act (MBTA) and to avoid effects on Indiana bat, trees and shrubs would be removed between August 15th and March 15 when nests are usually inactive and Indiana bats are not present. If trees and shrubs must be removed at other times, the NPS would coordinate with the U.S. Fish and Wildlife Service prior to removal to determine if alternatives to waiting until after March 15 are available.</p>

Resource Area	Mitigation
Cultural Resources	<p>All activities would comply with the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (48 Federal Register 44716, revised).</p> <p>Prior to any soil disturbing activities, a through geophysical baseline survey of the property would be conducted and adequate archeological ground truthing of the geophysical anomalies would be done to determine their nature, integrity, and extent.</p> <p>Known archeological resources in the vicinity of project activities would be identified and delineated for avoidance prior to project work.</p> <p>The park would continue to coordinate with the SHPO throughout the course of the project to protect and mitigate cultural resources affected by the preferred alternative.</p> <p>Should any archeological resources be uncovered during construction, as appropriate, work would be halted in the area and the park archeologist, SHPO, and appropriate Native American tribes (if applicable) would be contacted for further consultation.</p> <p>Park cultural resource staff would be available during construction to advise or take appropriate actions should any archeological resources be uncovered during construction. In the unlikely event that human remains are discovered during construction, provisions outlined in the Native American Graves Protection and Repatriation Act (1990) would be followed.</p> <p>NPS would ensure that all contractors and subcontractors are informed of the penalties for illegally collecting artifacts or intentionally damaging archeological sites or historic properties. Contractors and subcontractors also would be instructed on procedures to follow in case previously unknown archeological resources are uncovered during construction.</p> <p>Equipment and material staging areas would avoid known archeological resources.</p>
Visitor Experience and Park Operations	<p>Visitors would be informed in advance of construction activities via the park website and visitor center.</p>

ENVIRONMENTALLY PREFERABLE ALTERNATIVE

The Council on Environmental Quality defines the Environmentally Preferable Alternative as “...the alternative that will promote the national environmental policy as expressed in the National Environmental Policy Act § 101.”

The Council on Environmental Quality further states the environmentally preferable alternative is the alternative that causes the least damage to the biological and physical environment. It also means that, ordinarily, it is the alternative that best protects, preserves, and enhances historic, cultural, and natural resources. The identification of the “Environmentally Preferable Alternative” was based on an analysis that balances factors such as physical impacts on various aspects of the environment, mitigation measures to deal with impacts, and other factors including the statutory mission of the NPS and the purposes for the project.

Treatment alternative 2, the preferred alternative, is the environmentally preferable alternative because it would best preserve and enhance the cultural features of Truman Farm. Compared to the other alternatives, it would include rehabilitating more structures and landscape features and would better improve visitor access, use, and understanding. Treatment alternative 2 would better protect, preserve, and enhance historic resources than the no action alternative or other treatment alternatives.

By contrast, while the no action alternative would maintain existing conditions, it would not be considered the environmentally preferable alternative because it would not meet environmental goals in the same manner as treatment alternative 2. The no action alternative would not rehabilitate or preserve important historic structures or cultural landscapes as well as treatment alternative 2. It would also not improve the ability of visitors to maximize their individual experiences.

Although similar to treatment alternative 2, the preferred treatment alternative, treatment alternatives 1, 3a, and 3b would not provide the maximum rehabilitation of historic and cultural landscape resources within the site; increases in interpretation; or improvements in visitor access, use, and understanding. For these reasons treatment alternatives 1, 3a, and 3b would not be the environmentally preferable alternative.

IMPACT SUMMARY

A summary of potential environmental effects for the alternatives is presented in Table 4.

Table 4. Impact Summary

Impact Topic	No Action Alternative	Alternative 1	Treatment Alternative 2 (preferred)	Treatment Alternative 3a	Treatment Alternative 3b
Historic Structures and Cultural Landscapes	<p>The no action alternative would have no new impact on historic structures or cultural resources and would not contribute to cumulative impacts.</p> <p>In terms of Section 106, these impacts would be no adverse effect.</p>	<p>Treatment alternative 1 would have local moderate long-term beneficial effects. Cumulative effects would also be local, moderate, long-term, and beneficial.</p> <p>In terms of Section 106, these impacts would be no adverse effect.</p>	<p>Treatment alternative 2 would have local moderate long-term beneficial effects. Cumulative effects would also be local, moderate, and beneficial.</p> <p>In terms of Section 106, these impacts would be no adverse effect.</p>	<p>Treatment alternative 3a would have local minor long-term beneficial effects. Cumulative effects would also be local, minor to moderate, and beneficial.</p> <p>In terms of Section 106, these impacts would be no adverse effect.</p>	<p>Treatment alternative 3b would have local minor long-term beneficial effects. Cumulative effects would also be local, minor to moderate, and beneficial.</p> <p>In terms of Section 106, these impacts would be no adverse effect.</p>

Impact Topic	No Action Alternative	Alternative 1	Treatment Alternative 2 (preferred)	Treatment Alternative 3a	Treatment Alternative 3b
Archeological Resources	<p>The no action alternative would have no new effects on archeological resources and would not contribute to cumulative effects.</p> <p>In terms of Section 106, these impacts would be no adverse effect.</p>	<p>Treatment alternative 1 would have local minor long-term adverse effects on archeological resources. Cumulative effects would also be local, minor, and adverse.</p> <p>In terms of Section 106, these impacts would be no adverse effect.</p>	<p>Treatment alternative 2 would have local long-term minor adverse effects and minor long-term beneficial effects on archeological resources. Cumulative effects would be local, minor, and adverse.</p> <p>In terms of Section 106, these impacts would be no adverse effect.</p>	<p>Treatment alternative 3a would have local minor long-term adverse effects on archeological resources. Cumulative effects would also be local, minor, and adverse.</p> <p>In terms of Section 106, these impacts would be no adverse effect.</p>	<p>Treatment alternative 3b would have local minor long-term adverse effects on archeological resources. Cumulative effects would also be local, minor, and adverse.</p> <p>In terms of Section 106, these impacts would be no adverse effect.</p>
Vegetation	<p>The no action alternative would have no new effects on vegetation and would not contribute to cumulative effects.</p>	<p>Treatment alternative 1 would have local minor long-term adverse effects on vegetation. Cumulative effects would also be local, minor, and adverse.</p>	<p>Treatment alternative 2 would have local minor long-term adverse effects on vegetation. Cumulative effects would also be local, minor, and adverse.</p>	<p>Treatment alternative 3a would have local minor long-term to moderate adverse effects on vegetation. Cumulative effects would be local, moderate, and adverse.</p>	<p>Treatment alternative 3b would have local minor long-term to moderate adverse effects on vegetation. Cumulative effects would be local, moderate, and adverse.</p>

Impact Topic	No Action Alternative	Alternative 1	Treatment Alternative 2 (preferred)	Treatment Alternative 3a	Treatment Alternative 3b
Visitor Experience	The no action alternative would have no new effects on visitor experience and would not contribute to cumulative effects.	Treatment alternative 1 would have local moderate long-term beneficial effects on visitor experience. Cumulative effects would also be local, moderate, and beneficial.	Treatment alternative 2 would have local major long-term beneficial effects on visitor experience. Cumulative effects would also be local, major, and beneficial.	Treatment alternative 3a would have local moderate long-term beneficial effects on visitor experience. Cumulative effects would also be local, moderate, and beneficial.	Treatment alternative 3b would have local moderate long-term beneficial effects on visitor experience. Cumulative effects would also be local, moderate, and beneficial.
Park Operations	The no action alternative would have no new effects on park operations and would not contribute to cumulative effects.	Treatment alternative 1 would have both local moderate long-term beneficial effects and long-term local moderate adverse effects on park operations. There would be no cumulative effects.	Treatment alternative 2 would have both local moderate long-term beneficial effects and long-term local moderate adverse effects on park operations. There would be no cumulative effects.	Treatment alternative 3a would have both local moderate long-term beneficial effects and long-term local moderate long-term adverse effects on park operations. There would be no cumulative effects.	Treatment alternative 3b would have both local moderate long-term beneficial effects and long-term local moderate long-term adverse effects on park operations. There would be no cumulative effects.
Visual Resources	The no action alternative would have no effect on visual resources and there would be local, minor beneficial cumulative effects.	Treatment alternative 1 would have local moderate long-term beneficial direct and cumulative effects on visual resources.	Treatment alternative 2 would have local moderate long-term beneficial direct and cumulative effects on visual resources.	Treatment alternative 3a would have local moderate long-term beneficial direct and cumulative effects on visual resources.	Treatment alternative 3b would have local moderate long-term beneficial direct and cumulative effects on visual resources.

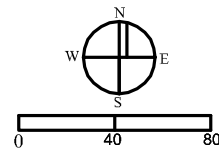
LEGEND

-
- | | | | | | | | | | | | |
|--|----------------|--|-----------------------------------|--|-------------------------|--|-------------------------|--|---------------------------------------|--|-------------------|
| | NHL BOUNDARY | | MOWN LAWN, MIX OF SPECIES | | GRASS LAWN AT FARMHOUSE | | EXISTING TREES & SHRUBS | | REHAB HISTORIC BUILDINGS/STRUCTURES | | PROPOSED BUILDING |
| | NHS BOUNDARY | | TALL LAWN | | GARDEN COVER | | PROPOSED TREES & SHRUBS | | OUTLINE NON-EXTANT BUILDINGS (EDGING) | | |
| | EXISTING FENCE | | TALL NATIVE GRASSES TO MIMIC CROP | | | | STONE POSTS | | | | |



BUILDINGS AND STRUCTURES LEGEND

- | | |
|--------------------------------------------------------------|----------------------------------|
| A Truman Farm Home (1895) (TF01) | H Solomon Young Barn (1867-1966) |
| B Truman Farm Garage (c.1914) (TF02) | I Granary (c.1900-c.1960) |
| C Truman Farm Poultry House
(c.1900, moved c.1940) (TF03) | J Small Barn (c.1900-c.1922) |
| F Smokehouse (c.1900-c.1940) | K Visitor Contact Center |
| G Coalhouse/Icehouse (c.1900-c.1940) | M Unknown Structure |
| | N Maintenance |



HSTR 492 116064

TITLE OF PROJECT
TRUMAN FARM CULTURAL LANDSCAPE REPORT
TITLE OF DRAWING

ALTERNATIVE 1

NAME OF PARK
TRUMAN FARM - HARRY S TRUMAN NATIONAL HISTORIC SITE

<u>REGION</u>	<u>COUNTY</u>	<u>STATE</u>
MIDWEST	JACKSON	MISSOURI

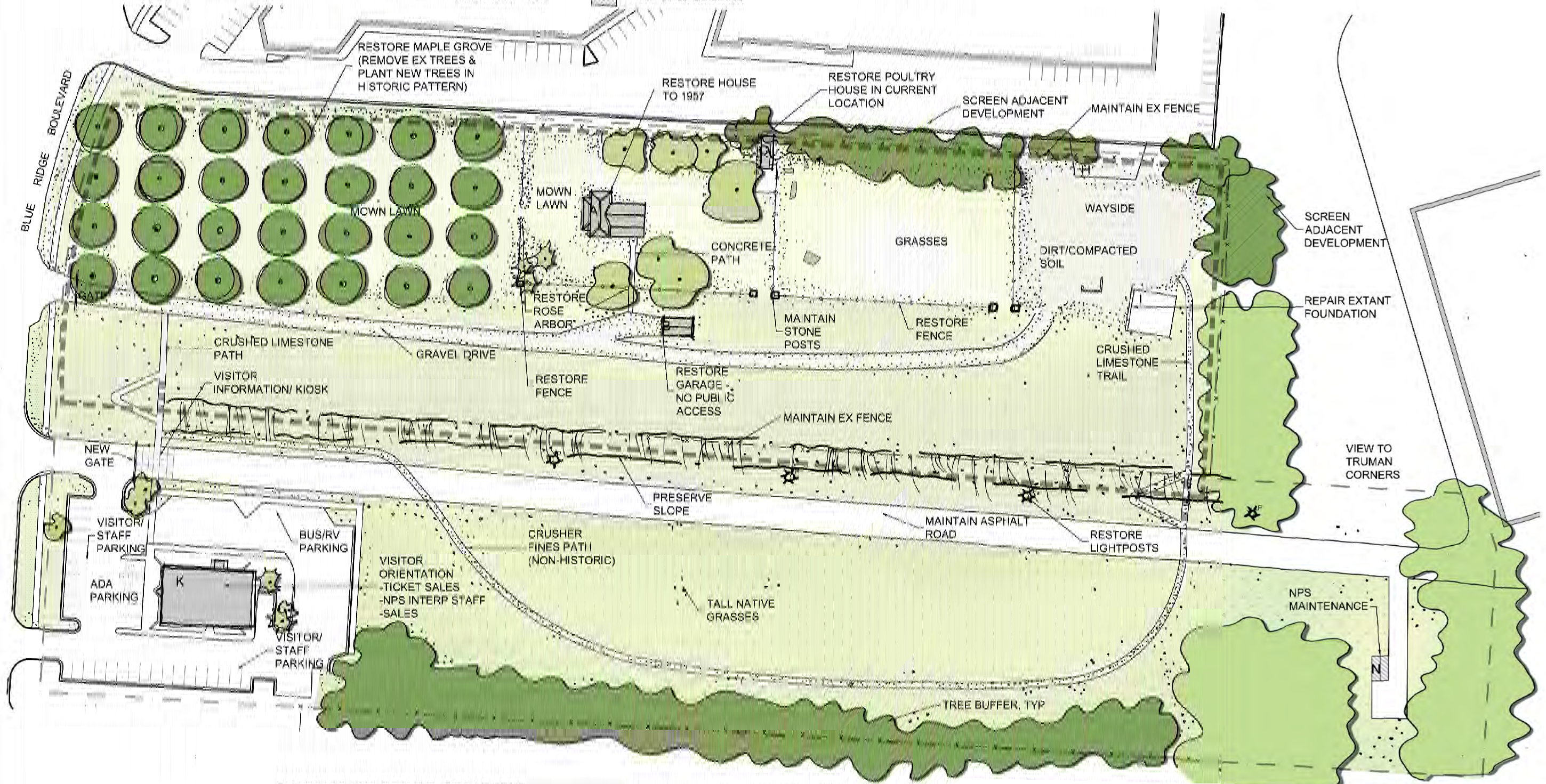
AUGUST 2012

UNITED STATES
DEPARTMENT OF THE INTERIOR
TRUMAN FARM NATIONAL HISTORIC SITE

NAME OF PARK		
TRUMAN FARM - HARRY S TRUMAN NATIONAL HISTORIC SITE		
REGION	COUNTY	STATE
MIDWEST	JACKSON	MISSOURI

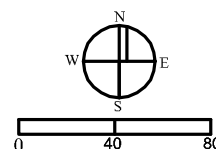
LEGEND

- NHL BOUNDARY
- NHS BOUNDARY
- MOWN LAWN
- UNMOWN GRASS
- DIRT/COMPACTED SOIL
- EXISTING TREES
- PROPOSED TREES
- GRAVEL DRIVE/CRUSHED LIMESTONE TRAIL
- RESTORE HISTORIC BUILDINGS/STRUCTURES
- NON-EXTANT BUILDINGS
- PROPOSED BUILDING
- EX FENCE
- RESTORE FENCE



BUILDINGS AND STRUCTURES LEGEND

- A Truman Farm Home (1895) (TF01)
- B Truman Farm Garage (c.1914) (TF02)
- C Truman Farm Poultry House (c.1900, moved c.1940) (TF03)
- F Smokehouse (c.1900-c.1940)
- G Coalhouse/Icehouse (c.1900-c.1940)
- H Solomon Young Barn (1867-1966)
- I Granary (c.1900-c.1960)
- J Small Barn (c.1900-c.1922)
- K Visitor Contact Center
- M Unknown Structure
- N Maintenance



HSTR 492 116064

<p>AUGUST 2012</p> <p>UNITED STATES DEPARTMENT OF THE INTERIOR TRUMAN FARM NATIONAL HISTORIC SITE</p>	<p>TITLE OF PROJECT TRUMAN FARM CULTURAL LANDSCAPE REPORT</p> <p>TITLE OF DRAWING ALTERNATIVE 3b, 1957</p> <p>NAME OF PARK TRUMAN FARM - HARRY S TRUMAN NATIONAL HISTORIC SITE</p> <p>REGION MIDWEST</p> <p>COUNTY JACKSON</p> <p>STATE MISSOURI</p>
---------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Chapter 6. Impacts from Treatment Alternatives & Environmental Consequences

INTRODUCTION

This chapter provides a description of the likely environmental consequences to the resources described in chapter 4. It is organized by impact topics that were derived from internal park and external public scoping. The impacts are evaluated based on context, duration, intensity, and whether they are direct, indirect, or cumulative. NPS policy also requires an evaluation of potential impairment of park resources and the potential for generating unacceptable levels of impact. More detailed information on resources in the park may be found in the GMP and the LRIP (NPS 2009, 2000).

GENERAL METHODS

This section contains the environmental impacts, including direct and indirect effects, and their significance for each alternative. The analysis is based on the assumption that the mitigation measures identified in the “Mitigation” section of this CLR/HSR/EA would be implemented for the action alternatives. Overall, the NPS based these impact analyses and conclusions on the review of existing literature and park studies; information provided by experts within the park and other agencies; professional judgment and park staff insights; and public input.

The following terms are used in the discussion of environmental consequences to assess the impact intensity threshold and the nature of impacts associated with each alternative.

Context: Context is the setting within which an impact would occur, such as local (site alternative); parkwide (in Harry S Truman National Historic Site); or regional (in Jackson County, Missouri).

Impact Intensity: Impact intensity is defined individually for each impact topic. There may be no impact, or impacts may be negligible, minor, moderate, or major.

Duration: Duration of impact is analyzed independently for each resource because impact duration is dependent on the resource being analyzed. Depending on the resource, impacts may last for the construction period, a single year or growing season, or longer. For purposes of this analysis, impact duration is described as short-term or long-term. Impact duration is defined in a table for each resource topic.

Type: Effects can be beneficial or adverse. Beneficial effects are positive changes in the condition or appearance of the resource or a change that moves the resource toward a desired condition. Adverse effects are negative changes in the condition or appearance of the resource or a change that moves the resource away from a desired condition.

Direct and Indirect Impacts: Effects can be direct, indirect, or cumulative. Direct effects are caused by an action and occur at the same time and place as the action. Indirect effects are caused by the action and occur later or farther away, but are still reasonably foreseeable. Direct and indirect impacts are considered in this analysis, but are not specified in the narratives. Cumulative effects are discussed in the next section.

Threshold for Impact Analysis: The duration and intensity of effects vary by resource. Therefore, the definitions

for each impact topic are described separately. These definitions were formulated through the review of existing laws, policies, and guidelines; and with assistance from park staff and regional NPS staff. Impact intensity thresholds for negligible, minor, moderate, and major adverse effects are defined in a table for each resource topic.

CUMULATIVE EFFECTS

Cumulative impacts are defined as “the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non federal) or person undertakes such other actions” (40 CFR 1508.7). Cumulative effects can result from individually minor, but collectively significant, actions taking place over a period of time. The CEQ regulations that implement NEPA require assessment of cumulative impacts in the decision-making process for federal projects.

Methods for Assessing Cumulative Effects

Cumulative impacts were determined by combining the impacts of each action alternative and the no action alternative with other past, present, and reasonably foreseeable future actions. Past actions include activities that influenced and affected the current conditions of the environment near the project area. Ongoing or reasonably foreseeable future projects near the park or the surrounding region might contribute to cumulative impacts. The geographic scope of the analysis includes actions in the project area as well as other actions in the park or surrounding lands, where overlapping resource impacts are possible. The temporal scope includes actions within a range of approximately 10 years. Once identified, past, present, and

reasonably foreseeable actions were then assessed in conjunction with the impacts of the alternatives to determine if they would have any added adverse or beneficial effects on a particular resource, park operation, or visitor use. The impacts of past, present, and reasonably foreseeable actions vary for each resource. Cumulative effects are considered for each alternative and are presented in the environmental consequences discussion for each impact topic.

The following past, present, and reasonably foreseeable actions are relevant to the analysis of the effects on resources and values that would result from the alternatives, and are based on actions described in the park’s General Management Plan (NPS 1999). Past, present, and reasonably foreseeable management of the site and buildings by NPS includes various stabilization and protection measures applied to structures and removal of non-historic landscape features. Implementation of these activities is associated with available funding. Increased interpretation is also planned for the site as described in the LRIP (NPS 2000). Additional interpretive staff needs have been identified for the site. No other reasonably foreseeable actions were identified in the vicinity of the project area that would potentially contribute to cumulative effects.

IMPACTS TO CULTURAL RESOURCES AND SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT

For purposes of the NEPA process, cultural resources are considered under section 106 of the NHPA, and specifically its implementing regulations under 36 CFR Part 800. Section 106 requires federal agencies to consider the effects of an undertaking on historic properties, and provides a process under which to implement section 106.

In this CLR/HSR/EA, impacts to cultural resources are described in terms of context, duration, intensity, and type, as described above, which is consistent with the regulations of the CEQ, which implements NEPA. CEQ regulations and the NPS Conservation Planning, Environmental Impact Analysis and Decision-making (DO – 12) also call for a discussion of the appropriateness of mitigation, as well as an analysis of how effective the mitigation would be in reducing the intensity of a potential impact (e.g., reducing the intensity of an impact from major to moderate or minor). Any resultant reduction in intensity of impact due to mitigation, however, is an estimate of the effectiveness of mitigation under NEPA only. It does not suggest that the level of effect, as defined by section 106, is similarly reduced. Although adverse effects under section 106 may be mitigated, the effect remains adverse. The park would coordinate with the SHPO to address mitigation measures for the preferred alternative.

HISTORIC STRUCTURES / CULTURAL LANDSCAPES

Impact Intensity Threshold

Section 106 of the NHPA of 1966, as amended (16 USC 470, et seq.) and its implementing regulations under 36 CFR 800 require all federal agencies to consider the effects of federal actions on cultural properties eligible for or listed in the national register. In order for a structure or building to be listed in the national register, it must be associated with an important historic event, person(s), or that embodies distinctive characteristics or qualities of workmanship. Cultural landscapes are the result of the long interaction between people and the land, and the influence of human beliefs and actions over time on the natural landscape. The thresholds of change for the intensity of an impact on historic structures and the cultural landscape are defined in Table 5.

Table 5. Historic Structures and Cultural Landscapes Impact and Intensity

Impact Intensity	Intensity Description
Negligible	Impacts would be at the lowest level of detection with neither adverse nor beneficial consequences. The determination of effect for section 106 would be no adverse effect.
Minor	Alteration of a historic structure or a pattern(s) or feature(s) of the landscape would not diminish the overall integrity of the resource. The determination of effect for section 106 would be no adverse effect.
Moderate	Alteration of a historic structure or a pattern(s) or feature(s) of the landscape would diminish the overall integrity of the resource. The determination of effect for section 106 would be adverse effect. A programmatic agreement is executed among the NPS and applicable state or tribal historic preservation officer and, if necessary, the advisory council, in accordance with 36 CFR 800.6(b). Measures identified in the programmatic agreement to minimize or mitigate adverse impacts reduce the intensity of the impact under NEPA from moderate to minor.
Major	Alteration of a historic structure or a pattern(s) or feature(s) of the landscape would diminish the overall integrity of the resource. The determination of effect for section 106 would be adverse effect. Measures to minimize or mitigate adverse impacts cannot be agreed on, and the NPS and applicable state or tribal historic preservation officer and/or advisory council are unable to negotiate and execute a memorandum of agreement in accordance with 36 CFR 800.6(b).

Short-term impact☐following project completion, effects would remain less than one year
Long-term impact☐following project completion, effects would remain more than one year

Environmental Consequences

No Action Alternative

Direct and Indirect Impacts of the

Alternative. The no action alternative would result in the continuation of existing site building and landscape management approaches. The Truman Farm Home would continue to provide visitor orientation and sales and the non-historic maintenance shed would continue to provide storage space. Stabilization and preservation of the Truman Farm Home, Truman Farm Garage, and Poultry House buildings would continue as part of the no action alternative. Under the no action alternative, the NPS would develop a use strategy for the recently acquired paint building, including improvements to the structure and future use. The no action alternative would have no new effects on the historic structures and cultural landscape of the park.

Cumulative Impacts. Past, present, and ongoing NPS management of the historic structures has stabilized, but not greatly improved, the conditions of the historic structures. The continued use of the Truman Farm Home for visitor orientation and sales has resulted in incremental changes to this historic structure and a major change in its intended function. Additional stabilization and preservation measures would result in a long-term beneficial effect. Overall, past, present, and reasonably foreseeable actions would result in local minor beneficial effects on historic structures. Because the no action alternative would not add any new effects to the effects of past, present, or reasonably foreseeable projects, the alternative would not have a cumulative effect on historic structures or cultural landscapes.

Conclusions. Because current management practices and maintenance capabilities would continue under the no action alternative, the alternative would have no new impact on historic structures or cultural resources and the alternative would not contribute to cumulative effects.

Treatment Alternative 1: The Family Farm

Direct and Indirect Impacts of the

Alternative. Alternative 1 would repair, maintain, and interpret the three historic buildings within the NHS. A main entrance to the Farm Home would be created at the southeast porch and would be ABAAS compatible. The visitor orientation and sales would be relocated from the Truman Farm Home to the new joint center at the former paint store. Parking would also be moved to the former paint store. A new maintenance building would be constructed behind the visitor center. New trees and shrubs would be planted to provide buffers between the farm and adjacent property. Rehabilitation of the farm would focus on re-establishing the farm's historic character. These activities would improve the historic structures and cultural landscape of the farm. Overall, Alternative 1 would have a local moderate long-term beneficial effect on historic structures and cultural landscape.

Cumulative Impacts. As described under the no action alternative, overall, past, present, and reasonably foreseeable actions would result in local minor beneficial effects on historic structures and cultural landscapes. With the contributions from alternative 1, cumulative impacts on historic structures and cultural landscapes would be local, moderate, and beneficial.

Conclusions. Alternative 1 would have a local moderate long-term beneficial

effect on historic structures and cultural landscapes by allowing the NHS buildings to be rehabilitated and re-establishing the farm's historic character. Alternative 1 would have local moderate beneficial cumulative effects on historic structures and cultural landscapes.

Treatment Alternative 2: Farm, City, Nation (Preferred Alternative)

Direct and Indirect Impacts of the

Alternative. Treatment alternative 2 would be similar to treatment alternative 1 in repairing, maintaining, and interpreting the three historic buildings within the NHS. The central south porch at the Farm Home would be altered to be ABAAS compatible. The visitor orientation and sales would be relocated from the Truman Farm Home to the new Truman center at the former paint store. Parking would also be moved to the former paint store. The Truman Home Garage would be rehabilitated and opened to visitors. Rehabilitation of the farm would focus on re-establishing the historical arrangement of the farm as originally designed by the family. These activities would improve the historic structures and cultural landscape of the farm. Overall, Alternative 1 would have a local moderate long-term beneficial effect on historic structures and cultural landscape.

Cumulative Impacts. As described under the no action alternative, overall, past, present, and reasonably foreseeable actions would result in local minor beneficial effects on historic structures and cultural landscapes. With the contribution from treatment alternative 2, cumulative effects on historic structures and would be local, moderate, and beneficial.

Conclusions. Treatment alternative 2 would have a local moderate long-term

beneficial effect on historic structures and cultural landscapes by allowing the NHS buildings to be rehabilitated and re-establishing the historical arrangement of the farm. Treatment alternative 2 would have local moderate beneficial cumulative effects on historic structures and cultural landscapes.

Treatment Alternative 3a: Restoration to 1917

Direct and Indirect Impacts of the

Alternative. Treatment alternative 3a would focus on relocating the visitor orientation and parking to the former paint store and restoring the historic buildings to represent the farm circa 1917. This alternative would require removing and relocating the Poultry House to its 1917 location, restoring the Farm Home to its 1917 appearance, and reconstructing portions of the east end of the Farm Home. The 1950s road would be removed and the maple grove would be restored to its historic pattern. This alternative would require the most change to the existing historic structures and cultural landscape; however all changes would have a local moderate long-term beneficial effect on the historic structures and cultural landscapes.

Cumulative Impacts. As described under the no action alternative, overall, past, present, and reasonably foreseeable actions would result in local minor beneficial effects on historic structures and cultural landscapes. Treatment alternative 3a would contribute local moderate long-term beneficial cumulative effects on historic structures and cultural landscapes.

Conclusions. Treatment alternative 3a would have a local moderate long-term beneficial effect on historic structures and cultural landscapes by allowing the NHS buildings to be rehabilitated and re-

establishing the historical arrangement of the farm. Treatment alternative 3a would have beneficial cumulative effects on historic structures and cultural landscapes.

Treatment Alternative 3b: Restoration to 1957

Direct and Indirect Impacts of the Alternative. Treatment alternative 3b would focus on restoring the historic buildings to circa 1957 conditions. Similar to the other action alternatives, the visitor center would be relocated to the former paint store. The Farm Home would be restored to its 1957 appearance including rebuilding one chimney and the full two storey east wing and alter the porches. The Garage and Poultry House would be restored at their existing locations. This alternative would require significant changes to the existing historical structures and cultural landscape; however the changes would result in local moderate long-term beneficial effects on the historical structures and cultural landscapes.

Cumulative Impacts. As described under the no action alternative, overall, past, present, and reasonably foreseeable actions would result in local minor beneficial effects on historic structures and cultural landscapes. Treatment alternative 3b would have local moderate beneficial cumulative effects on historic structures and cultural landscapes.

Conclusions. Treatment alternative 3b would have local moderate long-term beneficial effects on historic structures and cultural landscapes by allowing the NHS buildings to be rehabilitated and re-establishing the historical arrangement of the farm. Treatment alternative 3a would have local moderate beneficial cumulative effects on historic structures and cultural landscapes.

ARCHEOLOGICAL RESOURCES

Impact Intensity Threshold

Section 106 of the NHPA, and its implementing regulations under 36 CFR 800, require all federal agencies to consider the effects of federal actions on cultural properties eligible for or listed in the national register. In order for an archeological site to be listed in the national register, it must be associated with an important historic event, person(s), or embodies distinctive characteristics or qualities of workmanship. The thresholds of change for the intensity of an impact on archeological resources are defined in Table 6.

Table 6. Archeological Resources Impact and Intensity

Impact Intensity	Intensity Description
Negligible	Impacts would be at the lowest level of detection with neither adverse nor beneficial consequences. The determination of impact for section 106 would be no adverse impact.
Minor	Alteration of an archeological site would not diminish the overall integrity of the resource. The determination of impact for section 106 would be no adverse impact. Monitoring may be required if a proposed activity occurs near an archeological site.
Moderate	Alteration of an archeological site would diminish the overall integrity of the resource. The determination of impact for section 106 would be adverse impact. A programmatic agreement is executed among the NPS and applicable state or tribal historic preservation officer and, if necessary, the advisory council, in accordance with 36 CFR 800.6(b). Measures identified in the memorandum of agreement to minimize or mitigate adverse impacts reduce the intensity of the impact under NEPA from moderate to minor.
Major	Alteration of an archeological site would diminish the overall integrity of the resource. The determination of impact for section 106 would be adverse impact. Measures to minimize or mitigate adverse impacts cannot be agreed on, and the NPS and applicable state or tribal historic preservation officer and/or advisory council are unable to negotiate and execute a memorandum of agreement in accordance with 36 CFR 800.6(b).

Short-term impact following project completion, effects would remain less than one year

Long-term impact following project completion, effects would remain more than one year

Environmental Consequences

No Action Alternative

Direct and Indirect Impacts of the Alternative. Under the no action alternative, there would be no new ground-disturbing activities that would potentially affect archeological resources. Current levels of maintenance and repairs to historic structures and landscapes would continue. These activities do not typically include excavation. Because current management practices would continue, there would be no new impacts to archeological sites and artifacts.

Cumulative Impacts. Management of the site has had, and will continue to have, local negligible to minor adverse impacts on archeological resources as a result of ground- and vegetation-disturbing activities. Past, present, and reasonably foreseeable future actions would have local minor adverse impacts on archeological resources. Because the no action alternative would not add any impacts to the impacts of past, present, or reasonably foreseeable projects, the alternative would not have a cumulative effect on archeological resources.

Conclusions. There would be no new impacts on archeological resources under the no action alternative and the alternative would not contribute to cumulative impacts.

Treatment Alternative 1: The Family Farm

Direct and Indirect Impacts of the Alternative. . In addition to ongoing activities described under the no action alternative, treatment alternative 1 would include excavation to remove the parking lot and minor grading to stabilize the slope between Tract 1 and 2. The excavation may expose previously unknown archeological resources (most likely artifacts associated with the NHS).

No known archeological sites would be disturbed by the alternative. To minimize potential adverse impacts, surveys for visible archeological resources would be conducted prior to ground-disturbing activities. Monitoring for subsurface artifacts would be conducted during ground-disturbing activities in the properties. In the event archeological resources are encountered, work would be stopped immediately and the park cultural resource specialist would be contacted. If necessary, the SHPO would be consulted on potential adverse impacts and additional mitigation measures.

Alternative 1 includes ground-disturbing activities with the potential to encounter and adversely affect previously unknown archeological resources. Potential adverse impacts would be minimized by preconstruction surveys and monitoring in areas with high potential for artifacts. With the mitigation measures, treatment alternative 1 would have local long-term minor adverse impacts on archeological resources.

Cumulative Impacts. As described under the no action alternative, past, present, and reasonably foreseeable actions would have local minor adverse impacts on archeological resources. Those impacts, in combination with the local long-term minor adverse impacts of alternative 1, would result in local minor adverse cumulative impacts.

Conclusions. Because activities under treatment alternative 1 have the potential to encounter archeological resources, with mitigation, the impacts would be local, long-term, minor, and adverse. Cumulative impacts would also be local, minor, and adverse.

Treatment Alternative 2: Farm, City, Nation (Preferred Alternative)

Direct and Indirect Impacts of the

Alternative. The activities and their impacts on archeological resources under treatment alternative 2 would be similar to those under alternative 1. Activities under treatment alternative 2 would be more likely to encounter archeological resources than under treatment alternative 1 because the area of total disturbance would be greater. The proposed pavilion around the granary could have a minor long-term beneficial effect on the structure by protecting it from disturbance. The other known archeological sites in the NHS would not be affected by the alternative. Mitigation measures described for treatment alternative 1 are also included under treatment alternative 2.

Treatment alternative 2 includes ground-disturbing activities with the potential to encounter and adversely affect previously unknown archeological resources. Potential adverse impacts would be minimized by preconstruction surveys and monitoring in areas with high potential for artifacts. With mitigation measures, treatment alternative 2 would have local long-term minor adverse impacts on archeological resources with a local minor long-term beneficial effect from construction of the pavilion.

Cumulative Impacts. As described under the no action alternative, past, present, and reasonably foreseeable actions would have local minor adverse impacts on archeological resources. Those impacts, in combination with the local long-term minor adverse impacts of treatment alternative 2, would result in local minor adverse cumulative impacts.

Conclusions. Because activities under treatment alternative 2 have the potential

to encounter archeological resources, with mitigation, the impacts would be local, long-term, minor, and adverse, with a local minor long-term beneficial effect. Cumulative impacts would be local, minor, and adverse.

Treatment Alternative 3a: Restoration to 1917

Direct and Indirect Impacts of the

Alternative. Treatment alternative 3a could affect archeological resources during the removal of the parking lot and construction of the dirt path and would have a similar footprint of disturbance as treatment alternative 2. No known archeological sites would be affected by the alternative. Mitigation measures described for treatment alternative 1 are also included under treatment alternative 3a.

Treatment alternative 3a includes ground-disturbing activities with the potential to encounter and adversely affect previously unknown archeological resources. Potential adverse impacts would be minimized by preconstruction surveys and monitoring in areas with high potential for artifacts. With mitigation measures, treatment alternative 3a would have local minor long-term adverse impacts on archeological resources.

Cumulative Impacts. As described under the no action alternative, past, present, and reasonably foreseeable actions would have local minor adverse impacts on archeological resources. Those impacts, in combination with the local long-term minor adverse impacts of treatment alternative 3a, would result in local minor adverse cumulative impacts.

Conclusions. Because activities under treatment alternative 3a have the potential to encounter archeological resources, with mitigation, the impacts

would be local, long-term, minor, and adverse. Cumulative impacts would be local, minor, and adverse.

Treatment Alternative 3b: Restoration to 1957

Direct and Indirect Impacts of the Alternative. Treatment alternative 3b could impact archeological resources during the removal of the parking lot and construction of the gravel drive; however the footprint of disturbance would be smaller than treatment alternatives 2 or 3a. No known archeological sites would be affected by the alternative. Mitigation measures described for treatment alternative 1 are also included under treatment alternative 3b.

Treatment alternative 3b includes ground-disturbing activities with the potential to encounter and adversely affect previously unknown archeological resources. Potential adverse impacts would be minimized by preconstruction surveys and monitoring in areas with high potential for artifacts. With mitigation measures, treatment alternative 3b would have local long-term minor adverse impacts on archeological resources.

Cumulative Impacts. As described under the no action alternative, past, present, and reasonably foreseeable actions would have local minor adverse impacts on archeological resources. Those impacts, in combination with the local long-term minor adverse impacts of treatment alternative 3b, would result in local minor adverse cumulative impacts.

Conclusions. Because activities under treatment alternative 3b have the potential to encounter archeological resources, with mitigation, the impacts would be local, long-term, minor, and adverse. Cumulative impacts would be local, minor, and adverse.

VEGETATION

Impact Intensity Threshold

Predictions about impacts were based on the expected disturbance to vegetation communities, and professional judgment and experience with previous projects. The thresholds of change for the intensity of an impact on vegetation are defined in Table 7.

Table 7. Vegetation Impact and Intensity

Impact Intensity	Intensity Description
Negligible	The impacts on vegetation (individuals or communities) would not be measurable. The abundance or distribution of individuals would not be affected or would be slightly affected. The effects would be on a small scale and no species of special concern would be affected. Ecological processes and biological productivity would not be affected.
Minor	The action would not necessarily decrease or increase the project area's overall biological productivity. The alternative would affect the abundance or distribution of individuals in a localized area, but would not affect the viability of local or regional populations or communities. Mitigation to offset adverse effects, including special measures to avoid affecting species of special concern, would be required and would be effective. Mitigation may be needed to offset adverse effects, would be simple to implement, and would likely be successful.
Moderate	The action would result in effects on some individual native plants and also would affect a sizeable segment of the species' population over a large area. Permanent impacts would occur to native vegetation, but in a relatively small area. Some special status species also would be affected. Mitigation measures would be necessary to offset adverse effects and would likely be successful.
Major	The action would have considerable effects on native plant populations, including special status species, and would affect a large area within and outside the park. Extensive mitigation measures to offset the adverse effects would be required; and the success of the mitigation measures could not be guaranteed.

Short-term impact recovers in less than one year

Long-term impact takes more than one year to recover

Environmental Consequences

No Action Alternative

Direct and Indirect Impacts of the Alternative. Under the no action alternative, there would be no new land-disturbing activities that would impact existing vegetation or increase the likelihood for the introduction or spread of exotic or noxious weeds. The no action alternative would have no effect on vegetation.

Cumulative Impacts. Although other past, present, and reasonably foreseeable future actions may local long-term minor adverse effects on vegetation, the no action Alternative would have no impact on vegetation and, therefore, would not contribute to the cumulative effects of other actions.

Conclusions. The no action alternative would have no impact on vegetation and no cumulative effects.

Treatment Alternative 1: The Family Farm

Direct and Indirect Impacts of the Alternative. Under treatment alternative 1, the majority of the vegetation at Truman Farm would be preserved, with only minor disturbances in order to re-establish historic patterns. This includes removal of some of the trees between Tracts 1 and 2 and planting additional trees and shrubs along the perimeter for screening. The removal of the parking lot in Tract 1 will require disturbance and revegetation. Construction activities would be confined to the smallest area necessary to complete the work, and all areas of temporarily disturbed vegetation would be restored with native or appropriate introduced/historic vegetation following construction. All earthwork has the potential for introducing noxious weeds and nonnative plant species. The infestation and spread of invasive species

is possible. Weeds frequently invade disturbed ground where they easily establish and compete with native species, if left unchecked. Implementation of BMP weed-control practices would minimize the potential for weed establishment and long-term impacts.

The loss of nonnative trees and the potential for introduction of noxious weeds and nonnative plants would have a local long-term minor adverse effect on vegetation resources. Plans for planting new trees and revegetating disturbed areas would help minimize effects.

Cumulative Impacts. Past and ongoing land uses, such as adjacent parking areas, have resulted in vegetation clearing in the Truman Farm. The combined effects of past, present, and reasonably foreseeable future projects would result in local long-term minor adverse impacts to vegetation. The overall cumulative impacts to vegetation from Alternative 1 in combination with past, present, and reasonably foreseeable future actions would be local, long-term, minor, and adverse.

Conclusions. Treatment alternative 1 would have local long-term minor adverse effects on vegetation from construction disturbances and removal of a few groups of trees within the property. Weed establishment in areas of disturbed soil is also possible, but would be minimized with weed-control BMPS. Cumulative effects would be local, long-term, minor, and adverse.

Alternative 2: Farm, City, Nation (Preferred Alternative)

Direct and Indirect Impacts of the Alternative. Treatment alternative 2 would preserve the vegetation patterns that contribute to the Truman Farm's historic character. Many of the trees around the

Farm Home, including the maple grove would be maintained and vegetation patterns would be re-established that reinforce the historic special organization of the farm. Vegetation buffers would be established along the perimeter of the property to screen the adjacent commercial and residential development. Some vegetation removal would be undertaken to strengthen the historical vegetation patterns and eradicate invasive species, including all of the trees between Tracts 1 and 2.

As described under treatment alternative 1, construction activities would be confined to the smallest area necessary to complete the work, and all areas of temporarily disturbed vegetation would be restored with native or appropriate introduced/historic vegetation following construction.

The loss of trees and the potential for introduction of noxious weeds and nonnative plants would have a local long-term minor adverse effect on vegetation resources. Plans for planting new trees and revegetating disturbed areas would help minimize effects.

Cumulative Impacts. Past and ongoing land uses, such as adjacent parking areas, have resulted in vegetation clearing in the Truman Farm. The combined effects of past, present, and reasonably foreseeable future projects would result in local long-term minor adverse impacts to vegetation. The overall cumulative impacts to vegetation from treatment alternative 2 in combination with past, present, and reasonably foreseeable future actions would be local, long-term, minor, and adverse.

Conclusions. Treatment alternative 2 would have local long-term minor adverse effects on vegetation from construction disturbances and removal of several groups of trees within the property. Weed

establishment in areas of disturbed soil is also possible, but would be minimized with weed-control BMPS. Cumulative effects would be local, long-term, minor, and adverse.

Alternative 3a: Restoration to 1917

Direct and Indirect Impacts of the

Alternative. Treatment alternative 3a would require the removal of several trees and vegetation within the Truman Farm in order to restore it to its 1917 appearance. This includes the removal of the existing maple grove and re-planting it to its historical pattern. The trees between Tracts 1 and 2 would be removed as well. Vegetation buffers would be established along the perimeter of the property to screen the adjacent commercial and residential development and tall native grasses would be planted within Tract 2. Because the newly planted maple trees would take several years to reach the maturity of the maple trees removed, the loss of these trees would cause a minor to moderate effect on vegetation.

As described above, construction activities would be confined to the smallest area necessary to complete the work, and all areas of temporarily disturbed vegetation would be restored with native or appropriate introduced/historic vegetation following construction.

The loss of nonnative lawn, trees, and the potential for introduction of noxious weeds and nonnative plants would have a local long-term minor to moderate adverse effect on vegetation resources. Plans for planting new trees and revegetating disturbed areas would help minimize effects.

Cumulative Impacts. Past and ongoing land uses, such as adjacent parking areas, have resulted in vegetation clearing in the Truman Farm. The combined effects of

past, present, and reasonably foreseeable future projects would result in local long-term minor adverse impacts to vegetation. The overall cumulative impacts to vegetation from treatment alternative 3a in combination with past, present, and reasonably foreseeable future actions would be local, long-term, minor, and adverse.

Conclusions. Treatment alternative 3a would have local long-term minor to moderate adverse effects on vegetation from construction disturbances and removal of several groups of trees within the property. Weed establishment in areas of disturbed soil is also possible, but would be minimized with weed-control BMPs. Cumulative effects would be local, long-term, moderate, and adverse.

Alternative 3b: Restoration to 1957

Direct and Indirect Impacts of the

Alternative. Treatment alternative 3b would be very similar to treatment alternative 3a in its impacts to vegetation. Treatment alternative 3b would remove and replace the same vegetation as treatment alternative 3b in order to restore it to its 1957 appearance.

As described above, construction activities would be confined to the smallest area necessary to complete the work, and all areas of temporarily disturbed vegetation would be restored with native or appropriate introduced/historic vegetation following construction.

The loss of nonnative lawn, trees, and the potential for introduction of noxious weeds and nonnative plants would have a local long-term minor to moderate adverse effect on vegetation resources. Plans for planting new trees and revegetating disturbed areas would help minimize effects.

Cumulative Impacts. Past and ongoing land uses, such as adjacent parking areas, have resulted in vegetation clearing in the Truman Farm. The combined effects of past, present, and reasonably foreseeable future projects would result in local long-term minor adverse impacts to vegetation. The overall cumulative impacts to vegetation from treatment alternative 3b in combination with past, present, and reasonably foreseeable future actions would be local, long-term, minor, and adverse.

Conclusions. Treatment alternative 3b would have local long-term minor to moderate adverse effects on vegetation from construction disturbances and removal of several groups of trees within the property. Weed establishment in areas of disturbed soil is also possible, but would be minimized with weed-control BMPs. Cumulative effects would be local, long-term, moderate, and adverse.

VISITOR EXPERIENCE

Impact Intensity Threshold

NPS *Management Policies 2006* state that the enjoyment of park resources and values by the people of the United States is part of the fundamental purpose of all parks, and that the NPS is committed to providing appropriate high-quality opportunities for visitors to enjoy the park. Part of the purpose of the park is to offer opportunities for recreation, education, inspiration, and enjoyment. Consequently, one of the park's management goals is to ensure that visitors safely enjoy and are satisfied with the availability, accessibility, diversity, and quality of park facilities, services, and appropriate recreational opportunities.

Scoping input and observation of visitation patterns, combined with assessment of amenities available to visitors under current park management, were used to estimate the effects of the alternatives. Impacts on the ability of visitors to experience a full range of park resources was analyzed by examining resources and objectives presented in the park significance statements, as derived from its enabling legislation. The potential for change in visitor experience proposed by the alternatives was evaluated by identifying projected increases or decreases in access and other visitor uses, and determining whether or how these projected changes would affect the desired visitor experience, to what degree, and for how long. The thresholds of change for the intensity of an impact to visitor experience and recreation resources are described in Table 8.

Table 8. Visitor Experience Impact and Intensity

Impact Intensity	Intensity Description
Negligible	Changes in visitor experience would be below or at an imperceptible level of detection. The visitor would not likely be aware of the effects associated with the action.
Minor	Changes in visitor experience would be detectable, although the changes would be slight. Most visitors would be aware of the effects associated with the action, but would not likely express an opinion about the changes.
Moderate	Changes in visitor experience would be readily apparent. The visitor would be aware of the effects associated with the action and would likely express an opinion about the changes.
Major	Changes in visitor experience would be readily apparent and severely adverse or exceptionally beneficial. The visitor would be aware of the effects associated with the action and would likely express a strong opinion about the changes.

Short-term impact □ occurs only during project construction

Long-term impact □ continues after project construction

Environmental Consequences

No Action Alternative

Direct and Indirect Impacts of the

Alternative. Under the no action alternative, there would be no change in how visitors experience the Grandview Unit. Visitor contact would remain primarily in the Farm Home and guided interpretive tours would continue to focus on the interior of the Farm Home. Poorly defined spaces would continue to make it difficult for visitors to understand the influence Truman Farm had on President Truman. Because there would be no changes, the no action alternative would have no effect on visitor experience.

Cumulative Impacts. The reasonably foreseeable action of removing some non-historic landscape features would provide a benefit by more accurately representing the conditions of the farm during its period of significance, but the changes would likely be implemented over time and would not be noticeable to the typical visitor. As a result, past, present, and reasonably foreseeable actions would have a local negligible beneficial effect on visitor experience. The no action alternative would not contribute to cumulative effects.

Conclusions. The no action alternative would have no effect on visitor experience and would have no contribution to the local negligible beneficial cumulative effects.

Treatment Alternative 1

Direct and Indirect Impacts of the

Alternative. Under treatment alternative 1, rehabilitation of some historic structures and cultural landscape features, a new visitor facility, new interpretive opportunities throughout the site, and new lighting would provide an improved visitor experience. There would also be one partnering space.

Three periods of Harry S Truman's life would be conveyed to visitors. There would be minimal disturbance to existing use of the site during implementation of the improvements because most existing use is in the interior of the Farm Home. Because of the improvements, treatment alternative 1 would have a local moderate long-term beneficial effect on visitor experience.

Cumulative Impacts. Along with the local negligible effect of removing additional non-historic landscape features in the future, treatment alternative 1 would have local moderate beneficial effects on visitor experience.

Conclusions. Treatment alternative 1 would have local moderate long-term beneficial effects on visitor experience. Cumulative effects would also be local, moderate, and beneficial.

Treatment Alternative 2

Direct and Indirect Impacts of the

Alternative. As with treatment alternative 1, under treatment alternative 2, some historic structures and cultural landscape features would be rehabilitated and there would be a new visitor facility, new interpretive opportunities throughout the site, and new lighting. Under treatment alternative 2, more of the cultural landscape would be rehabilitated and there would be more partnering areas (5) than under treatment alternative 1. Three periods of Harry S Truman's life would be conveyed to visitors. There would be minimal disturbance to existing use of the site during implementation of the improvements because most existing use is in the interior of the Farm Home. Because of the many improvements, treatment alternative 2 would have a local major long-term beneficial effect on visitor experience.

Cumulative Impacts. Along with the local negligible effect of removing additional non-historic landscape features in the future, treatment alternative 2 would have local major beneficial effects on visitor experience.

Conclusions. Treatment alternative 2 would have local major long-term beneficial effects on visitor experience. Cumulative effects would also be local, major, and beneficial.

Treatment Alternative 3a

Direct and Indirect Impacts of the

Alternative. Under treatment alternative 3a, historic structures and cultural landscape features would be restored to the 1917 timeframe and there would be a new visitor facility, new interpretive opportunities throughout the site, and new lighting. Under treatment alternative 3a, the site would convey one period of Harry S Truman's life. There would be minimal disturbance to existing use of the site during implementation of the improvements because most existing use is in the interior of the Farm Home. Because of the improvements, treatment alternative 3a would have a local moderate long-term beneficial effect on visitor experience.

Cumulative Impacts. Along with the local negligible effect of removing additional non-historic landscape features in the future, treatment alternative 3a would have local moderate beneficial effects on visitor experience.

Conclusions. Treatment alternative 3a would have local moderate long-term beneficial effects on visitor experience. Cumulative effects would also be local, moderate, and beneficial.

Treatment Alternative 3b

Direct and Indirect Impacts of the

Alternative. Under treatment alternative 3b, historic structures and cultural landscape features would be restored to the 1957 timeframe and there would be a new visitor facility, new interpretive opportunities throughout the site, and new lighting. Under treatment alternative 3b, the rehabilitated site would convey three periods of Harry S Truman's life. There would be minimal disturbance to existing use of the site during implementation of the improvements because most use is in the interior of the Farm Home. Because of the improvements, treatment alternative 3b would have a local moderate long-term beneficial effect on visitor experience.

Cumulative Impacts. Along with the local negligible effect of removing additional non-historic landscape features in the future, treatment alternative 3a would have local moderate beneficial effects on visitor experience.

Conclusions. Treatment alternative 3a would have local moderate long-term beneficial effects on visitor experience. Cumulative effects would also be local, moderate, and beneficial.

PARK OPERATIONS

Impact Intensity Threshold

Park operations, for the purposes of this CLR/HSR/EA, refers to the quality and effectiveness of the infrastructure, and the ability of park staff to maintain the infrastructure used in the operation of the park to protect and preserve vital resources, and provide for a high-quality visitor experience. Facilities in the analysis include the visitor center, administration facilities, and historic structures. The thresholds of change for the intensity of an impact to park operations are described in Table 9.

Table 9. Park Operations Impact and Intensity

Impact Intensity	Intensity Description
Negligible	The effects would be at low levels of detection and would not have appreciable effects on park operations.
Minor	The effects would be detectable, and would be of a magnitude that would not have appreciable effects on park operations. If mitigation is needed to offset adverse effects, it would be simple and likely successful.
Moderate	The effects would be readily apparent and would result in a change in park operations that would be noticeable to park staff and the public. Mitigation measures would be necessary to offset adverse effects and would likely be successful.
Major	The effects would be readily apparent, would result in a substantial change in park operations in a manner noticeable to staff and the public, and would be markedly different from existing operations. Mitigation measures to offset adverse effects would be necessary and extensive, and success could not be guaranteed.

Short-term impact ☐ occurs only during project construction

Long-term impact ☐ continues after project construction

Environmental Consequences

No Action Alternative

Direct and Indirect Impacts of the Alternative. Under the no action alternative, there would be no change in current site operations or infrastructure. The Truman Farm Home would continue to be the primary point of visitor contact. Maintenance requirements would continue at current levels. The NPS would still need to develop a use strategy for the recently acquired paint building. Under the no action alternative, there would be no new effect on park operations.

Cumulative Impacts. The reasonably foreseeable action of removing non-historic landscape features would have no effect on park operations. The actions would be undertaken as funding and current staff levels allow. Because the no action alternative would have no effect on park operations and there would be no effect from past, present, or reasonably foreseeable actions, there would be no cumulative effects.

Conclusions. The no action alternative would have no new effect on park operations and there would be no cumulative effects.

Treatment Alternative 1

Direct and Indirect Impacts of the Alternative. Under treatment alternative 1, park operations would expand to include a new visitor center and maintenance facilities. Additionally, there would be new maintenance requirements for native grass establishment and maintenance (5 acres), mowing (4.5 acres), and snow removal from paths (2 paths). Although the new visitor center and maintenance facilities would benefit the site by improving how the site is operated and by providing improved infrastructure, there would be an increase

in the level of effort required to maintain the structures and landscape features. Treatment alternative 1 would have local moderate long-term beneficial and local long-term moderate adverse effects on park operations.

Cumulative Impacts. Present, past, and reasonably foreseeable actions would have no effect on park operations.

Conclusions. Treatment alternative 1 would have both local moderate long-term beneficial effects and local long-term moderate adverse effects on park operations. There would be no cumulative effects.

Treatment Alternative 2

Direct and Indirect Impacts of the Alternative. As with treatment alternative 1, under treatment alternative 2, park operations would expand to include a new visitor center and maintenance facilities. Additionally, there would be new maintenance requirements for mowing (3.5 acres), gardening (0.5 acre), snow removal from paths (2 paths and barnyard), and crop planting and harvesting. Although the new visitor center and maintenance facilities would benefit the site by improving how the site is operated and by providing improved infrastructure, there would be an increase in the level of effort required to maintain the structures and landscape features. Treatment alternative 2 would have local moderate long-term beneficial and local long-term moderate adverse effects on park operations.

Cumulative Impacts. Present, past, and reasonably foreseeable actions would have no effect on park operations.

Conclusions. Treatment alternative 2 would have both local moderate long-term beneficial effects and long-term

local moderate adverse effects on park operations. There would be no cumulative effects.

Treatment Alternative 3a

Direct and Indirect Impacts of the

Alternative. As with treatment alternatives 1 and 2, under treatment alternative 3a, park operations would expand to include a new visitor center and maintenance facilities. Additionally, there would be new maintenance requirements for mowing (1.0 acre), gardening (0.5 acre), snow removal from paths (1 path), and establishing and maintaining native grasses (8 acres). Although the new visitor center and maintenance facilities would benefit the site by improving how the site is operated and by providing improved infrastructure, there would be an increase in the level of effort required to maintain the structures and landscape features. Treatment alternative 3a would have local moderate long-term beneficial and long-term local moderate adverse effects on park operations.

Cumulative Impacts. Present, past, and reasonably foreseeable actions would have no effect on park operations.

Conclusions. Treatment alternative 3a would have both local moderate long-term beneficial effects and long-term local moderate long-term adverse effects on park operations. There would be no cumulative effects.

Treatment Alternative 3b

Direct and Indirect Impacts of the

Alternative. As with other treatment alternatives, under treatment alternative 3b, park operations would expand to include a new visitor center and maintenance facilities. Additionally, there would be new maintenance requirements for mowing (5 acres), snow removal from paths (3 paths, barnyard, and main area),

and establishing and maintaining native grasses (5 acres). Although the new visitor center and maintenance facilities would benefit the site by improving how the site is operated and providing improved infrastructure, there would be an increase in the level of effort required to maintain the structures and landscape features. Treatment alternative 3b would have local moderate long-term beneficial and long-term local moderate adverse effects on park operations.

Cumulative Impacts. Present, past, and reasonably foreseeable actions would have no effect on park operations.

Conclusions. Treatment alternative 3b would have both local moderate long-term beneficial effects and long-term local moderate long-term adverse effects on park operations. There would be no cumulative effects.

VISUAL RESOURCES

Impact Intensity Threshold

Visual resources are the features that define the visual character of an area such as natural features, vistas, viewsheds, and architecture. The thresholds of change for the intensity of impacts to visual resources are described in Table 10.

Table 10. Visual Resources Impact and Intensity

Impact Intensity	Intensity Description
Negligible	Effects would result in barely perceptible changes to existing views.
Minor	Effects would result in slightly detectable changes to views in a small area or would introduce a compatible human-made feature to an existing developed area.
Moderate	Effects would be readily apparent and would change the character of visual resources in the area. The visitor would be aware of the effects associated with the alternative and would likely express a neutral to negative opinion about the changes.
Major	Effects would be highly noticeable and visible from a considerable distance or over a large area. The character of visual resources would change substantially. The visitor would be aware of the effects associated with the alternative and would likely express a strong negative opinion about the changes.

Short-term following project completion, recovery would take less than 3 years

Long-term following project completion, recovery would take more than 3 years

Environmental Consequences

No Action Alternative

Direct and Indirect Impacts of the

Alternative. Under continued routine maintenance, there would be no changes in the visual character of the site under the no action alternative. Existing trees and shrubs would remain. There would continue to be views of adjacent development from the Truman Farm Home and from other areas of the site. Because there would be no changes to historic structures or landscape features, the no action alternative would have no new effect on visual resources.

Cumulative Impacts. There would be local, minor beneficial changes in the visual character of the site under the no action alternative as non-historic landscape features are removed in the future as a reasonably foreseeable action. The no action alternative would not contribute to cumulative effects.

Conclusions. The no action alternative would have no effect on visual resources and there would be local, minor beneficial cumulative effects.

Treatment Alternative 1

Direct and Indirect Impacts of the

Alternative. Treatment alternative 1 includes adding vegetation to screen views of adjacent development from the Truman Farm Home and other areas of the site. Screening vegetation would be added along the south, southeast, and northeast boundaries of the site. Trees would be removed at the northwest corner of the NHL to open the view into the Farm Home. Screening views of adjacent development and opening the view into the Farm Home would have a local moderate long-term beneficial effect on visual resources of the site.

Cumulative Impacts. There would be a local minor beneficial effect on the visual character of the site as non-historic landscape features are removed in the future as part of past, present, and reasonably foreseeable actions. Those effects, along with the local moderate long-term beneficial contribution of treatment alternative 1 would result in local moderate beneficial cumulative effects.

Conclusions. Treatment alternative 1 would have local moderate long-term beneficial direct and cumulative effects on visual resources.

Treatment Alternative 2

Direct and Indirect Impacts of the

Alternative. As under treatment alternative 1, treatment alternative 2 includes adding vegetation to screen views of adjacent development from the Truman Farm Home and other areas of the site and removing trees to open the view into the Farm Home. Additionally, trees on the slope between Tract 1 and Tract 2 would be removed to open up internal views of the site between the Farm Home and the open field to the south. Screening views of adjacent development and removing trees to open up internal views would have a local moderate long-term beneficial effect on visual resources of the site.

Cumulative Impacts. There would be a local minor beneficial effect on the visual character of the site as non-historic landscape features are removed in the future as part of past, present, and reasonably foreseeable actions. Those effects, along with the local moderate long-term beneficial contribution of treatment alternative 2 would result in local moderate beneficial cumulative effects.

Conclusions. Treatment alternative 2 would have local moderate long-term beneficial direct and cumulative effects on visual resources.

Treatment Alternative 3a

Direct and Indirect Impacts of the

Alternative. As under treatment alternative 2, treatment alternative 3a includes adding vegetation to screen views of adjacent development from the Truman Farm Home and other areas of the site and removing trees on the slope between Tract 1 and Tract 2 and from the northwest corner of the NHL. In keeping with restoring the site to a 1917 POS, additional screening would be added to the northeast boundary of the site to screen views of the Truman Corners development. Screening views of adjacent development and removing trees to open up internal views would have a local moderate long-term beneficial effect on visual resources of the site.

Cumulative Impacts. There would be a local minor beneficial effect on the visual character of the site as non-historic landscape features are removed in the future as part of past, present, and reasonably foreseeable actions. Those effects, along with the local moderate long-term beneficial contribution of treatment alternative 3a would result in local moderate beneficial cumulative effects.

Conclusions. Treatment alternative 3a would have local moderate long-term beneficial direct and cumulative effects on visual resources.

Treatment Alternative 3b

Direct and Indirect Impacts of the

Alternative. The direct and indirect impacts of treatment alternative 3b on visual resources are the same as those for treatment alternative 3a and would be

local, moderate, and long-term beneficial.

Cumulative Impacts. The cumulative impacts of past, present, and future actions and the contribution of treatment alternative 3b are the same as those for treatment alternative 3a. Treatment alternative 3b would have local moderate beneficial cumulative effects.

Conclusions. Treatment alternative 3b would have local moderate long-term beneficial effects on visual resources. Cumulative effects would also be local, moderate, and beneficial.

Chapter 7. Project Phasing

PHASING APPROACH

This chapter provides an implementation strategy to accomplish the Recommended Treatment (Alternative 2: Preferred Alternative) for the Truman Farm. The strategy is organized into a series of projects, in which each includes a project statement and a list of recommended treatment associated with the project statement.

The project statements are presented in a recommended, logical sequence of treatment, however, the steps or phases could be undertaken in any order. These phases can also be combined.

The initial phases focus on site improvements as the vision for the Truman Farm is to generate more experiences on the site, including those that could be self-guided. The first recommended phases focus on restoring and enhancing exterior spaces, and providing better pedestrian routes, connections, and accessibility. This approach to phasing works well with the building, as previous efforts have focused on repair of the historic Farm Home and to some extent on the Garage.

The project phasing is directed to actions necessary to complete treatment as outlined in the CLR/HSR/EA, and does not include actions to create visitor facilities at the existing land building in Tract 3. However, where improvements are integral to the treatment recommendations they are noted.

Phase A:

Create a pedestrian-friendly site. With the land available on Tract 3 for future visitor facilities, this phase of work recommends relocating vehicular traffic to this tract, and opening the historic core to only pedestrian use.

- Restore the historic site circulation by removing the existing asphalt paved drive and parking, and replace with gravel paving that extends from Blue Ridge Boulevard to the Garage and on to the barnyard.
- Relocate visitor parking to Tract 3 on an improved asphalt surface and improved circulation.
- If removal of the existing drive and parking is cost prohibitive in this phase, close the existing drive and parking area to visitors, and allow only maintenance use and accessible parking.
- Provide a terrace and kiosk at the new parking area, and a pathway to connect to the restored historic drive.
- Remove non-contributing vegetation on the north, and plant the missing sugar maple trees to complete the grove.
- Plant crops and other species in areas indicated on the Preferred Alternative.

Phase B:

Implement treatment recommendations for the restoration and repair of the Truman Farm site and its contributing features to create a more comprehensive, engaging and informative visitor experience.

- Restore contributing features such as the stone posts as original historic fabric.
- Restore the historic site circulation by removing the existing asphalt paved drive and parking, and replace with gravel paving that extends from Blue Ridge Boulevard to the Garage and on to the barnyard (if not implemented with Phase A).
- Restore the historic spaces of the Truman Farm including the sugar maple grove, yard at the Farm Home, garden yard, and barnyard by re-establishing fence lines and spaces with new/restored fencing.
- Provide for ABAAS access into the Farm Home by way of rebuilding Porch 107 and modifying several doors.
- Provide interpretive information.

Phase C:

Create a holistic and three-dimensional experience by continuing to restore historic fabric for the site as a whole, and one that includes three-dimensional improvements. Restore historic structures, integrate interior exhibits into the restored structures, and install three-dimensional markings to assist in interpreting the farm and its surroundings.

- Restore the Garage with interior exhibits and ABAAS access.
- Restore the Poultry House and its foundation.
- Restore the barnyard with re-grading at the north edge, leveling the yard, and adding crusher fines as a paving.
- Create a three-dimensional marking at the Solomon Young Barn to illustrate its form, height and massing.
- Create a three-dimensional marking (pavilion) at the Granary in a form, mass and scale respectful of its historic qualities.
- Create waysides to interpret the relationship of the surroundings on the east to the Truman Farm.

Phase D:

Implement treatment recommendations to improve the setting of the Truman Farm, including adding buffers and screen on the edges (north and south, and along portions of the east edge), by remove non-contributing trees, and re-grading certain areas.

- Replace perimeter fencing on the north and east edges. Replace the fencing along the south to provide a better screen. Plant trees along these edges to provide the buffer.
- Remove non-contributing trees at the top and along the slope in the center of the site (between Tract 1 and 2), and re-grade the slope to allow for adequate maintenance (3:1 max slope) and plant with grasses and other species to hold the slope.
- Re-grade the slope at the west edge of the site near the future visitor contact center, and install a visitor area and outdoor gathering space.
- Create a three-dimensional marking (pavilion) at the Granary in a form, mass and scale respectful of its historic qualities.
- Create waysides to interpret the relationship of the surroundings on the east to the Truman Farm.
- Repair the 1950s road and allow for limited connection to the east.

Phase E:

Create a comprehensive visitor experience by moving visitor, administration and maintenance facilities away from the historic core and onto Tract 3.

- Improve the parking and circulation in Tract 3 to accommodate all modes of travel.
- Create visitor facilities by re-using the existing building in Tract 3. Include administration facilities in the same building.
- Create a maintenance yard and small building to house all maintenance needs.

APPENDIX

- Appendix A: Bibliography
- Appendix B: Glossary of Terms
- Appendix C: List of Technical Reviewers
- Appendix D: Consultation & Coordination Documents
- Appendix E: Material Analysis Reports
- Appendix F: Preferred Alternative Cost Estimate
- Appendix G: Site Utility Plan
- Appendix H: 1998 Farm Home HABS Drawings
- Appendix I: 1983 John A. Huffman Drawings
- Appendix J: Lead Based Paint Sample Locations
- Appendix K: Value Analysis Report

APPENDIX A

BIBLIOGRAPHY

Belton Herald. Friday, October 26, 1894 account of fire at Young property.

Bray, Robert T. *Archaeological Survey and Testing at the Truman Farm Home and Grounds – Grandview, Missouri*. Independence: Truman Farm Home Foundation, 1983. page 2-4, 8, 16-17, 24, 47 (Robert T. Bray archeologist who conducted the 1983 survey)

Campbell, Matt. “Truman farm home joins national landmarks.” *Kansas City Star*: 1985.

Christensen, Lawrence O. and Kremer, Gary R. *A History of Missouri Volume IV, 1875-1919*. Columbia, Missouri: University of Missouri Press, 1997.

Daniels, Jonathan. *The Man of Independence*. Philadelphia, PA: J.B. Lippincott Co., 1950.

Evans-Hatch, Gail E.H. and D. Michael Evans-Hatch. *Farm Roots and Family Ties: Historic Resource Study for the Harry S Truman Grandview Farm, the Wallace Houses, and the Noland House in Independence*. National Park Service: 2001. pages 14, 17, 26, 81-96, 109-110

Federal Emergency Management Agency. *Map Services Center- Flood Maps*. Federal Emergency Management Agency: 2012. Available at: <https://msc.fema.gov/webapp/wcs/stores/servlet/StoreCatalogDisplay?storeId=10001&catalogId=10001&langId=-1&userType=G>

Ferrell, Robert H. *Truman: A Centenary Remembrance*. New York: Viking Press, 1984.

Ferrell, Robert H. editor. *The Autobiography of Harry Truman*. Boulder: Colorado Associated University Press. 1980.

Ferrell, Robert H. Editor. *Dear Bess: The Letters from Harry to Bess Truman, 1910-1959*. New York, New York: W.W. Norton & Company, 1983.

Ferrell, Robert H. *Harry S Truman: His Life on the Family Farms*. Worland, Wyoming : High Plains Publishing Company, Inc., 1991.

Fogelson, George. Work Logs for the Restoration of Truman Farm Home, September 26, 1983 to July 13, 1984.

Fuchs, J.R. “Oral History Interview with Charles F. Curry, Kansas City, Missouri, September 30, 1965.” Transcript. Independence: Harry S Truman Library, 1966.

Fuchs, J.R. “Oral History Interview with Gaylon Babcock, Longmont, Colorado, February 12, 1964.” Transcript. Independence: Harry S Truman Library, 1971.

Fuchs, J.R. “Oral History Interview with Mary Ethel Noland, Independence, Missouri, August 23, 1965 and September 9 and 16, 1965.” Transcript. Independence: Harry S Truman Library, 1966.

General Land Office Land Records Website at <http://www.glorerecords.blm.gov/search/default.aspx>

Harry S Truman Library and Museum (images and archival materials)

Harry S Truman National Historic Site NPS Headquarters, Independence, Missouri (park records, documents and photographs)

Hoffman, John A. "Completion Report: Harry S. Truman Farm Home, Grandview, Missouri." Independence: Harry S Truman NHS, 1984.

House, Betty Strong. "Solomon Young [and] Harriet Louisa Gregg," in *Descendants of Jacob young of Shelby County, Kentucky*. Compiled by Elsie Spry Davis. Concord, CA: E.S. Davis, 1980.

Johnson, Neil. "Oral History Interview with Esther N. Grube, Grandview, Missouri, February 4, 1981." Transcript. Independence: Harry S Truman Library, 1981.

Johnson, Neil. "Oral History Interview with Fred L. Truman, Prairie Village, Kansas, March 17, 1983." Transcript. Independence: Harry S Truman Library, 1983.

Johnson, Neil. "Oral History Interview with John J. Strode, Grandview, Missouri, November 18, 1980." Transcript. Independence: Harry S Truman Library, 1981.

Johnson, Neil. "Oral History Interview with John W. Meador, Grandview, Missouri, November 18, 1980." Transcript. Independence: Harry S Truman Library, 1981.

Johnson, Neil. "Oral History Interview with Margaret Weddle, Grandview, Missouri, May 15, 1981." Transcript. Independence: Harry S Truman Library, 1981.

Johnson, Neil. "Oral History Interview with Mrs. Francis H. Montgomery, Grandview, Missouri, February 2, 1980." Transcript. Independence: Harry S Truman Library, 1981.

Johnson, Neil. "Oral History Interview with Pansy Perkins and Pauline Sims, Grandview, Missouri, February 2, 1981." Transcript. Independence: Harry S Truman Library, 1981.

Johnson, Neil. "Oral History Interview with Regna Vanatta, Grandview, Missouri, December 2, 1980." Transcript. Independence: Harry S Truman Library, 1980.

Johnson, Neil. "Oral History Interview with Reverend Welbern Bowman, Grandview, Missouri, February 4, 1981." Transcript. Independence: Harry S Truman Library, 1981.

Johnson, Neil. "Oral History Interview with Robert Wyatt, Grandview, Missouri, December 3, 1980." Transcript. Independence: Harry S Truman Library, 1981.

Johnson, Neil. "Oral History Interview with Sterling E. Goddard, Grandview, Missouri, December 3, 1980." Transcript. Independence: Harry S Truman Library, 1981.

Kansas City Star. "Big Truman Land Deal." January 27, 1958. Page 1.

Kansas City Star. "Vivian Truman Dead at 79." July 8, 1965.

Kansas City Star. "County Gives \$75,000 for Truman Farm." February 14, 1984.

Kansas City Times. "Acts for a Center." August 24, 1955.

Kirkendall, Richard S. *A History of Missouri: Volume V, 1919-1953*. Columbia, Missouri: University of Missouri Press, 1986.

Kirkendall, Richard S. "Harry S Truman, A Missouri Farmer in the Golden Age" in *Agricultural History*, October, 1974. Pages 467-483.

Marshall, Howard Wight. *Vernacular Architecture in Rural and Small Town Missouri*. Columbia, Missouri: University of Missouri Extension Publications. 1994.

McLachlan, Sean. *Missouri, An Illustrated History*. New York, New York: Hippocrene Books, 2008.

Missouri Department of Natural Resources. *Air Pollution Control Program – National Ambient Air Quality Standard Area Boundary Designations*. Missouri Department of Natural Resources: 2012. Available at: <http://dnr.mo.gov/env/apcp/naaqsboundarydesignations.htm>.

National Park Service. *Cultural Landscapes Inventory for the Truman Farm; Harry S Truman National Historic Site*. National Park Service: 2010.

National Park Service. *General Management and Environmental Assessment for Harry S Truman National Historic Site*. National Park Service: 1986.

National Park Service. *General Management Plan Revision for Harry S Truman National Historic Site*. National Park Service: 1999.

National Park Service. *Harry S Truman National Historic Site Long-Range Interpretive Plan*. National Park Service: 2000.

National Park Service. *Management Policies*. National Park Service: 2006.

Natural Resource Conservation Service. *Custom Soil Report*. NRCS: 2012. Downloaded on January 19, 2012. Available at: <http://websoilsurvey.nrcs.usda.gov/app>.

Neild-Somdal Associates. Records. Harry S Truman Library, Independence, Missouri.
Phillips, Cabell. *The Truman Presidency: The History of a Triumphant Succession*. New York, NY: MacMillan Co., 1966.

Piland, Sherry. "National Register of Historic Places Inventory/Nomination Form, Solomon Young Farm," National Park Service: October 11, 1977.

Quinn Evans Architects with Fitzpatrick Structural Engineering, PC. *Existing Structural Conditions Foundation Assessment & Recommended Treatments, Harry S Truman Farm Home (TF-01), Harry S Truman National Historic Site*. Produced for the National Park Service. 2005.

Schwenk, Sally F. "National Register of Historic Places Inventory/Nomination Form for the Grandview Residential Historic District". National Park Service. 2005.

Schwenk, Sally F. "Historic Resources of Lees Summit, Missouri: National Register of Historic Places Multiple Property Documentation Form". National Park Service. 2005.

- Severeid, Ed. "Memorandum to Bill Waris, 27 January 1984."
- Smith, Jan. *The Examiner*, "Restoration Finished; Truman Home to Open." *The Examiner*: 1985
- Sportsman, Sally J. *The Kansas City Star*, "Truman Restoration a Labor of Love." *The Kansas City Star*: 1994.
- Steele, James B. *The Kansas City Times*, "A 94-Year-Old Barn is Built of Wood from Hickman's Mill." *The Kansas City Times*: 1962.
- Taylor, Jon. *Truman's Grandview Farm*. Charleston, South Carolina: The History Press, 2011.
- Truman, Harry S. *The Autobiography of Harry S. Truman*. Edited by Robert H. Ferrell. Boulder, CO: Colorado Associated University Press, 1980.
- Truman, Harry S. *Dear Bess: The Letters from Harry Truman to Bess Truman, 1910-1959*. Edited by Robert H. Ferrell. New York, NY: W.W. Norton & Co., 1983.
- OR Ferrell, Robert H. *Dear Bess: The Letters from Harry to Bess Truman, 1910-1959*. University of Missouri Press: 1983. page 28, 87-90, 97, 111
- Truman, Harry S. *Off the Record: The Private Papers of Harry S. Truman*. Edited by Robert H. Ferrell. New York, NY: Harper & Row Pub., 1980.
- Truman, Harry S. "Papers Pertaining to Family, Business and Personal Affairs." Family Correspondence File. Independence: Harry S Truman Library, n.d.
- Truman, Harry S. *Public Papers*. Washington D.C.: United States Government Printing Office, 1949.
- Truman, Margaret. *Bess W. Truman*. New York, New York: MacMillan Publishing, 1986.
- Turnbaugh, Joseph D. *Jackson County Advocate Truman Centennial Issue*, "Restoring Truman Farm Home is Challenge for Master Carpenter." *The Jackson County Advocate*: 1984.
- U.S. Geological Survey (USGS). *Mineral Resources On-Line Spatial Data*. USGS: 2012. Downloaded on February 21, 2012. Available at: <http://tin.er.usgs.gov/geology/state/ak/akgeo-unit.php?unit=>.
- U.S. News and World Report*. "Truman Puts Grandview on the Map" Photocopy of an undated article (est. date 1953) located in the vertical files of the Truman Library.
- United States Soil Conservation Service. Aerial Photograph of Truman Farm. United States Soil Conservation Service: 1944.
- York, Jill M. "Interview with author Sterling Goddard, Grandview, Missouri, 15 December 1983."
- York, Jill M. "National Register of Historic Places Inventory/Nomination Form for Harry S Truman Farm Home," National Park Service: 1985.

APPENDIX B

Glossary of Terms

DEFINITIONS OF TERMS

A

AAS: Atomic Absorption Spectroscopy

ABAAS: Architectural Barriers Act Accessibility Standard

AC: Alternating current; the movement of current through an electrical circuit that periodically reverses direction. Alternating current is the form of electric power that is delivered to businesses and residences.

ACHP: Advisory Council on Historic Preservation

ACM: Asbestos-Containing Material

Accessibility: A term used to describe facilities or amenities to assist people with disabilities and can extend to Braille signage, wheelchair ramps, elevators/lifts, walkway contours, reading accessibility, etc. According to its website, the Park Service is “committed to making all practicable efforts to make NPS facilities, programs, services, employment, and meaningful work opportunities accessible and usable by all people, including those with disabilities. This policy reflects the commitment to provide access to the widest cross section of the public and to ensure compliance with the Architectural Barriers Act of 1968, the Rehabilitation Act of 1973, the Equal Employment Opportunity Act of 1972, and the Americans with Disabilities Act of 1990. The Park Service will also comply with section 507 of the Americans with Disabilities Act (42 USC 12207), which relates specifically to the operation and management of federal wilderness areas. The accessibility of commercial services within national parks are also covered under all applicable federal, state and local laws.” (Source: <http://www.nps.gov/aboutus/eo.htm>)

AES-ICP: Atomic Emission Spectroscopy – Inductively Coupled Plasma

AIHA: American Industrial Hygiene Association

AL: Action Level

Astronomical Timeclock: A high-precision clock used to control electrical circuits to turn on or off based upon the location of the sun through a pre-programmed geographical location and time.

B

Beam: a structural member, usually horizontal, with a main function to carry loads cross-ways to its longitudinal axis.

Branch Circuit: Insulated conductors used to carry electricity to an associated device or devices that originate from a single circuit breaker.

BTUH: British Thermal Unit per Hour; A traditional unit of energy.

BX Cable: Cable with flexible steel armored outer tube with individual copper conductors insulated with rubber and covered with a cotton braided sheath.

C

Cantilever: refers to the part of a member that extends freely over a beam or wall, which is not supported at its end.

CEQ: Council on Environmental Quality

CFR: Code of Federal Regulation

CLR: Cultural Landscape Report

Circuit Breaker: A device designed to open and close a circuit by nonautomatic means and to open the circuit automatically on a predetermined overcurrent without damage to itself when properly applied within its rating.

Cistern: An underground receptacle for storage of liquids, usually water.

Column: a main vertical member that carries axial loads from beams or girders to the foundation parallel to its longitudinal axis.

Correlated Color Temperature (CCT): A characteristic of visible light that describes the color as a unit of absolute temperature, in Kelvin (K). Warmer color temperatures of light can be described as “2,700K” (incandescent sources) while cooler color temperatures of light can be described as “6,500K” (Daylight).

D

DC: Direct current; the unidirectional flow of current through an electrical circuit. Direct current is produced through such sources as batteries, thermocouples, or photovoltaic solar cells.

Dead Load: describes the loads from the weight of the permanent components of the structure.

Deflection: the displacement of a structural member or system under a load.

DO: Director's Order

Disconnecting Means: A device, or group of devices, or other means by which the conductors of a circuit can be disconnected from their source of supply.

DRO: Diesel-Range Organics

E

EA: Environmental Assessment

ELPAT: Environmental Lead Proficiency Analytical Testing

EMT: Electrical metallic tubing; A metallic tube raceway that is used to carry and protect current carrying conductors or cables.

ESA: Endangered Species Act

EO: Executive Order

EPA: Environmental Protection Agency

F

Farm: Truman Farm.

Flue Vent: A duct or pipe conveying combustion by-products from a heater or furnace.

Fluorescent: A source of light that emits light radiation at longer wavelengths and lower energy.

Footing: a slab of concrete or an assortment of stones under a column, wall, or other structural member to transfer the loads of the member into the surrounding soil.

Foundation: supports a building or structure.

FRP: Fiberglass reinforced plastic

Full Sawn (FS): Lumber cut, in the rough, to its full nominal size.

G

Gable: located above the elevation of the eave line of a double-sloped roof.

Galvanized Steel: Steel coated with zinc carbonate to resist corrosion.

GPM: Gallon per minute; a standard unit of volumetric liquid flow rate.

Grade: the ground elevation of the soil.

Grade Beam: a short foundation element supported on the ground and carrying building above

Gravity Vent: Openings in a roof intended to vent hot air by the action of convection.

Gray Water: Wastewater generated from domestic washing activities and not containing human waste.

GRO: Gasoline Range Organics

Grounding Electrode: A conducting object through which a direct connection to the earth is established.

H

Header: a member that carries joists, rafters or beams and is placed between other joists, rafters or beams. The framing member over a wall opening.

Helical Pile: a structural steel foundation member consisting of helixes near the tip and a steel shaft. A helical pile is twisted into the ground until a predetermined torque is reached.

Hip Roof: a roof sloping from all four sides of a building.

HSR: Historic Structures Report.

HSTR: Harry S Truman National Historic Site.

HVAC: Heating, Ventilation, and Air Conditioning.

I

IAQ: Indoor Air Quality

IBC: International Building Code

IEBC: International Existing Building Code

IEUBK: Integrated Exposure Uptake Biokinetic

Incandescent: A source of light that works by incandescence, or works by a heat-driven light emission through black-body radiation.

Inverter: A device that converts electrical direct current (DC) to electrical alternating current (AC).

I

Joist: a horizontal structural load-carrying member which supports floors, ceilings, or roofs.

J.C. Parks/Rec: Jackson County, Missouri Parks and Recreation

K

kVA: Kilovolt-ampere equal to one thousand volt-amperes. kVA is a unit to express the apparent power consumed in an electrical circuit or electrical device.

kW: Kilowatt equal to one thousand watts. A kilowatt is typically used to express the output power consumption of large devices or electrical systems.

Knob and Tube Wiring: An early standardized method of electrical wiring building from about 1880 to the 1930's. Conductors were run using porcelain knobs along framing members while porcelain tubes protected wires passing through framing members

L

LBP: Lead-Based Paint

LCP: Lead-Containing Paint

LCS: Lead-Contaminated Soils

LED: Light emitting diode; a semiconductor light source that can emit light in various colors and brightness.

Live Load: nonpermanent loads on a structure created by the use of the structure.

Load: an outside force that affects the structure or its members.

Louver: An opening with horizontal slats angled to allow passage of air while keeping out rain and snow.

LIRP: Long-range interpretive plan

LPI – 175: Standard that provides nationally recognized methods for the proper design, installation, and inspection of lightning protection systems.

M

Mg/kg: Milligrams per Kilogram

N

NRHP: National Register of Historic Places

NHPA: National Historic Preservation Act

NEC: National Electric Code.

NEPA: National Environmental Policy Act

NESHAP: National Emission Standards for Hazardous Air Pollutants

NHL: National Historic Landmark

NPS: National Park Service

NRCS: Natural Resource Conservation Service

NVLAP: National Voluntary Laboratory Accreditation Program

O

OSHA: Occupational Safety and Health Administration

Overcurrent Protection: A fuse, circuit breaker or relay that will open the electrical circuit when the downstream electrical current exceeds the stated current rating.

P

Park: Harry S Truman National Historic Site.

Passive Ventilation: Ventilation of a building without the use of a fan or other mechanical system.

Pier: a short column

Pitch: the slope of a member defined as the ratio of the total rise to the total run.

PLM: Polarized Light Microscopy

Purlin: a horizontal member supporting wall framing

Puck Light: Lights mounted under or inside wall cabinets, often used to shed light on countertops below.

PV: Photovoltaic; An array of solar modules or cells that collect solar energy and convert the energy into direct current electricity.

PVC: Polyvinyl Chloride; A biologically and chemically resistant plastic widely used for household sewage pipe.

R

Rafter: a sloped structural load-carrying member which supports the roof.

RBM: Regulated/Hazardous Material

Reaction: the force or moment developed at the points of a support.

Rim Joist: framing member at the edge of floor that rests on the wall plate and supports the wall above

RLM: Industrial stem mounted reflector.

Romex: Wiring with rubber insulated conductors in an overall sheath of braided cotton fiber.

S

Seismic Load: loads produced during the seismic movements of an earthquake.

Septic Tank: A sewage tank containing anaerobic bacteria which decomposed waste discharged into the tank.

Shear: forces resulting in two touching parts of a material to slide in opposite directions parallel to their plane of contact.

SHPO: State Historic Preservation Office (Missouri)

Snow Load: loads produced from the accumulation of snow.

Span: the distance between supports.

Step-down Transformer: A device that converts a high voltage down to a lower voltage through a series of winding coils.

Structural Steel: an iron alloy with a carbon content of 0.16% to 0.29%. Steel is malleable, and easily welded.

Strut: a structural brace that resists axial forces.

Stud: a vertical wall member used to construct partitions and walls.

T

Thermal Expansion Tank: A tank used in a closed water heating system to absorb excess water pressure caused by thermal expansion.

TSI: Thermal System Insulation

Turbine Vent: Vents utilizing rotating wind vanes to create air flow.

U

USFWS: US Fish and Wildlife Service

USGS: US Geological Survey

V

Vent Stack: A vertical pipe providing ventilation.

W

Wrought Iron: an iron alloy with very low carbon content, in comparison to steel. Wrought iron is tough, malleable, ductile and easily welded.

X

XRF: X-ray fluorescence analyzer

Other

30 µg/m³: 30 micrograms per cubic meter

µg/SF: Micrograms of Lead Dust per Square Foot of Floor Space

1x: Piece of dimensional lumber 1" (nominal) / ¾" (actual) thick

2x: Piece of dimensional lumber 2" (nominal), 1.5: actual thickness

APPENDIX C

NPS Technical Review Team

NPS Midwest Regional Staff

Chief of Historic Architecture and Landscapes	Bill Harlow
Historical Landscape Architect	Marla McEnaney
Historical Architect	Al O'Bright
Landscape Historian	Dan Jackson

NPS Midwest Archeological Center Staff

Archeologist	Dawn Bringelson
--------------	-----------------

Harry S Truman, Truman Farm Staff National Park Service

Park Superintendent	Larry Villalva
Museum Curator	Carol Dage
Facilities Operation Specialist	Greg Wolcott
Chief of Interpretation and Visitor Services	Mike Ryan
Woodcrafter	Lewis McKarnin

APPENDIX D

Consultation & Coordination Documents



IN REPLY REFER TO

United States Department of the Interior

NATIONAL PARK SERVICE
Harry S Truman National Historic Site
223 North Main Street
Independence, Missouri 64050

IN REPLY REFER TO:

Central Files (HSTR)

August X, 2012

Charlie Scott, Field Supervisor
U.S. Fish & Wildlife Service
Columbia Ecological Services Field Office
101 Park DeVille Drive, Ste. A
Columbia, Missouri 65203

Dear Mr. Scott,

Reference: Harry S Truman National Historic Site – Cultural Landscape Report, Historic Structure Report, and Environmental Assessment

Subject: Federally Listed Threatened and Endangered Species

A National Park Service (NPS) contractor is preparing a Cultural Landscape Report and Historic Structure Report and associated Environmental Assessment (CLR/HSR/EA) to support management decisions on treatment and use of aboveground cultural resources and a new visitor and maintenance facilities for the Grandview Unit of Harry S Truman National Historic Site. The Harry S Truman National Historic Site was authorized by an act of Congress on May 23, 1983 (Public Law 98-32). The Truman Farm Home was authorized for acquisition by Congress on December 14, 1993 and is significant because of its association with Harry S Truman, President of the United States from 1945 to 1953. A vicinity map of the Grandview Unit, which includes the Truman Farm Home, and map of the study area are attached. The contributing features on the Harry S Truman Farm Home site are in varying need of repair to mitigate the conditions and deterioration that threaten their longevity. Limited visitor access to the structures and the need for improved interpretation and visitor contact are also current issues.

In addition to a no action alternative, the CLR/HSR/EA proposes four action alternatives to provide for the long-term stewardship of the Truman Farm Home with specific recommendations for preservation, repair or improvements for extant features for the entire farm including vegetation and views. The action alternatives include a mix of rehabilitating and restoring existing buildings and the cultural landscape, repurposing a newly-acquired former paint store into new visitor facilities, and constructing a new maintenance building and new visitor parking. The action alternatives include activities that would disturb existing vegetation, including converting portions of existing disturbed uplands into a cultivated crop such as alfalfa, a native grass meadow, or a gravel barnyard area. The alternatives also include removing various numbers of existing trees and, in some cases, replanting with new trees.

The farm is fairly flat, with the southern parcel cut down in elevation. All of the property has been previously disturbed and is currently surrounded by residential and commercial development. A small stream is southeast of the property. Vegetation at the Truman Farm is typical of modestly maintained disturbed properties. Little, if any, of the vegetation is reflective of conditions present before agricultural use of the site. The vegetation surrounding the farmhouse and parking lot consists of upland turfgrass

dominated by fescue (*Festuca sp.*), Bermudagrass (*Cynodon dactylon*), bluegrass (*Poa sp.*), and foxtail (*Setaria glauca*). A thick line of grows along the fence line to the east and south of the farmhouse. The southern and eastern parcels past the fence lines are dominated by smooth brome (*Bromopsis inermis*), switchgrass (*Panicum virgatum*), fescue, and dropseed (*Sporobolus sp.*). A small clump of trees and shrubs is present in the southeast corner of the property. There are no sensitive or unusual vegetation communities or species present in the study area.

The action alternatives would disturb areas that have been previously disturbed and are either disturbed uplands or maintained turfgrass. There would be a maximum of about 10 acres of vegetation and soil disturbance associated with the action alternatives. Most of the disturbance would be temporary in that vegetation would be reestablished, but the species composition of much of the newly established vegetation would differ from that present prior to disturbance. Disturbed areas would be revegetated as soon as possible following construction. Sediment and erosion control best management practices would be used during construction.

Section 7 of the Endangered Species Act of 1973 requires that a federal agency consult with the U.S. Fish and Wildlife Service or the National Marine Fisheries Service on any action that may affect endangered or threatened species or candidate species or that may result in adverse modification of critical habitat. As part of the EA analysis, NPS reviewed the most current list of federally listed species that may occur in Jackson County, Kansas, the county in which the study area is located. The list is located at the following website: <http://www.fws.gov/mountain-prairie/endssp/countrylists/kansas.pdf>. Indiana bat (*Myotis sodalis*), pallid sturgeon (*Scaphirhynchus albus*) and western prairie fringed orchid (*Plantantera praeclara*) are listed as potentially being present in the Jackson County. Indiana bat hibernates in caves and mines and uses small stream corridors with well-developed riparian woods and upland forests for rearing young and foraging. Pallid sturgeon is present in the Mississippi and Missouri rivers. Western prairie fringed orchid is found in wet prairies and sedge meadows.

NPS evaluated the existing conditions within the maximum footprints of the four action alternatives for suitability to support the listed species. The lack of suitable habitat precludes pallid sturgeon and western prairie fringed orchid from the site. And although Indiana bat may occasionally fly above the study area while moving from one foraging area to another, there is no suitable habit for hibernacula or foraging in the study area. Because of the lack of suitable habitat, NPS concluded that federally listed species would not be affected by any of the alternatives. There is also no designated critical habitat for threatened or endangered species in the study area. We are requesting concurrence on this conclusion.

Please address correspondence to me at Harry S Truman National Historic Site, 223 North Main Street, Independence, Missouri 64050. If you have any questions or comments, please inquire by phone at (816) 254-9929 or by email at Larry_Villalva@nps.gov.

This letter will serve as a record that the NPS is initiating informal consultation with your agency pursuant to the requirements of the 1973 Endangered Species Act, as amended and 2006 NPS Management Policies.

We appreciate your continuing assistance with National Park Service projects.

Sincerely,

Larry Villalva
Superintendent

Enclosure

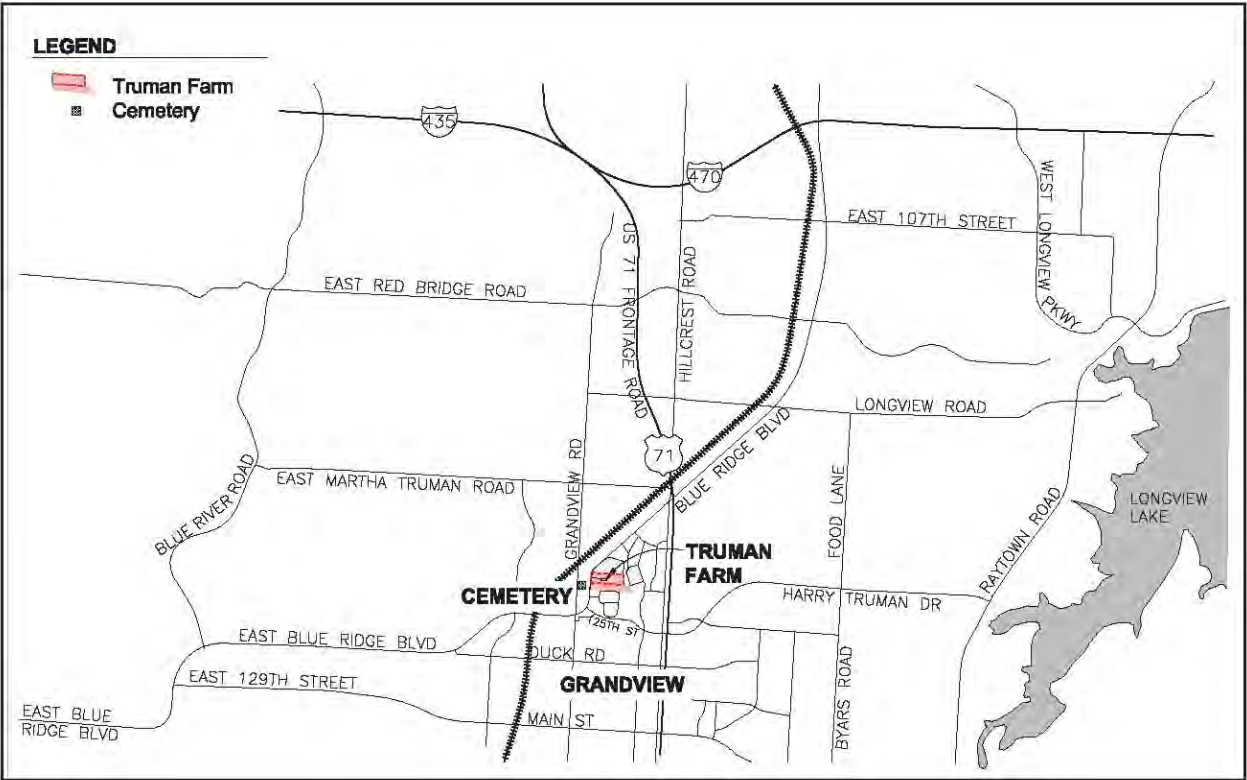


Figure 1-1. Vicinity Map

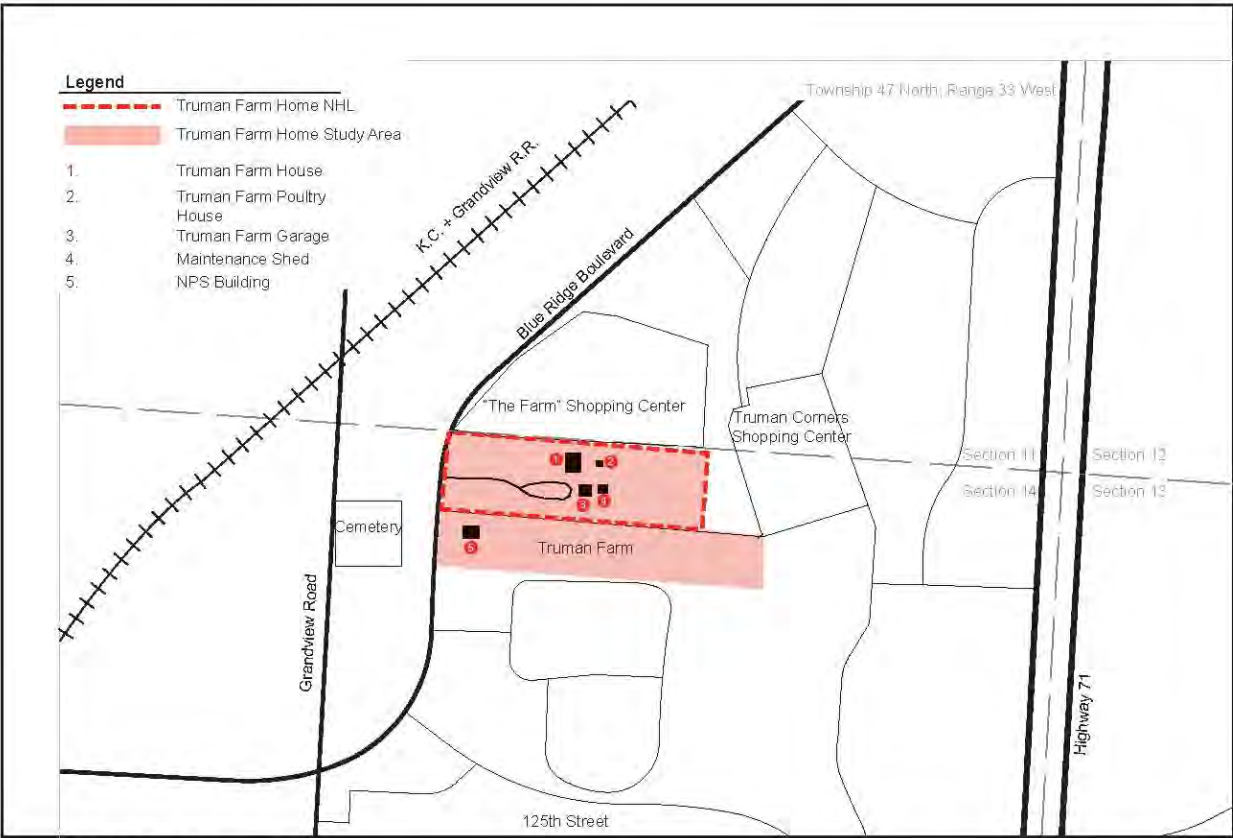


Figure 1-2. Study Area Map

APPENDIX E

Material Analysis Reports:

Paint Analysis

Truman Farm

Grandview Missouri

Harry S Truman NHS

January 18, 2012

On Thursday, January 13, 2012. David Arbogast, architectural conservator, of Davenport, Iowa, received a set of seven paint samples and five mortar and plaster samples from Elizabeth Hallas, AIA, LEED AP. Senior Associate and Adrienne Antonucci of Anderson Hallas Architects, PC of Golden, Colorado. They are in the process of preparing a Historic Structures Report for the Truman Farm in Grandview, Missouri, which is part of the Harry S Truman National Historic Site. These samples were submitted in an attempt to ascertain historic finishes, mortars, and plasters for the Farm Home and the Garage.

The paint samples were visually examined on Wednesday, January 18, utilizing 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 YG, green G, blue-green BG, blue B, purple-blue PB, purple P, and red-purple R. The hues in each group are identified by the numbers 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 of 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.

Five paint samples were submitted in zippered plastic bags and two were in manila envelopes. These were labeled and numbered. The analysis follows the numbering system used in the collection process. The quality of the samples ranged from fair to quite excellent. Because of the exposed nature of many of the samples the paint exhibited weathering and appeared in several cases to be missing older layers seen in other, better samples. The layers are listed from top (most recent) to bottom (oldest). The following results were obtained from the analysis:

Sample 1	Munsell
Cream	5Y 8.5/3
White	N 9.5/
White	N 9.5/
Off-white	5Y 8.5/1

The first sample was collected from dining room and contained four layers of paint. The oldest surviving layer of paint was off-white. The small number of layers is a great concern. It is possible that either older layers were removed at some point in time or that the room was rarely painted, which is unlikely.

Sample 2	Munsell
White	5Y 9/1
White	N 9.5/

The second sample came from the sitting room closet and retained two layers of white paint. Closets are rarely painted. It is possibly, although not very likely, that this closet has only been painted twice in its history.

Sample 3	Munsell
Off-white	5Y 9/2
White	N 9.5/
White	N 9.5/

The third sample was removed from the north window of Mary Jane Truman’s room and revealed three layers of paint. The oldest surviving layer of paint was white. Again, the small number of layers posed a matter of concern.

Sample 4	Munsell
Off-white	5Y 8.5/1
White	N 9.5/

The fourth sample was from Mary Jane's room closet and had two layers of paint. The oldest surviving layer of paint was white. This sample was very similar to sample 2.

Sample 5	Munsell
Cream	2.5Y 8/2
Rose	2.5YR 6/5
Cream	2.5Y 9/3
Tan	2.5Y 6/4

The fifth sample was found in Mary Jane's room on the ceiling/wall joint of the attic hatch. It contained four layers of paint. The oldest surviving coat of paint was tan.

Sample 6	Munsell
Dark green	5G 3.5/1
Gray-green	5G 5/1
Dark gray-green	5G 4/1
Gray-green	5G 5/1
Dark gray-green	5G 4/1
Light-blue	5B 6/2
Charcoal	5G 2/1
Green	10GY 5/4
Green	2.5G 4/4
White	5Y 9/1

The sixth sample was collected from the front door frame and retained ten layers of paint. The oldest surviving layer of paint was white, which given its comparative thickness was most likely a finish coat. The large number of paint layers on this sample relative to the small number of layers found on the previous samples leads one to think that the previous samples were not representative of the entire chronology of finishes on their respective surfaces.

Sample 7	Munsell
Dark green	5G 3/2
White	N 9.5/
Dark gray	10Y 3/1
White	N 9.5/
Light gray	N 7.0/
Gray	N 5.0/
White	N 9.5/
Charcoal	5Y 3/1
White	N 9.5/
Light gray	5Y 7/1
White	5Y 9/1

The seventh sample was collected from the pilaster on the west porch and revealed eleven layers of paint. The oldest surviving layer of paint was a thin white coat that most likely

served as a prime coat. The other white layers were also very thin and probably served as prime coats for their succeeding colors. If one takes that into consideration, there appear to have been six finish coats applied to the pilaster.

Mortar Analysis Truman Farm

Grandview Missouri
Harry S Truman NHS
January 18, 2012

As noted in the introduction four mortar samples and one plaster sample were analyzed as part of the fabric analysis for the Truman Farm. The sample sizes were considerably smaller than the standard 20 grams. The samples were analyzed beginning on Monday, January 16, utilizing the standard testing procedure developed by E. Blaine Cliver, Regional Historical Architect of the North Atlantic Region of the National Park Service. This relatively simple procedure dissolves the lime and/or cement content of the mortar using a 20% solution of hydrochloric acid. The carbon dioxide released as a result of the reaction displaces water, which is then measured and used to calculate the soluble content of the mortar. The insoluble fines and sand remaining from the reaction are factored into the equation resulting in a final result. In the case of cement samples, the remaining fines are used to calculate the cement content of the mortar. The remaining sand is then carefully sieved and graded by grain size to provide a means of identification of the various sand types encountered.

The first sample was from the basement mortar of the Farm Home. It was a warm yellow-tan with white specks. It was very soft in consistency. The fast reaction, relatively large water displacement, and rapid filtering time are all indicative of a mixture of lime and sand. It had an approximate ratio of four parts of sand to one part of lime, by volume. There were more fines than sand produced and the sand that remained was extraordinarily fine. In the sand sieve analysis all of the sand passed through all of the sieves except the finest sieve. Almost 95% passed all of the sieves. It appears that the mortar was mixed with local clay and lime without any sand.

The second sample was taken from the basement chimney of the Farm Home. It was gray in color and was soft in its consistency. Its fast and foamy reaction, relatively large water displacement, and rapid filtering time are typical of a lime and sand mortar. It revealed an approximate mixture of nineteen parts of sand to five parts of lime, by volume, or, roughly, four parts of sand to each part of lime. This was similar to the first sample. The sand, however, was not at all similar. It was moderately coarse with exactly 10% passed all of the sieves and 9% trapped in the second-largest sieve.

The third sample was of the exterior southeast corner of the main (west) section of the Farm Home. It was light gray in color and was moderately hard in consistency. It had a fast reaction, moderately large water displacement and rapid filtering time. The analysis revealed an approximate mixture of seven parts of sand to three parts of lime, by volume, if the finest are considered to be dirt associated with the original sand. The sand sieve analysis revealed very fine sand of which all passed the largest sieve and over 46% passed

all of the sieves. Over 30% was trapped in the finest sieve.

The fourth sample was collected from the exterior of the Farm Home under the west porch. It was gray in color and soft in its consistency. It had a quick reaction, relatively small water displacement, and rapid filtering time. It produced a very large amount of fines. It revealed an approximate ratio of seventeen parts of sand to ten parts of lime, by volume, or, roughly, five parts of sand to two parts of lime, if the fines are to be considered to be dirt associated with the sand. The sand sieve analysis revealed fine sand, which passed the largest sieve easily. Almost 30% passed all of the sieves.

The fifth sample was from the garage plaster. Its statistical reliability was somewhat hampered by its small size. The sample consisted of a white skim coat attached to the brown coat. The two coats were separated prior to analysis. A small piece of the skim coat was tested using muriatic acid. Virtually all of it dissolved in the acid, leaving a thin residue of the paint film and small bits of indissoluble white particles. It appears that the skim coat was composed of lime only. The brown coat was light gray in color and soft in consistency. It did not react at all with the acid, indicating that it contained gypsum rather than lime as its binder. The sand sieve analysis produced fine sand, which easily passed the largest sieve. Over 24% passed all of the sieves.

Mortar/Plaster/Stucco Analysis Test Sheet

Sample No. 1
Building: Farm Home, Truman Farm, Grandview, Missouri, Harry S Truman NHS
Location: Basement mortar
Sample Description: Yellow-tan with white specks, very soft, fast reaction, extremely rapid filtering

Test No. 1 – Soluble Fraction

Data:

1. <u>188.9</u>	Container A weight	8. <u>No</u>	Hair or fiber _____ type
2. <u>199.5</u>	Container A and sample	9. <u>7.0</u>	Fines and paper weight
3. <u>756.16</u>	Barometric pressure	10. <u>2.7</u>	Filter paper weight
4. <u>20</u>	Temperature	11. <u>192.7</u>	Sand and Container A weight
5. <u>0.37</u>	Liters of water displaced	12. <u>2.6</u>	cc. of sand
6. <u>clear</u>	Filtrate color	13. <u>23.0</u>	Weight of graduated cylinder and sand
7. <u>warm tan</u>	Fines color	14. <u>19.2</u>	Weight of graduated cylinder

Computations:

15. <u>10.6</u>	Starting weight of sample: No. 2 – No. 1
16. <u>4.3</u>	Weight of fines: No. 9 – No. 10
17. <u>3.8</u>	Weight of sand: No. 11 – No. 1
18. <u>.68421</u>	Sand density: No. 12 divided by (No. 13 – No. 14)
19. <u>2.5</u>	Weight of soluble content: No. 15 – (No. 16 + No. 17)
20. <u>.0152697</u>	Mols. Of CO ₂ : No. 5 x No. 3. x 0.016 divided by (No. 4 + 273.16 C.)
21. <u>1.53</u>	Gram weight of CaCO ₃ : 100 x No. 20
22. <u>0.97</u>	Gram weight of Ca(OH) ₂ : No. 19 – No. 21

23. .013149 Mols. of Ca(OH)₂: No. 22 divided by 74
24. 2.10 Gram total weight of Ca(OH)₂: 74 x (No. 20 + No. 23)
25. 0.67 Gram weight CO₂: No. 20 x 44
26. 1.25 Gram weight total possible CO₂: 44 x (No. 20 + No. 23)
27. 53.6% %CO₂ gain: No. 25 divided by No. 26

Conclusions:

28. 9.93 Gram weight of sample: No. 15 – No. 25
29. 43.30 Fine parts/volume: No. 16 divided by No. 28
30. 38.27 Sand parts/volume: (No. 17 divided by No. 28) x No. 18
31. 20.05 Lime parts/volume: (No. 24 divided by No. 28) x 1.1

Cement (if present)

32. _____ Portland cement parts/volume: (No. 16 divided by No. 28) x 0.78
33. _____ Natural cement parts/volume: (No. 16 divided by No. 28) x 0.86
34. _____ Lime with cement parts/volume: (No. 16 x 0.2) divided by 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>106.8</u>	<u>106.8</u>	<u>0.0</u>	<u>0.00</u>
No. 20	<u>106.4</u>	<u>106.4</u>	<u>0.0</u>	<u>0.00</u>
No. 30	<u>99.3</u>	<u>99.3</u>	<u>0.0</u>	<u>0.00</u>
No. 40	<u>100.8</u>	<u>100.8</u>	<u>0.0</u>	<u>0.00</u>
No. 50	<u>93.4</u>	<u>93.2</u>	<u>0.2</u>	<u>5.41</u>
Base	<u>74.6</u>	<u>71.1</u>	<u>3.5</u>	<u>94.59</u>

Mortar/Plaster/Stucco Analysis Test Sheet

Sample No. 2
Building: Farm Home, Truman Farm, Grandview, Missouri, Harry S Truman NHS
Location: Basement chimney
Sample Description: Gray, very soft, fast and foamy reaction, extremely rapid filtering

Test No. 1 – Soluble Fraction

Data:

1. <u>185.1</u> Container A weight	8. <u>No</u> Hair or fiber _____ type
2. <u>199.1</u> Container A and sample	9. <u>3.3</u> Fines and paper weight
3. <u>756.16</u> Barometric pressure	10. <u>2.7</u> Filter paper weight
4. <u>20</u> Temperature	11. <u>196.4</u> Sand and Container A weight
5. <u>0.39</u> Liters of water displaced	12. <u>6.7</u> cc. of sand
6. <u>clear</u> Filtrate color	13. <u>30.5</u> Weight of graduated cylinder and sand
7. <u>gray</u> Fines color	14. <u>19.2</u> Weight of graduated cylinder

Computations:

15. 14.0 Starting weight of sample: No. 2 – No. 1

16. 0.6 Weight of fines: No. 9 – No. 10
17. 11.3 Weight of sand: No. 11 – No. 1
18. .59292 Sand density: No. 12 divided by (No. 13 – No. 14)
19. 2.1 Weight of soluble content: No. 15 – (No. 16 + No. 17)
20. .016095 Mols. Of CO₂: No. 5 x No. 3. x 0.016 divided by (No. 4 + 273.16 C.)
21. 1.61 Gram weight of CaCO₃: 100 x No. 20
22. 0.49 Gram weight of Ca(OH)₂: No. 19 – No. 21
23. .0066283 Mols. of Ca(OH)₂: No. 22 divided by 74
24. 1.75 Gram total weight of Ca(OH)₂: 74 x (No. 20 + No. 23)
25. 0.71 Gram weight CO₂: No. 20 x 44
26. 1.04 Gram weight total possible CO₂: 44 x (No. 20 + No. 23)
27. 68.27 %CO₂ gain: No. 25 divided by No. 26

Conclusions:

28. 13.29 Gram weight of sample: No. 15 – No. 25
29. 4.51 Fine parts/volume: No. 16 divided by No. 28
30. 50.41 Sand parts/volume: (No. 17 divided by No. 28) x No. 18
31. 14.48 Lime parts/volume: (No. 24 divided by No. 28) x 1.1

Cement (if present)

32. _____ Portland cement parts/volume: (No. 16 divided by No. 28) x 0.78
33. _____ Natural cement parts/volume: (No. 16 divided by No. 28) x 0.86
34. _____ Lime with cement parts/volume: (No. 16 x 0.2) divided by 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>106.8</u>	<u>106.8</u>	<u>0.0</u>	<u>0.00</u>
No. 20	<u>107.4</u>	<u>106.4</u>	<u>1.0</u>	<u>9.09</u>
No. 30	<u>102.0</u>	<u>99.3</u>	<u>2.7</u>	<u>24.55</u>
No. 40	<u>105.0</u>	<u>100.8</u>	<u>4.2</u>	<u>38.18</u>
No. 50	<u>95.2</u>	<u>93.2</u>	<u>2.0</u>	<u>18.18</u>
Base	<u>72.3</u>	<u>71.2</u>	<u>1.1</u>	<u>10.00</u>

Mortar/Plaster/Stucco Analysis Test Sheet

Sample No. 3
Building: Farm Home, Truman Farm, Grandview, Missouri, Harry S Truman NHS
Location: Exterior southeast corner of Main (west) Section
Sample Description: Light gray, moderately hard, fast reaction, rapid filtering

Test No. 1 – Soluble Fraction

Data:

1. 187.8 Container A weight
2. 195.6 Container A and sample
3. 756.16 Barometric pressure
4. 20 Temperature
5. 0.28 Liters of water displaced
8. No Hair or fiber _____ type
9. 3.3 Fines and paper weight
10. 2.7 Filter paper weight
11. 193.1 Sand and Container A weight
12. 3.5 cc. of sand

6. Pale yel-grn Filtrate color
7. gray-tan Fines color

13. 24.5 Weight of graduated cylinder and sand
14. 19.2 Weight of graduated cylinder

Computations:

15. 7.8 Starting weight of sample: No. 2 – No. 1
16. 0.6 Weight of fines: No. 9 – No. 10
17. 5.3 Weight of sand: No. 11 – No. 1
18. .66 Sand density: No. 12 divided by (No. 13 – No. 14)
19. 1.9 Weight of soluble content: No. 15 – (No. 16 + No. 17)
20. .00115554 Mols. Of CO₂: No. 5 x No. 3. x 0.016 divided by (No. 4 + 273.16 C.)
21. 1.15 Gram weight of CaCO₃: 100 x No. 20
22. 0.75 Gram weight of Ca(OH)₂: No. 19 – No. 21
23. .01 Mols. of Ca(OH)₂: No. 22 divided by 74
24. 1.60 Gram total weight of Ca(OH)₂: 74 x (No. 20 + No. 23)
25. 0.51 Gram weight CO₂: No. 20 x 44
26. 0.95 Gram weight total possible CO₂: 44 x (No. 20 + No. 23)
27. 53.68 %CO₂ gain: No. 25 divided by No. 26

Conclusions:

28. 7.29 Gram weight of sample: No. 15 – No. 25
29. 8.23 Fine parts/volume: No. 16 divided by No. 28
30. 47.98 Sand parts/volume: (No. 17 divided by No. 28) x No. 18
31. 24.14 Lime parts/volume: (No. 24 divided by No. 28) x 1.1

Cement (if present)

32. _____ Portland cement parts/volume: (No. 16 divided by No. 28) x 0.78
33. _____ Natural cement parts/volume: (No. 16 divided by No. 28) x 0.86
34. _____ Lime with cement parts/volume: (No. 16 x 0.2) divided by 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>106.8</u>	<u>106.8</u>	<u>0.0</u>	<u>0.00</u>
No. 20	<u>106.5</u>	<u>106.4</u>	<u>0.1</u>	<u>1.92</u>
No. 30	<u>99.6</u>	<u>99.3</u>	<u>0.3</u>	<u>5.77</u>
No. 40	<u>101.6</u>	<u>100.8</u>	<u>0.8</u>	<u>15.38</u>
No. 50	<u>94.8</u>	<u>93.2</u>	<u>1.6</u>	<u>30.77</u>
Base	<u>73.5</u>	<u>71.1</u>	<u>2.4</u>	<u>46.15</u>

Mortar/Plaster/Stucco Analysis Test Sheet

Sample No. 4
Building: Farm Home, Truman Farm, Grandview, Missouri, Harry S Truman NHS
Location: Exterior under west porch
Sample Description: Gray, moderately soft, quick reaction, rapid filtering

Test No. 1 – Soluble Fraction

Data:

- | | |
|------------------------------------------|-------------------------------------------------------|
| 1. <u>192.0</u> Container A weight | 8. <u>No</u> Hair or fiber <u> </u> type |
| 2. <u>201.4</u> Container A and sample | 9. <u>4.2</u> Fines and paper weight |
| 3. <u>756.16</u> Barometric pressure | 10. <u>2.7</u> Filter paper weight |
| 4. <u>20</u> Temperature | 11. <u>197.0</u> Sand and Container A weight |
| 5. <u>0.21</u> Liters of water displaced | 12. <u>3.5</u> cc. of sand |
| 6. <u>Pale yel-grn</u> Filtrate color | 13. <u>24.2</u> Weight of graduated cylinder and sand |
| 7. <u>gray-tan</u> Fines color | 14. <u>19.2</u> Weight of graduated cylinder |

Computations:

15. 9.4 Starting weight of sample: No. 2 – No. 1
16. 1.5 Weight of fines: No. 9 – No. 10
17. 5.0 Weight of sand: No. 11 – No. 1
18. .70 Sand density: No. 12 divided by (No. 13 – No. 14)
19. 2.9 Weight of soluble content: No. 15 – (No. 16 + No. 17)
20. 0.0086665 Mols. Of CO₂: No. 5 x No. 3. x 0.016 divided by (No. 4 + 273.16 C.)
21. 0.87 Gram weight of CaCO₃: 100 x No. 20
22. 2.03 Gram weight of Ca(OH)₂: No. 19 – No. 21
23. 0.0274324 Mols. of Ca(OH)₂: No. 22 divided by 74
24. 2.67 Gram total weight of Ca(OH)₂: 74 x (No. 20 + No. 23)
25. 0.38 Gram weight CO₂: No. 20 x 44
26. 1.59 Gram weight total possible CO₂: 44 x (No. 20 + No. 23)
27. 23.90 %CO₂ gain: No. 25 divided by No. 26

Conclusions:

- | | |
|----------------------------------------|-------------------------------------|
| 28. <u>9.02</u> Gram weight of sample: | No. 15 – No. 25 |
| 29. <u>16.30</u> Fine parts/volume: | No. 16 divided by No. 28 |
| 30. <u>38.80</u> Sand parts/volume: | (No. 17 divided by No. 28) x No. 18 |
| 31. <u>32.56</u> Lime parts/volume: | (No. 24 divided by No. 28) x 1.1 |

Cement (if present)

- | | |
|------------------------------------------------------|----------------------------------------|
| 32. <u> </u> Portland cement parts/volume: | (No. 16 divided by No. 28) x 0.78 |
| 33. <u> </u> Natural cement parts/volume: | (No. 16 divided by No. 28) x 0.86 |
| 34. <u> </u> Lime with cement parts/volume: | (No. 16 x 0.2) divided by 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>106.8</u>	<u>106.8</u>	<u>0.0</u>	<u>0.00</u>
No. 20	<u>107.0</u>	<u>106.4</u>	<u>0.6</u>	<u>11.76</u>
No. 30	<u>100.4</u>	<u>99.3</u>	<u>1.1</u>	<u>21.57</u>
No. 40	<u>101.9</u>	<u>100.8</u>	<u>1.1</u>	<u>21.57</u>
No. 50	<u>94.0</u>	<u>93.2</u>	<u>0.8</u>	<u>15.69</u>
Base	<u>72.6</u>	<u>71.1</u>	<u>1.5</u>	<u>29.41</u>

Mortar/Plaster/Stucco Analysis Test Sheet

Sample No. 5
Building: Garage, Truman Farm, Grandview, Missouri, Harry S Truman NHS
Location: Plaster (brown coat only)
Sample Description: Light gray, soft, no reaction, extremely rapid filtering

Test No. 1 – Soluble Fraction

Data:

1. <u>173.9</u>	Container A weight	8. <u>Yes</u>	Hair or fiber <u>hair</u> type
2. <u>179.9</u>	Container A and sample	9. <u>3.0</u>	Fines and paper weight
3. <u>756.16</u>	Barometric pressure	10. <u>2.7</u>	Filter paper weight
4. <u>20</u>	Temperature	11. <u>177.9</u>	Sand and Container A weight
5. <u>0.00</u>	Liters of water displaced	12. <u>2.6</u>	cc. of sand
6. <u>clear</u>	Filtrate color	13. <u>23.2</u>	Weight of graduated cylinder and sand
7. <u>tan</u>	Fines color	14. <u>19.2</u>	Weight of graduated cylinder

Computations:

15. <u>6.0</u>	Starting weight of sample: No. 2 – No. 1
16. <u>0.3</u>	Weight of fines: No. 9 – No. 10
17. <u>4.0</u>	Weight of sand: No. 11 – No. 1
18. <u>.65</u>	Sand density: No. 12 divided by (No. 13 – No. 14)
19. <u>1.7</u>	Weight of soluble content: No. 15 – (No. 16 + No. 17)
20. <u>0.00</u>	Mols. Of CO ₂ : No. 5 x No. 3. x 0.016 divided by (No. 4 + 273.16 C.)
21. <u>0.00</u>	Gram weight of CaCO ₃ : 100 x No. 20
22. <u>1.7</u>	Gram weight of Ca(OH) ₂ : No. 19 – No. 21
23. <u>.0229729</u>	Mols. of Ca(OH) ₂ : No. 22 divided by 74
24. <u>1.7</u>	Gram total weight of Ca(OH) ₂ : 74 x (No. 20 + No. 23)
25. <u>0.00</u>	Gram weight CO ₂ : No. 20 x 44
26. <u>1.01</u>	Gram weight total possible CO ₂ : 44 x (No. 20 + No. 23)
27. <u>-----</u>	%CO ₂ gain: No. 25 divided by No. 26

Conclusions:

28. <u>4.99</u>	Gram weight of sample:	No. 15 – No. 25
29. <u>6.01</u>	Fine parts/volume:	No. 16 divided by No. 28
30. <u>80.16</u>	Sand parts/volume:	(No. 17 divided by No. 28) x No. 18
31. <u>-----</u>	Lime parts/volume:	(No. 24 divided by No. 28) x 1.1

Cement (if present)

32. <u>-----</u>	Portland cement parts/volume:	(No. 16 divided by No. 28) x 0.78
33. <u>-----</u>	Natural cement parts/volume:	(No. 16 divided by No. 28) x 0.86
34. <u>-----</u>	Lime with cement parts/volume:	(No. 16 x 0.2) divided by 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>106.8</u>	<u>106.8</u>	<u>0.0</u>	<u>0.00</u>
No. 20	<u>106.6</u>	<u>106.4</u>	<u>0.2</u>	<u>4.88</u>
No. 30	<u>99.9</u>	<u>99.3</u>	<u>0.6</u>	<u>14.63</u>
No. 40	<u>102.0</u>	<u>100.8</u>	<u>1.2</u>	<u>29.27</u>
No. 50	<u>94.3</u>	<u>93.2</u>	<u>1.1</u>	<u>26.83</u>
Base	<u>72.1</u>	<u>71.1</u>	<u>1.0</u>	<u>24.39</u>

**Material Analysis Reports:
Wood Analysis**

From: Clyde Arnette [mailto:carnette@edmlink.com]
Sent: Wednesday, December 14, 2011 4:33 PM
To: Elizabeth Hallas
Subject: RE: Truman farm wood flooring sample

I received the sample(s) today. They are yellow pine. Several characteristics strongly suggest Southern yellow pine rather than Western. As Bruce Hoadley points out in his book, "Even with a microscope, there are no features that consistently and absolutely separate the Southern and Western yellow pines." However, this sample shows features that are more common in the Southern group.

Clyde G. Arnette, Jr., Wood Technologist
EDM International, Inc.

APPENDIX F

Preferred Alternative Cost Estimate

Note: archeological costs as a result of ground disturbance/excavation are not included in this estimate.

The following summary chart is included to help the reviewer see the breakout of costs and understand the totals vs. the ARC Class C Estimate in the following pages

	Alt 1	Alt 2	Alt 3a	Alt3b	Notes / Comparison
Common to All					
Site / Utilities	\$ 191,337	\$ 191,337	\$ 191,337	\$ 191,337	
House	\$ 349,713	\$ 349,713	\$ 349,713	\$ 349,713	
Garage	\$ 81,092	\$ 81,092	\$ 81,092	\$ 81,092	
Poultry	\$ 30,009	\$ 30,009	\$ 30,009	\$ 30,009	
VC	\$ 1,400,115	\$ 1,400,115	\$ 1,400,115	\$ 1,400,115	
Subtotal	\$ 2,052,266	\$ 2,052,266	\$ 2,052,266	\$ 2,052,266	From ARC Cost estimate for "Common to All"
VC Geothermal	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	Placeholder added across the board based on VA Meeting
Subtotal	\$ 2,102,266	\$ 2,102,266	\$ 2,102,266	\$ 2,102,266	
Alternative Pricing					
Site	\$ 1,181,412	\$ 1,544,596	\$ 1,525,910	\$ 1,582,199	
Undergrounding Elec	\$ -	\$ -	\$ 500,000	\$ -	Not in ARC costs of following pages
Buildings	\$ 44,962	\$ 210,920	\$ 7,338	\$ 183,374	
Subtotal	\$ 1,226,374	\$ 1,755,516	\$ 2,033,248	\$ 1,765,573	From ARC Cost estimate per Alternative Summary
Exhibits	\$ 250,000	\$ -			Missing from ARC's Rev 07 costs - \$250K for exhibits for Alt 1
Subtotal	\$ 1,476,374	\$ 1,755,516	\$ 2,033,248	\$ 1,765,573	
Total Initial Cost	\$ 3,578,640	\$ 3,857,782	\$ 4,135,514	\$ 3,867,839	
Life Cycle Cost	\$ 168,045	\$ 394,753	\$ 287,152	\$ 191,423	As developed and presented in the VA Meeting
Grand Total	\$ 3,746,685	\$ 4,252,535	\$ 4,422,666	\$ 4,059,262	These are the numbers used in the VA graph.

NPS - TRUMAN FARMS
Building & Site Improvements
Basis of Estimate

Updated on 27 AUG 12
Printed: 8/27/2012 at 5:47 PM

Cost Estimating Information & Assumptions										
Location: Truman Farms, Grandview, Missouri Project: Truman Farms					Estimated By: Kyle Holland Reviewed By: Chris Squadra Estimate Contact: Chris Squadra, LEED® AP Phone/Email: 720-259-5693 CSquadra@arcipm.com Estimate Type: Class C Estimate Cost Data: Based on RS Means Cost Database, Quarter 1/2012 Region: Kansas City, Missouri (640-641)					
<u>Unit/ BLDG</u>	<u>GSF / EA</u>	<u>QTY</u>	<u>TOTAL</u>							
House	2,278 SF	1	2,278	SF						
Garage	346 SF	1	346	SF						
Poultry	261 SF	1	261	SF						
Visitor Center	3,240 SF	1	3,240	SF						
Total Gross Square Footage:			6,125	GSF						
Site SF/Acreage	492,075 SF	1	492,075	SF						
Estimate Revision Status										
			REVISION	REV 01	REV 02	REV 03	REV 04	REV 05	REV 06	REV 07
Date of Estimate (QTO Complete):				06-Jul-12	22-Jul-12	24-Jul-12	13-Aug-12	21-Aug-12	27-Aug-12	
Date of Estimate (Final Review):				11-Jul-12	17-Jul-12	23-Jul-12	24-Jul-12	17-Aug-12	22-Aug-12	27-Aug-12
Estimating Information Sources										
<u>Comments</u>	<u>Design Documents - Package Issued</u>	<u>Originator</u>	<u>REV 01</u>	<u>REV 02</u>	<u>REV 03</u>	<u>REV 04</u>	<u>REV 05</u>	<u>REV 06</u>	<u>REV 06</u>	
	120629 Truman Farm - Building Items	AHA	29-Jun-12							
	120622 Truman Farm - Site & Landscape	MB	22-Jun-12							
	120629 Sequence Images from AH	AHA	29-Jun-12							
	120626 TrumanFarm CE ALT 1	AHA	26-Jun-12							
	120626 TrumanFarm CE ALT 2	AHA	26-Jun-12							
	120626 TrumanFarm CE ALT 3 - 1917	AHA	26-Jun-12							
	120626 TrumanFarm CE ALT 3 - 1957	AHA	26-Jun-12							
	120420 75% Draft for AEDG (HSR)	AHA	20-Apr-12							
	120705 MBD - Generic Form	MB	05-Jul-12							
	120716 MBD-Truman Costs - TB edits	MB		16-Jul-12						
	120716 Comments - 120711 NPS - Truman Farms Master Estimate REV 01.00 to Client	MB		16-Jul-12						
	120716 Rose arbor to Restore	MB		16-Jul-12						
	120718 TRU - Class B Form Estimate_Haz Mat Costs_071812	AHA			18-Jul-12					
	120720 Email from Elizabeth Hallas	AHA			20 Jul 12					
	120720 Email from Elizabeth Hallas - Response to ARC questions	AHA			20 Jul 12					
	120724 Email from Nan Anderson - Response to ARC questions	AHA				24 Jul 12				
	120809 Cost Estimate - Redlines 8-9-2012 from Mundus Bishop	MB					09 Aug 12			
	120813 Email from Elizabeth Hallas - Truman VA Edits Heads Up	AHA					13 Aug 12			
	120813 HSTR.House.ABA.Entry.2012.08.07	AHA					13 Aug 12			
	120813 HSTR.Garage.ABA.Entry.2012.08.08	AHA					13 Aug 12			
	120813 PDF Comments from AHA (p. 29 - 41 of 49)	AHA					13 Aug 12			
	120813 PDF Comments from AHA (p. 1-28 & 42-49 of 49)	AHA					13 Aug 12			
	120814 Email from Elizabeth Hallas - Fire Suppression Info	AHA					14 Aug 12			
	120815 Email from Elizabeth Hallas - Preferred Alternative	AHA					15 Aug 12			
	120821 Email from Elizabeth Hallas - Design Team Comments on REV 05.00	AHA						21 Aug 12		
	120824 Email from Tina Bishop - Mundus Bishop Comments on REV 06.00	AHA							24 Aug 12	
	<u>Communications</u>									
	Conference Call	Various								
	Comments (E-Mails)	Various	Various	Various	Various	Various	Various	Various	Various	
	Meetings	Various								
<u>Key</u>										
	TRU Truman Farms	MB Mundus Bishop								
	AHA Anderson Hallas Architects	ARC ARC Integrated Program Management, Inc.								
	NPS National Park Service									

NPS - TRUMAN FARMS
Building & Site Improvements
Basis of Estimate

Updated on 27 AUG 12
Printed: 8/27/2012 at 5:47 PM

Schedule Assumptions					
Construction Phase	Start		Finish		Duration
Phase 1	01 Feb 2015		01 Apr 2016		14 Months*
Phase 2	Excluded		Excluded		*Per Architect
Soft Costs & Other Assumptions & Clarifications					
Comments	Basic Construction-Driven Soft Costs		Factor	Calculations & Constants	
	Government Furnished Products (GFP)		N/A	<div>Schedule Calcs</div> <div>Base Date27-Aug-12</div> <div>Phase 1</div> <div>Days to NTP888</div> <div>Construction Duration425</div> <div>Midpoint of Construction01-Sep-15</div>	
	Published Location Factor		N/A		
	Project Remoteness Factor		N/A		
	Federal Wage Rate Factor		w/ Unit Costs		
	State/Local Sales & Use Taxes		N/A		
	Owner's Design & Preconstruction Contingency		20.0%		
	Owner's Construction Contingency (after NTP)		5.0%		
	Standard General Conditions (GC's Onsite Overhead)		13.00%		
	Government General Conditions		Excluded		
	GC's Profit		10.0%		
	GC's Offsite Overhead		w/Above		
	GC's General Liability Insurance		w/Above		
	Sitework General Conditions		w/Above		
	Bid Bond		Excluded		
	Performance & Payment Bond		1.5%		
	Builder's Risk Insurance		0.75%		
	Escalation per Year		3.8%		
	Escalation Period in Months		37		
	Other Owner Soft Costs				
	Material Testing		2.0%		
	Building & Grading Permits		2.5%		
	Utility Tap Fees		Excluded		
	Financing & Attorney's Fees		Excluded		
	Hazardous Material Abatement		Excluded		
	Fixtures, Furnishings, and Equipment (FF&E)		Excluded		
	NPS Personnel Costs, Time & Expenses		Excluded		
	Relocation/Moving Expenses		Excluded		
	Utilities During Construction		By Owner		
	Other Owner's Soft Costs		Excluded		
	Additional Clarifications & Assumptions				
	1. GFP costs are only used when the Government pre-purchases items, or provides other materials out of Government inventory, to be installed by contractor. No GFP items were noted.				
	2. Assumes local, state, federal taxes are not applicable.				

PROJECT SUMMARY

ALTERNATIVES											
Alt. No.	Site	House	Garage	Poultry	Quantity	Unit	Alternative Cost		Common to All		Total
01	Rehabilitate Family Farm	Alter Porch 107 to comply w/ ABA	No Change	No Change	1	LS	1,226,374	+	2,052,265	=	3,278,639
02	Rehabilitate Farm, City, Nation	Alter Porch 106 to comply w/ ABA	Garage Modifications	No Change	1	LS	1,755,515	+	2,052,265	=	3,807,781
03A	Restoration to ca. 1917	Minor Modifications to Porch 106	No Change	Relocate per Mundus Bishop	1	LS	1,533,248	+	2,052,265	=	3,585,513
03B	Restoration to ca. 1957	Demo East Wing & Rebuild to ca. 1957	No Change	No Change	1	LS	1,765,573	+	2,052,265	=	3,817,839

COMMON TO ALL ALTERNATIVES					
	Location	Quantity	Unit	Cost	Total
	House	1	LS	349,713	349,713
	Garage	1	LS	81,092	81,092
	Poultry	1	LS	30,009	30,009
	Visitor Center	1	LS	1,400,115	1,400,115
SUBTOTAL (to be added to the Preferred Alternative only)					1,860,928
	Site	1	LS	191,337	191,337
SUBTOTAL OF ALL COMMON TO ALL ALTERNATIVES (to be added to all other Alternatives)					2,052,265

NOTE: ALTERNATIVES & COMMON TO ALL ITEMS INCLUDE GC's DIRECT & INDIRECT COSTS PLUS ESCALATION

ALTERNATIVES ARE MUTUALLY EXCLUSIVE

*THE 'PREFERRED ALTERNATIVE' INCLUDES THE COMMON TO ALL & ALT 02 SITE LINE ITEMS

**NPS - TRUMAN FARMS
Building Improvements
House - Garage - Poultry**

Updated on 27 AUG 12
Printed on: 8/27/2012 at 5:51 PM

Common to All Site Summary

			Building GSF	492,075
WBS Code	Description	\$/SF	Total	Total w/Burdens
G10	Site Preparation	0.02	12,109	22,270
G20	Site Improvements	0.01	4,000	7,356
G30	Mechanical Utilities	0.14	69,363	127,566
G40	Electrical Utilities	0.04	18,565	34,144
G90	Other Site Construction		EXCLUDED	EXCLUDED
	Subtotal Direct Construction Costs	0.21	104,037	191,337
	Project Remoteness Factor	N/A	N/A	
	Federal Wage Rate Factor	w/ Unit Costs	N/A	
	State/Local Sales & Use Taxes	N/A	N/A	
	Owner's Design & Preconstruction Contingency	20.00%	20,807	
	Owner's Construction Contingency (after NTP)	5.00%	5,202	
	Total Direct Construction Costs	0.26	130,047	
	Standard General Conditions (GC's Onsite Overhead)	13.00%	16,906	
	Subtotal NET Construction Cost	0.30	146,953	
	GC's Profit	10.00%	14,695	
	GC's Offsite Overhead	w/Above	w/ Above	
	Construction Cost w/o Bonds & Escalation	0.33	161,648	
	Performance & Payment Bond	1.50%	2,425	
	Building & Grading Permits	2.50%	4,041	
	Builder's Risk Insurance	0.75%	1,212	
	Escalation Period in Months	37	18,778	
	Material Testing	2.0%	3,233	
	Total Estimated Cost of Construction	0.39	191,337	

NPS - TRUMAN FARMS
Building & Site Improvements
Site - House - Garage - Poultry

Updated on 27 AUG 12
Printed on: 8/27/2012 at 5:51 PM

Common to All - Site Detail

Site GSF: **492,075**
Total Cost: **\$104,037**

Estimate By: KH
Date: 03-Jul-12
Reviewed By: CS
Date: 10-Jul-12

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
G10	SITE PREPARATION					
	General Site Prep					
G1010	Mobilization				w/ Alts	
G1010	Construction Surveying & Historic Documentation				w/ Alts	
G1010	Temporary Construction Fence				w/ Alts	
G1010	Traffic Control in the ROW				w/ Alts	
G1010	Erosion Control				w/ Alts	
G1010	Tree Protection				w/ Alts	
	Site Demolition					
G1020	Demolish and Remove Wood Ramp	1	LS	500.00	500	
G1020	Demolish Smokehouse & Outhouse Buildings	2	EA	1,060.00	2,120	
G1020	Demolish and Remove Wood Ramp	1	LS	500.00	500	
G1020	Demolish and Remove Yard Lights & Flagpole	5	EA	1,500.00	7,500	
G9020	NPS Maintenance shed (move existing)	1	EA	1,309.06	1,309	
G9020	NPS Maintenance shed (conc pad; utilities)	1	EA	3,305.00	3,305	
G9020	Remove Culvert at Blue Ridge Boulevard	1	LS	3,000.00	3,000	
G9020	Design Team Adjustment	1	LS	-6,125.00	-6,125	
SUBTOTAL SITE PREPARATION		492,075	SF	0.02	12,109	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
G20	SITE IMPROVEMENTS					
	General Site Improvements					
G2010	Earthwork- Allowance				w/ Alts	
G2010	Regrade Ditch @ Blue Ridge Blvd	800	SF	5.00	4,000	
SUBTOTAL SITE IMPROVEMENTS		492,075	SF	0.01	4,000	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
G30	MECHANICAL UTILITIES					
	Water System					
G2010	Test Hydrants for Adequate Pressure & Fire Flows On Site	2	EA	2,862.50	5,725	
G2010	Extend Water Line to Farmhouse - 6" DIP	388	LF	49.27	19,115	

NPS - TRUMAN FARMS
Building & Site Improvements
Site - House - Garage - Poultry

Updated on 27 AUG 12
Printed on: 8/27/2012 at 5:51 PM

Common to All - Site Detail

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
	Sanitary Sewer					
G2010	NONE				N/A	
	Storm Sewer System & Drainage					
G2010	Regrade Slopes around House for Positive Drainage	2,127	SF	5.00	10,635	
G2010	Perimeter Drain System	INCLUDED w/ HOUSE			N/A	
G2010	Repair Downspouts	INCLUDED w/ HOUSE			N/A	
G2010	Regrade Slopes around Poultry for Positive Drainage	2,500	SF	5.00	12,500	
G2010	Perimeter Drain System @ Poultry	170	LF	13.75	2,338	
G2010	Replace Blue Ridge Blvd Culvert w/ 12" Class V RCP	40	LF	85.00	3,400	
G2010	12" FES	2	EA	325.00	650	
	Low Voltage					
G2010	Upgrade Telephone to NPS Standards - Allowance	1	LS	15,000.00	15,000	
SUBTOTAL SITE IMPROVEMENTS		492,075	SF	0.14	69,363	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
G40	ELECTRICAL UTILITIES					
	Site Electrical					
G2010	Remove Exterior Lighting & Associated Conduit & Connections	16	HRS	53.99	864	
G2010	Provide New LED Uplighting for Building Façade & Associated Conduit & Connections	8	EA	1,580.75	12,646	
G2020	Provide New LED Uplighting with Optics at Flagpole	2	EA	1,817.87	3,636	
G2020	New Digital Astronomical Clock w/ Installation	1	LS	501.87	502	
G2010	Security & Safety Lighting - Low Level w/ Optic Cut-Off (w/ conduit, connections, etc.)	12	EA	660.75	7,929	
G2020	Circulation Lighting on New Main Pedestrian Route (at orientation, spots along route)	1	LS	12,000.00	12,000	
G9020	Design Team Adjustment	1	LS	-19,011.00	-19,011	
SUBTOTAL SITE IMPROVEMENTS		492,075	SF	0.04	18,565	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
G90	OTHER SITE CONSTRUCTION					
SUBTOTAL OTHER SITE CONSTRUCTION		492,075	SF		EXCLUDED	

TOTAL COST -		492,075	SF	0.21	104,037	
					0.21	/SF

**NPS - TRUMAN FARMS
Building Improvements
House - Garage - Poultry**

Updated on 21 AUG 12
Printed on: 8/27/2012 at 5:51 PM

House Summary			Building GSF	2,278
WBS Code	Description	\$/SF	Total	Total w/Burdens
A10	Foundations	29.84	67,976	125,016
A20	Basement		EXCLUDED	
B10	Superstructure	9.59	21,856	40,197
B20	Exterior Closure	1.16	2,636	4,848
B30	Roofing		EXCLUDED	
C10	Interior Construction	9.00	20,506	37,713
C20	Staircases		EXCLUDED	
C30	Interior Finishes	4.27	9,716	17,869
D10	Conveying Systems		EXCLUDED	
D20	Plumbing	4.04	9,205	16,929
D30	HVAC	5.88	13,390	24,625
D50	Electrical	6.34	14,436	26,549
E10	Equipment		EXCLUDED	
E20	Furnishings		EXCLUDED	
F10	Special Construction	12.05	27,452	50,488
F20	Selective Building Demolition		2,980	5,481
G10	Site Prep		N/A	
G20	Site Improvements		N/A	
Subtotal Direct Construction Costs		83.47	190,153	349,713
	Project Remoteness Factor	N/A	N/A	
	Federal Wage Rate Factor	w/ Unit Costs	N/A	
	State/Local Sales & Use Taxes	N/A	N/A	
	Owner's Design & Preconstruction Contingency	20.00%	38,031	
	Owner's Construction Contingency (after NTP)	5.00%	9,508	
Total Direct Construction Costs		104.34	237,691	
	Standard General Conditions (GC's Onsite Overhead)	13.00%	30,900	
Subtotal NET Construction Cost		117.91	268,591	
	GC's Profit	10.00%	26,859	
	GC's Offsite Overhead	w/Above	w/ Above	
Construction Cost w/o Bonds & Escalation		129.70	295,450	
	Performance & Payment Bond	1.50%	4,432	
	Building & Grading Permits	2.50%	7,386	
	Builder's Risk Insurance	0.75%	2,216	
	Escalation Period in Months	37	34,321	
	Material Testing	2.0%	5,909	
Total Estimated Cost of Construction		153.52	349,713	

NPS - TRUMAN FARMS
Building & Site Improvements

Updated on 15 AUG 12
 Printed on: 8/27/2012 at 5:51 PM

House Detail

Estimate By: Kyle Hoiland
 Date: 09-Jul-12
 Reviewed By: Chris Squadra
 Date: 10-Jul-12

Building GSF **2,278**

Total Cost: **\$190,153**

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
A10	FOUNDATIONS					
A1020	Add foundation drain system	212	LF	13.75	2,915	
A1020	Demolition for Access	80	HRS	49.10	3,928	
A1020	Concrete Pump Jacking Mobilization	1	LS	10,000.00	10,000	
A1020	Stabilize Foundation from Movement - Pump Jack	80	HRS	158.00	12,640	
A1020	Stabilize Foundation from Movement - Concrete	90	CY	107.70	9,693	3,000 psi
A1020	Stabilize Foundation from Movement - Labor	160	HRS	180.00	28,800	4 person crew
	SUBTOTAL FOUNDATIONS				67,976	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
A20	BASEMENT CONSTRUCTION					
	SUBTOTAL BASEMENT CONSTRUCTION				EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
B10	SUPERSTRUCTURE					
B2010	Replace Sill Plates in Contact with Masonry - Material	220	LF	3.84	845	
B2010	Replace Sill Plates in Contact with Masonry - Labor	40	HRS	49.10	1,964	
B2010	Replace Rim Joists that Bears on Masonry - Material	220	LF	5.09	1,120	
B2010	Replace Rim Joists that Bears on Masonry - Labor	40	HRS	49.10	1,964	
B2010	Protect wood members from decay that bear on basement slab	58	LF	2.98	173	Wrap w/ plastic
B2010	Replace porch decking with treated wood decking	340	SF	4.05	1,377	5/4 x 6" treated
B2010	Replace porch framing at dining room & west porches	176	SF	5.96	1,049	
B2010	Allow for investigation/replacement of kitchen floor framing	1	AL	500.00	500	
B2010	Strengthen roof framing over bedroom 204	297	SF	24.00	7,128	
B2010	Add attic venting at bedroom 204 & kitchen	1	EA	150.00	150	
B2010	Repair west wall finishes due to foundation movement	681	SF	4.68	3,187	Exterior only
B2010	Equipment Rental for House Jacking	1	WK	2,400.00	2,400	Exterior only
	SUBTOTAL SUPERSTRUCTURE				21,856	

Uniformat II	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
B20	EXTERIOR CLOSURE					
B2010	Repair gutters/downspouts	1	LS	500.00	500	Repair fascia corners, reconnect downspout
B2010	Windows - add weather-stripping	14	EA	97.76	1,369	
B2010	Replace screen at west screen door	1	EA	250.00	250	
B2099	Reglaze transom at main entry door	8	SF	64.70	518	3/8" th., tempered
	SUBTOTAL EXTERIOR CLOSURE				2,636	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
B30	ROOFING					
	SUBTOTAL ROOFING				EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
C10	INTERIOR CONSTRUCTION					
C1010	Miscellaneous Plaster Repair after Fndtn Stabilization	6,342	SF	3.23	20,506	
B2010	Repair west wall finishes due to foundation movement	w/ Above			w/ Above	

**NPS - TRUMAN FARMS
Building & Site Improvements**

Updated on 15 AUG 12
Printed on: 8/27/2012 at 5:51 PM

House Detail

SUBTOTAL INTERIOR CONSTRUCTION					20,506	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
C20	STAIRCASES					
SUBTOTAL STAIRCASES					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
C30	INTERIOR FINISHES					
C3010	Paint plaster after foundation stabilization (60%)	3,805.20	SF	0.58	2,207	
C3010	Wall paper plaster after foundation stabilization (40%)	2,536.80	SF	2.96	7,509	
SUBTOTAL INTERIOR FINISHES					9,716	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
D10	CONVEYING SYSTEMS					
SUBTOTAL CONVEYING SYSTEMS					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
D20	PLUMBING					
D2010	Install a code approved backflow protection device on <e> ¾" cold water line	1	EA	370.83	371	Exposed lines only
D2010	Insulate cold water line	120	LF	7.78	934	
D2010	Camera scope sanitary sewer line	1	LS	1,500.00	1,500	
D2010	1/2" Cold Water Pipe	20	LF	18.95	379	1/2" copper
D2010	In-line Filter for Humidifier Water	1	LS	495.00	495	
D2010	3/4" Drain Line for Humidifier	20	LF	14.55	291	3/4" copper
D2010	Install New 4" Drain @ Basement - tie to foundation drain & daylight to south	1	LS	497.89	498	
D2010	Install New 4" Sanitary Line from Basement floor drain - tie to foundation drain & daylight to south	156	LF	18.74	2,923	4" cast iron
D2010	Trenching & Backfill for New Drain Line	156	LF	7.95	1,240	
D2010	Concrete Patchback @ Basement	1	LS	575.00	575	
SUBTOTAL PLUMBING					9,205	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
D30	HVAC					
D3010	Replace <e> supply grills at 2nd floor & wall paper wrapped diffusers	6	EA	253.00	1,518	11 lb per hour
D3010	Provide new auto humidity control system	1	LS	4,386.63	4,387	
D3010	Clean, pressure test & reseal <e> duct system	1	LS	2,798.08	2,798	
D3010	Clean <e> supply & return grills	12	HRS	25.00	300	
D3010	Add a direct outside air intake	16	LF	27.00	432	4" aluminum flex
D3010	Repair/replace <e> duct insulation	733	SF	4.74	3,474	2"th, 1.5 lb density
D3010	Provide active crawl space ventilation	2	EA	240.19	480	
SUBTOTAL HVAC					13,390	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
D50	ELECTRICAL					
D5010	Option - Replace <e> feeders from utility panel, main service & breakers	1	LS	9,854.55	9,855	200 amp, 18 breaker, within 100' of utility
D5010	Provide power to humidity control system	1	LS	150.00	150	
D5010	Replace <e> photocell controls to exterior lights with new digital time clock	6	EA	73.00	438	
D5010	Replace <e> light pucks	10	EA	84.00	840	

**NPS - TRUMAN FARMS
Building & Site Improvements**

Updated on 15 AUG 12
Printed on: 8/27/2012 at 5:51 PM

House Detail

D5010	Fire alarm upgrades	2,278	SF	0.88	2,005	
D5010	Temperature Sensor & Alarm System	2	EA	190.20	380	
D5010	Reattach lightning system	16	HRS	48.00	768	
SUBTOTAL ELECTRICAL					14,436	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
SUBTOTAL EQUIPMENT					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
E20	FURNISHINGS					
SUBTOTAL FURNISHINGS					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
F10	SPECIAL CONSTRUCTION					
F1010	Dry Standpipe for Fire Sprinkler System	24	LF	19.27	462	Approximately 40 concealed heads Assume entire ceiling Assume entire ceiling
F1010	New Air Compressor	1	LS	1,240.68	1,241	
F1010	Install New Fire Sprinkler System	2,278	SF	6.27	14,283	
F1010	Drywall Demolition & Repair for New Fire Sprinkler System	2,278	SF	1.80	4,100	
F1010	Plaster Repair for New Fire Sprinkler System	2,278	SF	3.23	7,366	
SUBTOTAL SPECIAL CONSTRUCTION					27,452	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
F20	SELECTIVE BUILDING DEMOLITION					
	Perform Missouri and OSHA-required Lead Safety training for Painters/Contractors	1	LS	600.00	600	
	Sampling for Disposal (TCLP) of Removed Lead-painted Components	1	LS	500.00	500	
	Missouri Renovate Right Permit	1	LS	200.00	200	
	Safety Controls - Demolition or re-painting of Building Components with Lead-Containing Paints	1	LS	1,200.00	1,200	
	Saw-cut Concrete Floor & Remove @ Basement for New Drain Line	40	LF	12.00	480	
SUBTOTAL SELECTIVE BUILDING DEMOLITION					2,980	

TOTAL COST -					190,153	
					83	/sf

NPS - TRUMAN FARMS
House - Garage - Poultry
Building Improvements

Updated on 21 AUG 12
Printed on: 8/27/2012 at 5:51 PM

Garage Summary			Building GSF	346
WBS Code	Description	\$/SF	Total	Total w/Burdens
A10	Foundations		EXCLUDED	
A20	Basement		EXCLUDED	
B10	Superstructure	123.45	42,715	77,231
B20	Exterior Closure	5.07	1,755	3,173
B30	Roofing		EXCLUDED	
C10	Interior Construction		EXCLUDED	
C20	Staircases		EXCLUDED	
C30	Interior Finishes		EXCLUDED	
D10	Conveying Systems		EXCLUDED	
D20	Plumbing		EXCLUDED	
D30	HVAC		EXCLUDED	
D50	Electrical		380	
E10	Equipment		EXCLUDED	
E20	Furnishings		EXCLUDED	
F10	Special Construction		EXCLUDED	
F20	Selective Building Demolition		EXCLUDED	
G10	Site Prep		N/A	
G20	Site Improvements		N/A	
Subtotal Direct Construction Costs		129.63	44,850	81,092
	Project Remoteness Factor	N/A	N/A	
	Federal Wage Rate Factor	w/ Unit Costs	N/A	
	State/Local Sales & Use Taxes	N/A	N/A	
	Owner's Design & Preconstruction Contingency	20.00%	8,970	
	Owner's Construction Contingency (after NTP)	5.00%	2,243	
Total Direct Construction Costs		162.03	56,063	
	Standard General Conditions (GC's Onsite Overhead)	13.00%	7,288	
Subtotal NET Construction Cost		183.10	63,351	
	GC's Profit	10.00%	6,335	
	GC's Offsite Overhead	w/Above	w/ Above	
Construction Cost w/o Bonds & Escalation		201.41	69,686	
	Performance & Payment Bond	1.50%	1,045	
	Building & Grading Permits	2.50%	1,742	
	Builder's Risk Insurance	0.75%	523	
	Escalation Period in Months	37	8,095	
	Material Testing	2.0%	w/ House	
Total Estimated Cost of Construction		234.37	81,092	

**NPS - TRUMAN FARMS
Building & Site Improvements**

Updated on 21 AUG 12
Printed on: 8/27/2012 at 5:51 PM

Garage Detail

Estimate By: Kyle Hoiland
Date: 09-Jul-12
Reviewed By: Chris Squadra
Date: 10-Jul-12

Building GSF **346**

Total Cost: **\$44,850**

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
A10	FOUNDATIONS					
	SUBTOTAL FOUNDATIONS				EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
A20	BASEMENT CONSTRUCTION					
	SUBTOTAL BASEMENT CONSTRUCTION				EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
B10	SUPERSTRUCTURE					
B2010	Strengthen Floor Rim Joist	77	SF	5.09	392	
B2010	Replace Flooring with Treated Wood	346	SF	4.05	1,401	
B2010	Add Connections for Roof Anchorage (wind uplift)	346	SF	5.96	2,062	
B2010	Verify / Strengthen Wall Studs & Rim Joist	616	SF	24.00	14,784	
B2010	Strengthen All Openings Studs & Headers	w/ Above			w/ Above	
B2010	Replace South Top of Wall Plate (decayed by insects)	77	LF	3.84	296	
	Additional Decay Replacement (ALLOWANCE)	1	LS	1,000.00	1,000	
B2010	Add North/South Lateral Framing System	1	LS	22,780.00	22,780	2x6 framing reinforcement throughout
	SUBTOTAL SUPERSTRUCTURE				42,715	

Uniformat II	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
B20	EXTERIOR CLOSURE					
B2010	Repair Doors/Hinges	9	EA	195.00	1,755	Garage & entry
	SUBTOTAL EXTERIOR CLOSURE				1,755	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
B30	ROOFING					
	SUBTOTAL ROOFING				EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
C10	INTERIOR CONSTRUCTION					
	SUBTOTAL INTERIOR CONSTRUCTION				EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
C20	STAIRCASES					
	SUBTOTAL STAIRCASES				EXCLUDED	

Uniformat II	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
C30	INTERIOR FINISHES					
	SUBTOTAL INTERIOR FINISHES				EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
D10	CONVEYING SYSTEMS					
	SUBTOTAL CONVEYING SYSTEMS				EXCLUDED	

**NPS - TRUMAN FARMS
Building & Site Improvements**

Updated on 21 AUG 12
Printed on: 8/27/2012 at 5:51 PM

Garage Detail

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
D20	PLUMBING					
SUBTOTAL PLUMBING					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
D30	HVAC					
SUBTOTAL HVAC					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
D50	ELECTRICAL					
D5010	Temperature Sensor & Alarm System	2	EA	190.20	380	
SUBTOTAL ELECTRICAL					380	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
E10	EQUIPMENT					
SUBTOTAL EQUIPMENT					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
E20	FURNISHINGS					
SUBTOTAL FURNISHINGS					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
F10	SPECIAL CONSTRUCTION					
F1010	Install New Fire Sprinkler System				Excluded	
SUBTOTAL SPECIAL CONSTRUCTION					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
F20	SELECTIVE BUILDING DEMOLITION					
SUBTOTAL SELECTIVE BUILDING DEMOLITION					EXCLUDED	

TOTAL COST -					44,850	
					130	/sf

NPS - TRUMAN FARMS
House - Garage - Poultry
Building Improvements

Updated on 17 JULY 12
Printed on: 8/27/2012 at 5:51 PM

Poultry Summary			Building GSF	261
WBS Code	Description	\$/SF	Total	Total w/Burdens
A10	Foundations	25.54	6,667	12,054
A20	Basement		EXCLUDED	
B10	Superstructure	29.75	7,764	14,038
B20	Exterior Closure		EXCLUDED	
B30	Roofing	8.30	2,166	3,917
C10	Interior Construction		EXCLUDED	
C20	Staircases		EXCLUDED	
C30	Interior Finishes		EXCLUDED	
D10	Conveying Systems		EXCLUDED	
D20	Plumbing		EXCLUDED	
D30	HVAC		EXCLUDED	
D50	Electrical		EXCLUDED	
E10	Equipment		EXCLUDED	
E20	Furnishings		EXCLUDED	
F10	Special Construction		EXCLUDED	
F20	Selective Building Demolition		EXCLUDED	
G10	Site Prep		N/A	
G20	Site Improvements		N/A	
Subtotal Direct Construction Costs		63.59	16,597	30,009
	Project Remoteness Factor	N/A	N/A	
	Federal Wage Rate Factor	w/ Unit Costs	N/A	
	State/Local Sales & Use Taxes	N/A	N/A	
	Owner's Design & Preconstruction Contingency	20.00%	3,319	
	Owner's Construction Contingency (after NTP)	5.00%	830	
Total Direct Construction Costs		79.49	20,747	
	Standard General Conditions (GC's Onsite Overhead)	13.00%	2,697	
Subtotal NET Construction Cost		89.82	23,444	
	GC's Profit	10.00%	2,344	
	GC's Offsite Overhead	w/Above	w/ Above	
Construction Cost w/o Bonds & Escalation		98.81	25,788	
	Performance & Payment Bond	1.50%	387	
	Building & Grading Permits	2.50%	645	
	Builder's Risk Insurance	0.75%	193	
	Escalation Period in Months	37	2,996	
	Material Testing	2.0%	w/ House	
Total Estimated Cost of Construction		114.98	30,009	

Poultry Detail

Estimate By: Kyle Hoiland
Date: 09-Jul-12
Reviewed By: Chris Squadra
Date: 11-Jul-12

Building GSF **261**

Total Cost: **\$16,597**

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
A10	FOUNDATIONS					
A1020	Dismantle Poultry building	32	HRS	49.10	1,571	
A1020	Demo existing slab foundation (2/3 of bldg area)	175	SF	5.16	902	
A1020	Prep grade for new foundation	1	LS	1,200.00	1,200	
A1020	Add foundation - 4" slab w/ thickened edge	7	CY	458.85	2,993	
	SUBTOTAL FOUNDATIONS				6,667	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
A20	BASEMENT CONSTRUCTION					
	SUBTOTAL BASEMENT CONSTRUCTION				EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
B10	SUPERSTRUCTURE					
B2010	Add 2 purlins & wall support	176	LF	3.29	579	
B2010	Repair damage from tree - sheathing	261	SF	2.18	569	
B2010	Replace wall sheathing with treated	720	SF	6.76	4,870	
B2010	Anchor walls to new foundation - Metal Hold-downs	30	EA	18.74	562	
B2010	Add a lateral bracing system (nail sheathing to girts or add diagonal sheathing)	360	LF	3.29	1,184	
	SUBTOTAL SUPERSTRUCTURE				7,764	

Uniformat II	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
B20	EXTERIOR CLOSURE					
	SUBTOTAL EXTERIOR CLOSURE				EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
B30	ROOFING					
B3010	Repair damage from tree - Corrugated Metal Roofing	261	SF	8.30	2,166	
	SUBTOTAL ROOFING				2,166	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
C10	INTERIOR CONSTRUCTION					
	SUBTOTAL INTERIOR CONSTRUCTION				EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
C20	STAIRCASES					
	SUBTOTAL STAIRCASES				EXCLUDED	

Uniformat II	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
C30	INTERIOR FINISHES					
	SUBTOTAL INTERIOR FINISHES				EXCLUDED	

Poultry Detail

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
D10	CONVEYING SYSTEMS					
SUBTOTAL CONVEYING SYSTEMS					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
D20	PLUMBING					
SUBTOTAL PLUMBING					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
D30	HVAC					
SUBTOTAL HVAC					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
D50	ELECTRICAL					
SUBTOTAL ELECTRICAL					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
E10	EQUIPMENT					
SUBTOTAL EQUIPMENT					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
E20	FURNISHINGS					
SUBTOTAL FURNISHINGS					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
F10	SPECIAL CONSTRUCTION					
SUBTOTAL SPECIAL CONSTRUCTION					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
F20	SELECTIVE BUILDING DEMOLITION					
SUBTOTAL SELECTIVE BUILDING DEMOLITION					EXCLUDED	

TOTAL COST -					16,597	
					64	/sf

HSTR VA Report 09/07/12
Summary for Class C Cost Estimate
Rev 07 Costing 08/27/2012

The following summary chart is included to help the reviewer see the breakout of costs and understand the totals vs. the ARC Class C Estimate in the following pages

	Alt 1	Notes / Comparison
Common to All		
Site / Utilities	\$ 191,337	
House	\$ 349,713	
Garage	\$ 81,092	
Poultry	\$ 30,009	
VC	\$ 1,400,115	
Subtotal	\$ 2,052,266	From ARC Cost estimate for "Common to All"
VC Geothermal	\$ 50,000	Placeholder added across the board based on VA Meeting
Subtotal	\$ 2,102,266	
Alternative Pricing		
Site	\$ 1,181,412	
Undergrounding Elec	\$ -	
Buildings	\$ 44,962	
Subtotal	\$ 1,226,374	From ARC Cost estimate per Alternative Summary
Exhibits	\$ 250,000	Missing from ARC's Rev 07 costs - \$250K for exhibits for Alt 1
Subtotal	\$ 1,476,374	
Total Initial Cost	\$ 3,578,640	
Life Cycle Cost	\$ 168,045	As developed and presented in the VA Meeting
Grand Total	\$ 3,746,685	These are the numbers used in the VA graph.

NPS - TRUMAN FARMS
Building & Site Improvements
Site - House - Garage - Poultry

Updated on 21 AUG 12
Printed on: 8/27/2012 at 5:49 PM

Alternative 01-Summary

Location	Description		Total	Total w/Burdens
Bldgs	Alter Porch 107		24,448	44,962
Site	Site Improvements		642,380	1,181,412
	Subtotal Direct Construction Costs		666,827	1,226,374
	Project Remoteness Factor	N/A	N/A	
	Federal Wage Rate Factor	w/ Unit Costs	w/ Unit Costs	
	State/Local Sales & Use Taxes	N/A	N/A	
	Owner's Design & Preconstruction Contingency	20.00%	133,365	
	Owner's Construction Contingency (after NTP)	5.00%	33,341	
	Total Direct Construction Costs		833,534	
	Standard General Conditions (GC's Onsite Overhead)	13.00%	108,359	
	Subtotal NET Construction Cost		941,893	
	GC's Profit	10.00%	94,189	
	GC's Offsite Overhead	w/Above	w/ Above	
	Construction Cost w/o Bonds & Escalation		1,036,083	
	Performance & Payment Bond	1.50%	15,541	
	Building & Grading Permits	2.50%	25,902	
	Builder's Risk Insurance	0.75%	7,771	
	Escalation Period in Months	37	120,355	
	Material Testing	2.0%	20,722	
	Total Estimated Cost of Construction		1,226,374	

NPS - TRUMAN FARMS
Building & Site Improvements
Site - House - Garage - Poultry

Updated on 21 AUG 12
Printed on: 8/27/2012 at 5:49 PM

Alt 1 - Bldgs

Estimate By: Kyle Hoiland
Date: 05-Jul-12
Reviewed By: Chris Squadra
Date: 10-Jul-12

Building GSF **2,278**

Total Cost: **\$24,448**

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
A10	FOUNDATIONS					
A1020	SOG Prep	163	SF	2.00	326	One side only
A1020	4" th Concrete slab w/ thickened edge - Ramp	6	CY	458.85	2,546	
A1020	1 5/8" Pipe Railing	28	LF	128.20	3,590	
	SUBTOTAL FOUNDATIONS				6,461	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
A20	BASEMENT CONSTRUCTION					
	SUBTOTAL BASEMENT CONSTRUCTION				EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
B10	SUPERSTRUCTURE					
B2010	Enlarge Door Openings @ 110 & 111 - Labor	24	HRS	49.10	1,178	
B2010	Enlarge Door Openings @ 110 & 111 - Materials	1	LS	500.00	500	
B2010	Porch Screen Repair	63	SF	8.50	536	
B2010	Wood Wainscot Repair	75	SF	6.50	488	
B2010	Reinforce Porch 107 Floor for ABA Lift	1	LS	1,000.00	1,000	
B2010	Add Opening to Exterior Wall between Kitchen & Porch 107	1	LS	1,000.00	1,000	
	SUBTOTAL SUPERSTRUCTURE				4,701	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
B20	EXTERIOR CLOSURE					
B2010	Replace doors 110 & 111	2	EA	1,987.17	3,974	Automatic opener
B2010	New ABA hardware	2	EA	1,495.00	2,990	
B2010	Exterior Paint	272	SF	0.90	245	
	SUBTOTAL EXTERIOR CLOSURE				7,209	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
B30	ROOFING					
	SUBTOTAL ROOFING				EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
C10	INTERIOR CONSTRUCTION					
	SUBTOTAL INTERIOR CONSTRUCTION				EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
C20	STAIRCASES					
	SUBTOTAL STAIRCASES				EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
C30	INTERIOR FINISHES					
C3010	House Drywall Patching at new door openings	122	SF	3.23	394	

NPS - TRUMAN FARMS
Building & Site Improvements
Site - House - Garage - Poultry

Updated on 21 AUG 12
Printed on: 8/27/2012 at 5:49 PM

Alt 1 - Bldgs

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
C3010	Interior Paint at new door openings	122	SF	0.58	71	
C3010	Door Casing	52	LF	4.30	224	
C3010	Interior trim paint/stain	52	LF	1.50	78	
SUBTOTAL INTERIOR FINISHES					767	
Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
D10	CONVEYING SYSTEMS					
SUBTOTAL CONVEYING SYSTEMS					EXCLUDED	
Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
D20	PLUMBING					
SUBTOTAL PLUMBING					EXCLUDED	
Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
D30	HVAC					
SUBTOTAL HVAC					EXCLUDED	
Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
D50	ELECTRICAL					
D5010	Add Electrical for ABA Lift	1	EA	950.00	950	
SUBTOTAL ELECTRICAL					950	
Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
E10	EQUIPMENT					
E1010	ABA Exterior Stair Lift	1	EA	2,858.90	2,859	
E1010	ABA Lift Installation	1	EA	1,500.00	1,500	
SUBTOTAL EQUIPMENT					4,359	
Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
E20	FURNISHINGS					
SUBTOTAL FURNISHINGS					EXCLUDED	
Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
F10	SPECIAL CONSTRUCTION					
SUBTOTAL SPECIAL CONSTRUCTION					EXCLUDED	
Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
F20	SELECTIVE BUILDING DEMOLITION					
SUBTOTAL SELECTIVE BUILDING DEMOLITION					EXCLUDED	
TOTAL COST -					24,448	
					11	/sf

NPS - TRUMAN FARMS
Building & Site Improvements
Site - House - Garage - Poultry

Updated on 21 AUG 12
Printed on: 8/27/2012 at 5:49 PM

Alternative 01-Site

Site GSF: **492,075**
Total Cost: **\$642,380**

Estimate By: KH
Date: 03-Jul-12
Reviewed By: CS
Date: 10-Jul-12

Unifomat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
G10	SITE PREPARATION					
	General Site Prep					
G1010	Mobilization	1	LS	5,000.00	5,000	
G1010	Construction Surveying & Historic Documentation	1	LS	10,000.00	10,000	
G1010	Temporary Construction Fence	500	LF	2.50	1,250	
G1010	Traffic Control in the ROW	1	LS	2,000.00	2,000	
G1010	Erosion Control	500	LF	5.00	2,500	
G1010	Tree Protection	500	LF	2.00	1,000	
	Site Demolition					
G1020	Remove and Dispose of Asphalt Pavement	18,000	SF	0.98	17,560	
G1020	Remove and Dispose of Concrete Curb and Gutter	1,455	LF	6.34	9,225	
G1020	Remove and Dispose of Concrete Pavement	1,380	SF	12.44	17,167	
G1020	Remove and Dispose of Miscellaneous Site Elements	1	LS	5,000.00	5,000	
G1020	Remove and Reset Steel Gate	1	EA	507.80	508	
G1020	Sod Stripping	2,084	SF	0.30	624	
G1020	Remove & Dispose of Existing Trees (ALLOWANCE)	11	EA	630.34	6,934	
SUBTOTAL SITE PREPARATION		492,075	SF	0.16	78,767	

Unifomat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
G20	SITE IMPROVEMENTS					
	General Site Improvements					
G2010	Earthwork- Allowance	19,000	SF	5.00	95,000	
	Roads, Parking & Paths					
G2020	Aggregate Base Course- Gravel Drive	32,400	SF	2.89	93,636	
G2020	Crusher Fines Paving	1,240	SF	6.00	7,440	
G2020	Asphalt Patch (Roadway)	1	TON	973.00	973	
G2020	Concrete Paving (4" depth)	1,270	SF	7.14	9,068	
G2020	Special Finish to Concrete Paving	1,270	SF	3.00	3,810	
G2020	Concrete Driveway - Farm Entry	600	SF	5.53	3,318	

NPS - TRUMAN FARMS
Building & Site Improvements
Site - House - Garage - Poultry

Updated on 21 AUG 12
Printed on: 8/27/2012 at 5:49 PM

Alternative 01-Site

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
G2020	Pavement Marking	500	LF	2.92	1,460	(1) tree every 30 ft
G2020	Parking/Traffic Sign	2	EA	350.00	700	
G2020	Gate	1	LS	3,000.00	3,000	
G2020	Asphalt Paving	9,600	SF	5.04	48,384	
G2020	Design Team Adjustment	1	LS	21.00	21	
	Landscape					
G2020	Topsoil @ 3" (includes purchase, trucking, placement)	3,020	CY	12.00	36,240	
G2020	Topsoil Fine Grade	3,020	CY	0.75	2,265	
G2020	Western Wheatgrass Seeding (incl soil prep.)	187,000	SF	0.22	41,808	
G2020	Native Seeding- Grass to mimic crop (incl soil prep.)	90,500	SF	0.22	20,233	
G2020	Native Seeding - Garden (incl soil prep.)	23,700	SF	0.55	13,035	
G2020	Native Seeding - Farmhouse yard (incl soil prep.)	25,000	SF	0.22	5,589	
G2020	Tree buffer	26,000	SF	3.13	81,276	
G2020	Vegetation Screening (tree/shrub mix)	12,000	SF	2.78	33,360	
G2020	Deciduous Trees (2-1/2"cal.)- Maple Grove	3	EA	450.00	1,350	
G2020	Bluegrass Sod @ Maple Grove	46,000	SF	0.82	37,720	
SUBTOTAL SITE ELECTRICAL UTILITIES		492,075	SF	1.10	539,686	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
G90	OTHER SITE CONSTRUCTION					
	Structures					
G2010	Mark archeological remains/building outlines	550	LF	36.23	19,927	
G2010	Wayside - Allowance	1	AL	2,000.00	2,000	
G2010	Interpretive Sign - Allowance	1	AL	2,000.00	2,000	
SUBTOTAL OTHER SITE CONSTRUCTION		492,075	SF	0.05	23,927	

TOTAL COST -	492,075	SF	1.31	642,380	
				1.31	By Owner

HSTR VA Report 09/07/12
Summary for Class C Cost Estimate
Rev 07 Costing 08/27/2012

The following summary chart is included to help the reviewer see the breakout of costs and understand the totals vs. the ARC Class C Estimate in the following pages

	Alt 2	Notes / Comparison
Common to All		
Site / Utilities	\$ 191,337	
House	\$ 349,713	
Garage	\$ 81,092	
Poultry	\$ 30,009	
VC	\$ 1,400,115	
Subtotal	\$ 2,052,266	From ARC Cost estimate for "Common to All"
VC Geothermal	\$ 50,000	Placeholder added across the board based on VA Meeting
Subtotal	\$ 2,102,266	
Alternative Pricing		
Site	\$ 1,544,596	
Undergrounding Elec	\$ -	
Buildings	\$ 210,920	
Subtotal	\$ 1,755,516	
Exhibits	\$ -	
Subtotal	\$ 1,755,516	
Total Initial Cost	\$ 3,857,782	
Life Cycle Cost	\$ 394,753	As developed and presented in the VA Meeting
Grand Total	\$ 4,252,535	These are the numbers used in the VA graph.

NPS - TRUMAN FARMS
Building & Site Improvements
Site - House - Garage - Poultry

Updated on 27 AUG 12
Printed on: 8/27/2012 at 5:49 PM

Alternative 02-Summary

Location	Description		Total	Total w/Burdens
Bldgs	Alter Porch 106		114,685	210,920
Site	Site Improvements		839,857	1,544,596
	Subtotal Direct Construction Costs		954,542	1,755,515
	Project Remoteness Factor	N/A	N/A	
	Federal Wage Rate Factor	w/ Unit Costs	N/A	
	State/Local Sales & Use Taxes	N/A	N/A	
	Owner's Design & Preconstruction Contingency	20.00%	190,908	
	Owner's Construction Contingency (after NTP)	5.00%	47,727	
	Total Direct Construction Costs		1,193,178	
	Standard General Conditions (GC's Onsite Overhead)	13.00%	155,113	
	Subtotal NET Construction Cost		1,348,291	
	GC's Profit	10.00%	134,829	
	GC's Offsite Overhead	w/Above	w/ Above	
	Construction Cost w/o Bonds & Escalation		1,483,120	
	Performance & Payment Bond	1.50%	22,247	
	Building & Grading Permits	2.50%	37,078	
	Builder's Risk Insurance	0.75%	11,123	
	Escalation Period in Months	37	172,285	
	Material Testing	2.0%	29,662	
	Total Estimated Cost of Construction		1,755,515	

NPS - TRUMAN FARMS
Building & Site Improvements
Site - House - Garage - Poultry

Updated on 22 AUG 12
Printed on: 8/27/2012 at 5:49 PM

Alt 2 - Bldgs

Estimate By: Kyle Hoiland
Date: 05-Jul-12
Reviewed By: Chris Squadra
Date: 10-Jul-12

Building GSF **2,278**

Total Cost: **\$114,685**

Unifomat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
A10	FOUNDATIONS					
A1020	Sonotube supports for new ramp at House Entry	4	EA	195.00	780	
	Garage					
B2010	Excavation for new ramp	1	LS	1,200.00	1,200	
B2010	SOG prep for new ramp	60	SF	4.00	240	
B2010	New ABA ramp at Garage (concrete)	60	SF	8.50	510	
	SUBTOTAL FOUNDATIONS				2,730	

Unifomat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
A20	BASEMENT CONSTRUCTION					
	SUBTOTAL BASEMENT CONSTRUCTION				EXCLUDED	

Unifomat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
B10	SUPERSTRUCTURE					
B2010	Enlarge Door Openings @ 107 & 108 - labor	24	HRS	49.10	1,178	
B2010	Enlarge Door Openings - materials	1	LS	500.00	500	
B2010	Screen Repair	63	SF	8.50	536	
B2010	Wood Wainscot Repair	75	SF	6.50	488	
B2010	Exterior Paint	298	SF	0.90	268	
B2010	New ABA Ramp at House (wood framed w/ decking)	125	SF	9.50	1,188	
B2010	New Wood Railing at ABA Ramp	46	LF	35.64	1,639	
	SUBTOTAL SUPERSTRUCTURE				5,796	

Unifomat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
B20	EXTERIOR CLOSURE					
B2010	Replace doors 107 & 108	2	EA	1,987.17	3,974	
B2010	New ABA hardware at Entry doors	2	EA	1,495.00	2,990	
	SUBTOTAL EXTERIOR CLOSURE				6,964	

Unifomat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
B30	ROOFING					
	SUBTOTAL ROOFING				EXCLUDED	

Unifomat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
C10	INTERIOR CONSTRUCTION					
	Garage					
C1010	Replace Door Hardware	1	EA	326.00	326	
	SUBTOTAL INTERIOR CONSTRUCTION				326	

Unifomat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
C20	STAIRCASES					
	SUBTOTAL STAIRCASES				EXCLUDED	

NPS - TRUMAN FARMS
Building & Site Improvements
Site - House - Garage - Poultry

Updated on 22 AUG 12
Printed on: 8/27/2012 at 5:49 PM

Alt 2 - Bldgs

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
C30	INTERIOR FINISHES					
	House					
C3010	Drywall Patching at new door openings	148	SF	3.23	479	
C3010	Interior Paint at new door openings	148	SF	0.58	86	
C3010	Door Casing	52	LF	4.30	224	
C3010	Interior trim paint/stain	52	LF	1.50	78	
	Garage					
C3010	Repair plaster at walls & ceilings	616	SF	3.23	1,992	
C3010	Repair floor	1	LS	500.00	500	
SUBTOTAL INTERIOR FINISHES					3,358	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
D10	CONVEYING SYSTEMS					
SUBTOTAL CONVEYING SYSTEMS					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
D20	PLUMBING					
SUBTOTAL PLUMBING					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
D30	HVAC					
SUBTOTAL HVAC					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
D50	ELECTRICAL					
	Garage					
D5010	Add electricity to Garage for egress lights & power - Subpanel	1	LS	1,800.00	1,800	
D5010	Add electricity to Garage for egress lights & power - Conduit & Wires	120	LF	12.00	1,440	
D5010	Trenching & Bedding from House to Garage	120	LF	7.00	840	
D5010	New Egress Lighting	4	EA	175.00	700	
D5010	New Outlets @ Garage	4	EA	75.00	300	
D5010	Fire Alarm Upgrades @ Garage	346	SF	2.20	761	
SUBTOTAL ELECTRICAL					5,841	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
E10	EQUIPMENT					
SUBTOTAL EQUIPMENT					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
E20	FURNISHINGS					
SUBTOTAL FURNISHINGS					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
F10	SPECIAL CONSTRUCTION					
F1010	Exhibit Allowance @ Garage	250	SF	350.00	87,500	
F1010	Install New Fire Sprinkler System @ Garage	346	SF	6.27	2,169	
SUBTOTAL SPECIAL CONSTRUCTION					89,669	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
F20	SELECTIVE BUILDING DEMOLITION					
SUBTOTAL SELECTIVE BUILDING DEMOLITION					EXCLUDED	

NPS - TRUMAN FARMS
Building & Site Improvements
Site - House - Garage - Poultry

Updated on 22 AUG 12
Printed on: 8/27/2012 at 5:49 PM

Alt 2 - Bldgs

TOTAL COST -				114,685	
				50	/sf

NPS - TRUMAN FARMS
Building & Site Improvements
Site - House - Garage - Poultry

Updated on 27 AUG 12
Printed on: 8/27/2012 at 5:49 PM

Alternative 02 - Site

Site GSF: **492,075**
Total Cost: **\$839,857**

Estimate By: KH
Date: 03-Jul-12
Reviewed By: CS
Date: 10-Jul-12

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
G10	SITE PREPARATION					
	General Site Prep					
G1010	Mobilization	1	LS	5,000.00	5,000	
G1010	Construction Surveying & Historic Documentation	1	LS	10,000.00	10,000	
G1010	Temporary Construction Fence	500	LF	2.50	1,250	
G1010	Traffic Control in the ROW	1	LS	2,000.00	2,000	
G1010	Erosion Control	500	LF	5.00	2,500	
G1010	Tree Protection	900	LF	2.00	1,800	
	Site Demolition					
G1020	Remove and Dispose of Asphalt Pavement	46,400	SF	0.98	45,266	
G1020	Remove and Dispose of Concrete Curb and Gutter	1,455	LF	6.34	9,225	
G1020	Remove and Dispose of Concrete Pavement	1,380	SF	12.44	17,167	
G1020	Remove and Dispose of Lightposts	2	EA	275.00	550	
G1020	Remove and Dispose of Miscellaneous Site Elements	1	LS	5,000.00	5,000	
G1020	Remove and Reset Steel Gate	N/A			N/A	
G1020	Sod Stripping	16,800	SF	0.30	5,030	
G1020	Remove & Dispose of Existing Trees (ALLOWANCE)	70	EA	630.34	44,124	
G1020	Design Team Adjustment	1	LS	-3.00	-3	
SUBTOTAL SITE PREPARATION		492,075	SF	0.30	148,908	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
G20	SITE IMPROVEMENTS					
	General Site Improvements					
G2010	Earthwork- Allowance	20,500	SF	5.00	102,500	
G2010	Extend Water Line to Garage - 6" DIP	94	LF	49.27	4,631	
	Roads, Parking & Paths					
G2020	Aggregate Base Course- Gravel Drive	17,388	SF	2.89	50,251	
G2020	Crusher Fines Paving	22,500	SF	6.00	135,000	
G2020	Asphalt Patch (Roadway)	1	TON	973.00	973	
G2020	Asphalt Paving Mobilization				w/ Above	
G2020	Curb Ramp	1	EA	1,200.00	1,200	

Alternative 02 - Site

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
G2020	Concrete Driveway - Farm Entry	600	SF	5.53	3,318	
G2020	Pavement Marking	N/A			N/A	
G2020	Gate	1	LS	3,000.00	3,000	
G2020	Design Team Adjustment	1	LS	-5,154.00	-5,154	
	Landscape					
G2020	Topsoil @ 3" (includes purchase, trucking, placement)	2,630	CY	12.00	31,560	
G2020	Western Wheatgrass Seeding (incl soil prep.)	171,500	SF	0.22	38,342	
G2020	Native Seeding- Grass to mimic crop (incl soil prep.)	105,000	SF	0.22	23,475	
G2020	Native Seeding - Garden (incl soil prep.)	23,700	SF	0.55	13,035	
G2020	Native Seeding - Farmhouse yard (incl soil prep.)	25,000	SF	0.22	5,589	
G2020	Tree buffer	44,500	SF	3.13	139,107	
G2020	Vegetation Screening (tree/shrub mix)	8,000	SF	2.78	22,240	
G2020	Deciduous Trees (2-1/2"cal.)- Maple Grove	3	EA	450.00	1,350	
G2020	Bluegrass Sod @ Maple Grove	46,000	SF	0.82	37,720	
SUBTOTAL SITE ELECTRICAL UTILITIES		492,075	SF	1.24	608,138	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
G90	OTHER SITE CONSTRUCTION					
	Structures					
G2010	Mark Barn - Allowance	1	AL	20,000.00	20,000	
G2010	Mark Granary / Pavilion - Allowance	1	AL	10,000.00	10,000	
	Miscellaneous					
G9020	Post & Wire Fence	660	LF	21.66	14,296	
G9020	Rose Arbor - Post & Wire	2	EA	250.00	500	
G9020	Kiosk	1	EA	8,000.00	8,000	
G9020	Interpretive Sign	3	EA	2,000.00	6,000	
G9020	Terrace / Gathering Area	1	AL	10,000.00	10,000	
G9020	Garden Plots (seeds/planting, soil prep., mulch, edger)	1	EA	950.00	950	
G9020	Mark non-extant building foundations	50	LF	36.23	1,812	
G9020	Rainbarrels at Farmhouse	2	EA	539.00	1,078	
G9020	Reset Stone Posts	5	EA	3,275.00	16,375	
G9020	Restore Water Pump	1	EA	1,339.00	1,339	
G9020	Design Team Adjustment	1	LS	-7,538.00	-7,538	
SUBTOTAL OTHER SITE CONSTRUCTION		492,075	SF	0.17	82,811	

TOTAL COST -	492,075	SF	1.71	839,857	
				1.71	/SF

HSTR VA Report 09/07/12
Summary for Class C Cost Estimate
Rev 07 Costing 08/27/2012

The following summary chart is included to help the reviewer see the breakout of costs and understand the totals vs. the ARC Class C Estimate in the following pages

	Alt 3a	Notes / Comparison
Common to All		
Site / Utilities	\$ 191,337	
House	\$ 349,713	
Garage	\$ 81,092	
Poultry	\$ 30,009	
VC	\$ 1,400,115	
Subtotal	\$ 2,052,266	From ARC Cost estimate for "Common to All"
VC Geothermal	\$ 50,000	Placeholder added across the board based on VA Meeting
Subtotal	\$ 2,102,266	
Alternative Pricing		
Site	\$ 1,525,910	
Undergrounding Elec	\$ 500,000	Not in ARC costs of following pages
Buildings	\$ 7,338	
Subtotal	\$ 2,033,248	
Exhibits		
Subtotal	\$ 2,033,248	
Total Initial Cost	\$ 4,135,514	
Life Cycle Cost	\$ 287,152	As developed and presented in the VA Meeting
Grand Total	\$ 4,422,666	These are the numbers used in the VA graph.

NPS - TRUMAN FARMS
Building & Site Improvements
Site - House - Garage - Poultry

Updated on 27 AUG 12
Printed on: 8/27/2012 at 5:50 PM

Alternative 03A-Summary

Location	Description		Total	Total w/Burdens
Bldgs	Minor Modifications to Porch 106		3,990	7,338
Site	Site Improvements		829,696	1,525,910
	Subtotal Direct Construction Costs		833,686	1,533,248
	Project Remoteness Factor	N/A	N/A	
	Federal Wage Rate Factor	w/ Unit Costs	N/A	
	State/Local Sales & Use Taxes	N/A	N/A	
	Owner's Design & Preconstruction Contingency	20.00%	166,737	
	Owner's Construction Contingency (after NTP)	5.00%	41,684	
	Total Direct Construction Costs		1,042,108	
	Standard General Conditions (GC's Onsite Overhead)	13.00%	135,474	
	Subtotal NET Construction Cost		1,177,582	
	GC's Profit	10.00%	117,758	
	GC's Offsite Overhead	w/Above	w/ Above	
	Construction Cost w/o Bonds & Escalation		1,295,340	
	Performance & Payment Bond	1.50%	19,430	
	Building & Grading Permits	2.50%	32,384	
	Builder's Risk Insurance	0.75%	9,715	
	Escalation Period in Months	37	150,472	
	Material Testing	2.0%	25,907	
	Total Estimated Cost of Construction		1,533,248	

NPS - TRUMAN FARMS
Building & Site Improvements
Site - House - Garage - Poultry

Updated on 21 AUG 12
Printed on: 8/27/2012 at 5:50 PM

Alt 3A - Bldgs

Estimate By: Kyle Hoiland
Date: 05-Jul-12
Reviewed By: Chris Squadra
Date: 10-Jul-12

Building GSF **2,278**

Total Cost: **\$3,990**

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
A10	FOUNDATIONS					
SUBTOTAL FOUNDATIONS					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
A20	BASEMENT CONSTRUCTION					
SUBTOTAL BASEMENT CONSTRUCTION					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
B10	SUPERSTRUCTURE					
B2010	Minor modifications to improve <e> ABA access to porch 106 but no alterations to door sizes (doors 107 & 108)	2	EA	1,495.00	2,990	New ADA thresholds & hardware
SUBTOTAL SUPERSTRUCTURE					2,990	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
B20	EXTERIOR CLOSURE					
SUBTOTAL EXTERIOR CLOSURE					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
B30	ROOFING					
SUBTOTAL ROOFING					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
C10	INTERIOR CONSTRUCTION					
SUBTOTAL INTERIOR CONSTRUCTION					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
C20	STAIRCASES					
SUBTOTAL STAIRCASES					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
C30	INTERIOR FINISHES					
SUBTOTAL INTERIOR FINISHES					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
D10	CONVEYING SYSTEMS					
SUBTOTAL CONVEYING SYSTEMS					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
D20	PLUMBING					
SUBTOTAL PLUMBING					EXCLUDED	

NPS - TRUMAN FARMS
Building & Site Improvements
Site - House - Garage - Poultry

Updated on 21 AUG 12
Printed on: 8/27/2012 at 5:50 PM

Alt 3A - Bldgs

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
D30	HVAC					
SUBTOTAL HVAC					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
D50	ELECTRICAL					
SUBTOTAL ELECTRICAL					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
E10	EQUIPMENT					
SUBTOTAL EQUIPMENT					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
E20	FURNISHINGS					
SUBTOTAL FURNISHINGS					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
F10	SPECIAL CONSTRUCTION					See Poultry - Detailed Estimate Allowance provided for additional time to relocate & rebuild structure.
	Poultry					
F1010	Relocate as per Mundus Bishop - ALLOWANCE	1	AL	1,000.00	1,000	
SUBTOTAL SPECIAL CONSTRUCTION					1,000	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
F20	SELECTIVE BUILDING DEMOLITION					
SUBTOTAL SELECTIVE BUILDING DEMOLITION					EXCLUDED	

TOTAL COST -					3,990	
					2	/sf

NPS - TRUMAN FARMS
Building & Site Improvements
Site - House - Garage - Poultry

Updated on 27 AUG 12
Printed on: 8/27/2012 at 5:50 PM

Alternative 03A-Site

Site GSF: **492,075**
Total Cost: **\$829,696**

Estimate By: KH
Date: 03-Jul-12
Reviewed By: CS
Date: 10-Jul-12

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
G10	SITE PREPARATION					
	General Site Prep					
G1010	Mobilization	1	LS	5,000.00	5,000	
G1010	Construction Surveying & Historic Documentation	1	LS	10,000.00	10,000	
G1010	Temporary Construction Fence	500	LF	2.50	1,250	
G1010	Traffic Control in the ROW	1	LS	2,000.00	2,000	
G1010	Erosion Control	500	LF	5.00	2,500	
G1010	Tree Protection	400	LF	2.00	800	
	Site Demolition					
G1020	Remove and Dispose of Asphalt Pavement	18,000	SF	0.98	17,560	
G1020	Remove and Dispose of Asphalt Pavement	28,400	SF	0.98	27,706	
G1020	Remove and Dispose of Concrete Curb and Gutter	1,455	LF	6.34	9,225	
G1020	Remove and Dispose of Concrete Pavement	1,930	SF	12.44	24,009	
G1020	Demolish and Remove Stone Posts	5	EA	575.00	2,875	
G1020	Demolish and Remove Yard Lights & Flagpole	4	EA	275.00	1,100	
G1020	Demolish and Remove Fence at Poultry House	120	LF	5.00	600	
G1020	Demolish and Remove Fence on Slope	670	LF	5.00	3,350	
G1020	Demolish and Remove Lightposts	4	EA	75.00	300	
G1020	Remove and Dispose of Miscellaneous Site Elements	1	LS	5,000.00	5,000	
G1020	Remove and Reset Park ID	1	EA	500.00	500	
G1020	Remove and Reset Electric Lines	1	LS	10,000.00	10,000	
G1020	Sod Stripping	18,370	SF	0.30	5,500	
G1020	Remove & Dispose of Existing Trees (ALLOWANCE)	90	EA	630.34	56,731	
SUBTOTAL SITE PREPARATION		492,075	SF	0.38	186,005	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
G20	SITE IMPROVEMENTS					
	General Site Improvements					
G2010	Earthwork- Allowance	26,700	SF	5.00	133,500	

Alternative 03A-Site

	Roads, Parking & Paths					
G2020	Aggregate Base Course- Gravel Drive	26,191	SF	2.89	75,692	
G2020	Crusher Fines Paving	1,100	SF	6.00	6,600	
G2020	Asphalt Patch (Roadway)	1	TON	973.00	973	
G2020	Concrete Paving (4" depth)	N/A			N/A	
G2020	Special Finish to Concrete Paving	N/A			N/A	
G2020	Concrete Driveway - Farm Entry	600	SF	5.53	3,318	
G2020	Pavement Marking	500	LF	2.92	1,460	
G2020	Parking/Traffic Sign	2	EA	350.00	700	
G2020	Gate	1	LS	3,000.00	3,000	
	Landscape					
G2020	Topsoil @ 3" (includes purchase, trucking, placement)	2,630	CY	12.00	31,560	
G2020	Western Wheatgrass Seeding (incl soil prep.)	294,800	SF	0.22	65,908	
G2020	Native Seeding- Grass to mimic crop (incl soil prep.)	N/A			N/A	
G2020	Native Seeding - Garden (incl soil prep.)	23,600	SF	0.55	12,980	
G2020	Native Seeding - Farmhouse yard (incl soil prep.)	N/A			N/A	
G2020	Turfgrass Seeding	25,000	SF	0.27	6,750	
G2020	Tree buffer	35,000	SF	3.13	109,410	
G2020	Vegetation Screening (tree/shrub mix)	15,000	SF	2.78	41,700	
G2020	Deciduous Trees (2-1/2"cal.)- Maple Grove	29	EA	450.00	13,050	
G2020	Evergreen Trees	9	EA	425.00	3,825	
G2020	Dirt Yard (barnyard)	16,200	SF	5.00	81,000	
G2020	Design Team Adjustment	1	LS	-2,423.00	-2,423	
SUBTOTAL SITE ELECTRICAL UTILITIES		492,075	SF	1.20	589,004	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
G90	OTHER SITE CONSTRUCTION					By Owner
	Structures					
G2010	Mark archeological remains/building outlines	260	LF	36.23	9,420	
	Miscellaneous					
G9020	Interpretive Sign	2	EA	2,000.00	4,000	
G9020	Restore Fence	760	LF	21.66	16,462	
G9020	Restore Garden	23,650	SF	0.95	22,468	
G9020	Restore Water Pump	1	EA	1,339.00	1,339	

NPS - TRUMAN FARMS
 Building & Site Improvements
 Site - House - Garage - Poultry

Updated on 27 AUG 12
 Printed on: 8/27/2012 at 5:50 PM

Alternative 03A-Site

G9020	Restore Waysides	1	AL	1,000.00	1,000	Stack rocks? Edging?
SUBTOTAL OTHER SITE CONSTRUCTION		492,075	SF	0.11	54,688	

TOTAL COST -		492,075	SF	1.69	829,696	
					1.69	/SF

HSTR VA Report 09/07/12
Summary for Class C Cost Estimate
Rev 07 Costing 08/27/2012

The following summary chart is included to help the reviewer see the breakout of costs and understand the totals vs. the ARC Class C Estimate in the following pages

	Alt3b	Notes / Comparison
Common to All		
Site / Utilities	\$ 191,337	
House	\$ 349,713	
Garage	\$ 81,092	
Poultry	\$ 30,009	
VC	\$ 1,400,115	
Subtotal	\$ 2,052,266	From ARC Cost estimate for "Common to All"
VC Geothermal	\$ 50,000	Placeholder added across the board based on VA Meeting
Subtotal	\$ 2,102,266	
Alternative Pricing		
Site	\$ 1,582,199	
Undergrounding Elec	\$ -	
Buildings	\$ 183,374	
Exhibits		
Subtotal	\$ 1,765,573	
Total Initial Cost	\$ 3,867,839	
Life Cycle Cost	\$ 191,423	As developed and presented in the VA Meeting
Grand Total	\$ 4,059,262	These are the numbers used in the VA graph.

NPS - TRUMAN FARMS
Building & Site Improvements
Site - House - Garage - Poultry

Updated on 27 AUG 12
Printed on: 8/27/2012 at 5:50 PM

Alternative 03B-Summary

Location	Description		Total	Total w/Burdens
Bldgs	Minor Modifications to Porch 106 / Rebuild East Wing		99,708	183,374
Site	Site Improvements		860,303	1,582,199
	Subtotal Direct Construction Costs		960,011	1,765,573
	Project Remoteness Factor	N/A	N/A	
	Federal Wage Rate Factor	w/ Unit Costs	N/A	
	State/Local Sales & Use Taxes	N/A	N/A	
	Owner's Design & Preconstruction Contingency	20.00%	192,002	
	Owner's Construction Contingency (after NTP)	5.00%	48,001	
	Total Direct Construction Costs		1,200,014	
	Standard General Conditions (GC's Onsite Overhead)	13.00%	156,002	
	Subtotal NET Construction Cost		1,356,015	
	GC's Profit	10.00%	135,602	
	GC's Offsite Overhead	w/Above	w/ Above	
	Construction Cost w/o Bonds & Escalation		1,491,617	
	Performance & Payment Bond	1.50%	22,374	
	Building & Grading Permits	2.50%	37,290	
	Builder's Risk Insurance	0.75%	11,187	
	Escalation Period in Months	37	173,272	
	Material Testing	2.0%	29,832	
	Total Estimated Cost of Construction		1,765,573	

NPS - TRUMAN FARMS
Building & Site Improvements
Site - House - Garage - Poultry

Updated on 27 AUG 12
Printed on: 8/27/2012 at 5:50 PM

Alt 3B - Bldgs

Estimate By: Kyle Hoiland
Date: 05-Jul-12
Reviewed By: Chris Squadra
Date: 10-Jul-12

Building GSF **2,278**

Total Cost: **\$99,708**

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
A10	FOUNDATIONS					
	Rebuild East Wing to ca. 1957					
A1020	Excavate for Foundation	1	LS	2,500.00	2,500	
A1020	Foundation	20	CY	458.85	9,177	
SUBTOTAL FOUNDATIONS					11,677	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
A20	BASEMENT CONSTRUCTION					
SUBTOTAL BASEMENT CONSTRUCTION					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
B10	SUPERSTRUCTURE					
	Minor Modifications to improve ABA access to porch 106	1	LS	1,495.00	1,495	New ADA thresholds & hardware
B2010	Framing Labor @ New East Wing	640	SF	18.00	11,520	
B2010	Framing Materials @ New East Wing	640	SF	14.70	9,408	
B2010	Trusses	640	SF	4.30	2,752	
B2010	Roof Sheathing	384	SF	1.20	461	
B2010	Wall Sheathing	900	SF	1.10	990	
B2010	Brick Chimney	120	SF	24.00	2,880	
B2010	Wood Stove Venting	20	LF	48.00	960	
B2010	Windows	6	EA	550.62	3,304	
SUBTOTAL SUPERSTRUCTURE					33,770	

Uniformat II	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
B20	EXTERIOR CLOSURE					
	R19 Batt Insulation	900	SF	1.60	1,440	
B2010	R38 Batt Insulation	640	SF	1.85	1,184	
B2010	Vapor Barrier	900	SF	0.20	180	
B2010	8" Beveled Cedar Siding	900	SF	7.96	7,164	
B2010	Exterior Paint	900	SF	0.80	720	
SUBTOTAL EXTERIOR CLOSURE					10,688	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
B30	ROOFING					
	Rebuild east wing to reflect ca. 1957 appearance (see sequence pdf attached) - Asphalt Shingle Roofing	384	SF	5.80	2,227	
B3010	Flashings	1	LS	250.00	250	
B3010	Tie-in to Existing Roof	1	LS	675.00	675	
SUBTOTAL ROOFING					3,152	

Alt 3B - Bldgs

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
C10	INTERIOR CONSTRUCTION					
C1010	5/8" Gyp Bd w/ Level 4 finish	1792	SF	1.10	1,971	
C1010	Interior wood doors	3	EA	1,987.17	5,962	
C1010	Baseboard Trim	144	EA	4.30	619	
C1010	Door & Window Trim	264	EA	7.75	2,046	
C1010	Protection of Finishes	640	SF	1.50	960	
SUBTOTAL INTERIOR CONSTRUCTION					11,558	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
C20	STAIRCASES					
C2010	Stair Framing	Excluded			Excluded	
SUBTOTAL STAIRCASES					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
C30	INTERIOR FINISHES					
C1010	Interior wall & ceiling paint	1792	SF	0.60	1,075	
C1010	Wood Flooring	640	SF	11.45	7,328	
C1010	Wall Coverings	1000	SF	3.65	3,650	
SUBTOTAL INTERIOR FINISHES					12,053	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
D10	CONVEYING SYSTEMS					
SUBTOTAL CONVEYING SYSTEMS					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
D20	PLUMBING					
D2010	Plumbing @ Kitchen				Excluded	Deleted 8/22/12
D2010	Install Gas Service & Piping for Addition (Allowance)	1	LS	1,500.00	1,500	
SUBTOTAL PLUMBING					1,500	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
D30	HVAC					
D3010	Heating System	640	SF	9.50	6,080	Assumes new system for additional floor area Includes ducting, controls, furnace
D3010	Air Conditioning	Excluded			Excluded	
SUBTOTAL HVAC					6,080	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
D50	ELECTRICAL					
D5010	Electrical Infrastructure	640	SF	5.50	3,520	
D5010	Lighting	640	SF	2.50	1,600	
D5010	Fire alarm upgrades	2,278	SF	0.88	2,005	
SUBTOTAL ELECTRICAL					7,125	

Alt 3B - Bldgs

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
E10	EQUIPMENT					
SUBTOTAL EQUIPMENT					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
E20	FURNISHINGS					
E2010	Cabinets & Bookcases	Excluded			Excluded	
SUBTOTAL FURNISHINGS					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
F10	SPECIAL CONSTRUCTION					Deleted 8/22/12
					Excluded	
SUBTOTAL SPECIAL CONSTRUCTION					EXCLUDED	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
F20	SELECTIVE BUILDING DEMOLITION					
F2010	Move items to on-site storage & protect	16	HRS	25.00	400	
F2010	Demo portions of east wing ca. 1984 work	196	SF	5.30	1,039	
F2010	Demo foundation of east wing & dispose	196	SF	3.40	666	
SUBTOTAL SELECTIVE BUILDING DEMOLITION					2,105	

TOTAL COST -					99,708	
					44	/sf

NPS - TRUMAN FARMS
Building & Site Improvements
Site - House - Garage - Poultry

Updated on 15 AUG 12
Printed on: 8/27/2012 at 5:50 PM

Alternative 03B-Site

Site GSF: **492,075**
Total Cost: **\$860,303**

Estimate By: KH
Date: 03-Jul-12
Reviewed By: CS
Date: 10-Jul-12

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
G10	SITE PREPARATION					
	General Site Prep					
G1010	Mobilization	1	LS	5,000.00	5,000	
G1010	Construction Surveying & Historic Documentation	1	LS	10,000.00	10,000	
G1010	Temporary Construction Fence	500	LF	2.50	1,250	
G1010	Traffic Control in the ROW	1	LS	2,000.00	2,000	
G1010	Erosion Control	500	LF	5.00	2,500	
G1010	Tree Protection	500	LF	2.00	1,000	
	Site Demolition					
G1020	Remove and Dispose of Asphalt Pavement	18,000	SF	0.98	17,560	
G1020	Remove and Dispose of Concrete Curb and Gutter	1,455	LF	6.34	9,225	
G1020	Remove and Dispose of Concrete Pavement	1,380	SF	12.44	17,167	
G1020	Remove and Dispose of Miscellaneous Site Elements	1	LS	5,000.00	5,000	
G1020	Remove and Reset Park ID	1	EA	500.00	500	
G1020	Remove Gate @ 1950s Roadway	1	EA	507.80	508	
G1020	Install New Gate	1	EA	1,200.00	1,200	
G1020	Sod Stripping	29,500	SF	0.30	8,832	
G1020	Remove & Dispose of Existing Trees (ALLOWANCE)	85	EA	630.34	53,579	
SUBTOTAL SITE PREPARATION		492,075	SF	0.27	135,320	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
G20	SITE IMPROVEMENTS					
	General Site Improvements					
G2010	Earthwork- Allowance	25,000	SF	5.00	125,000	
	Roads, Parking & Paths					
G2020	Aggregate Base Course- Gravel Drive	14,250	SF	2.89	41,183	
G2020	Crusher Fines Paving	8,000	SF	6.00	48,000	
G2020	Asphalt Paving Mobilization	1	LS	2,500.00	2,500	
G2020	Asphalt Patch (Roadway)	1	TON	973.00	973	

NPS - TRUMAN FARMS
Building & Site Improvements
Site - House - Garage - Poultry

Updated on 15 AUG 12
Printed on: 8/27/2012 at 5:50 PM

Alternative 03B-Site

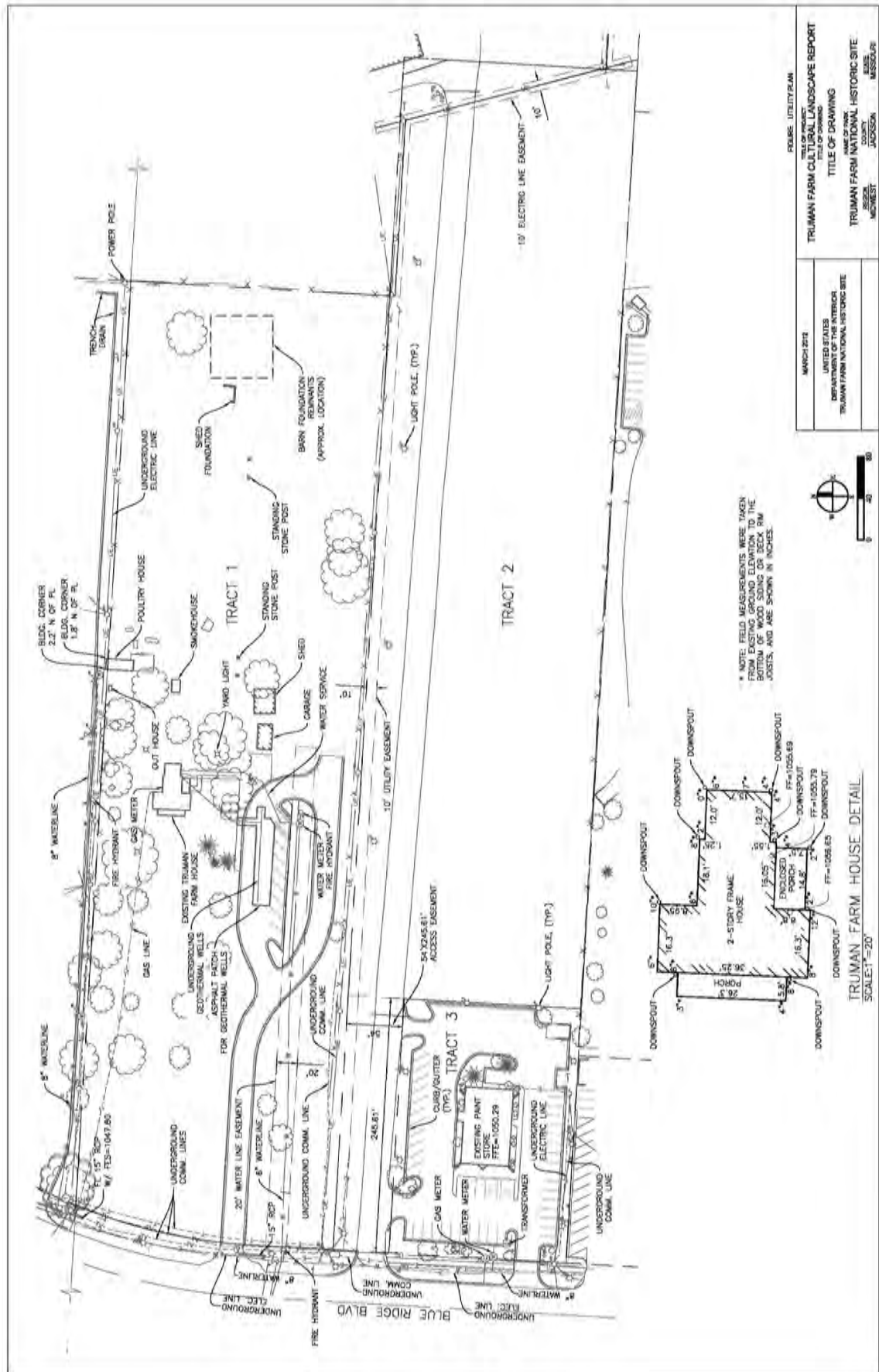
Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
G2020	Asphalt Paving	23,800	SF	2.89	68,782	1 tree per 30 sf
G2020	Concrete Paving (6" depth)	1,120	SF	8.53	9,554	
G2020	Special Finish to Concrete Paving	1,120	SF	3.00	3,360	
G2020	Pavement Marking	520	LF	2.92	1,518	
G2020	Parking/Traffic Sign	2	EA	350.00	700	
G2020	Gate	1	LS	3,000.00	3,000	
	Landscape					
G2020	Topsoil @ 3" (includes purchase, trucking, placement)	2,630	CY	12.00	31,560	
G2020	Western Wheatgrass Seeding (incl soil prep.)	193,700	SF	0.22	43,306	
G2020	Native Seeding- Grass to mimic crop (incl soil prep.)	N/A			N/A	
G2020	Native Seeding - Garden (incl soil prep.)	23,700	SF	0.55	13,035	
G2020	Native Seeding - Farmhouse yard (incl soil prep.)	N/A			N/A	
G2020	Turfgrass Seeding	88,000	SF	0.27	23,761	
G2020	Tree buffer	36,500	SF	3.13	114,099	
G2020	Vegetation Screening (tree/shrub mix)	15,000	SF	2.78	41,700	
G2020	Deciduous Trees (2-1/2"cal.)- Maple Grove	28	EA	450.00	12,600	
G2020	Dirt Yard (barnyard)	16,230	SF	5.00	81,150	
G2020	Design Team Adjustment	1	LS	3,319.00	3,319	
SUBTOTAL SITE ELECTRICAL UTILITIES		492,075	SF	1.36	669,099	

Uniformat II WBS Code	Description	Quantity	Unit	Cost/Unit	Total Cost	Remarks
G90	OTHER SITE CONSTRUCTION					
	Structures					
G2010	Mark archeological remains/building outlines	550	LF	36.23	19,927	
	Miscellaneous					
G9020	Fence Restoration (includes perimeter)	1,003	LF	21.66	21,725	Sanding & Paint
G9020	Rose Arbor Restoration	2	EA	250.00	500	Sanding & Paint
G9020	Restore Lightposts - Cosmetic	4	EA	1,500.00	6,000	Sanding & Paint; Repair
G9020	Restore Lightposts - Electrical	32	HRS	53.99	1,728	
G9020	Interpretive Sign	3	EA	2,000.00	6,000	
G9020	Design Team Adjustment	1	LS	5.00	5	
SUBTOTAL OTHER SITE CONSTRUCTION		492,075	SF	0.11	55,884	

TOTAL COST -	492,075	SF	1.75	860,303	
				1.75	/SF

APPENDIX G

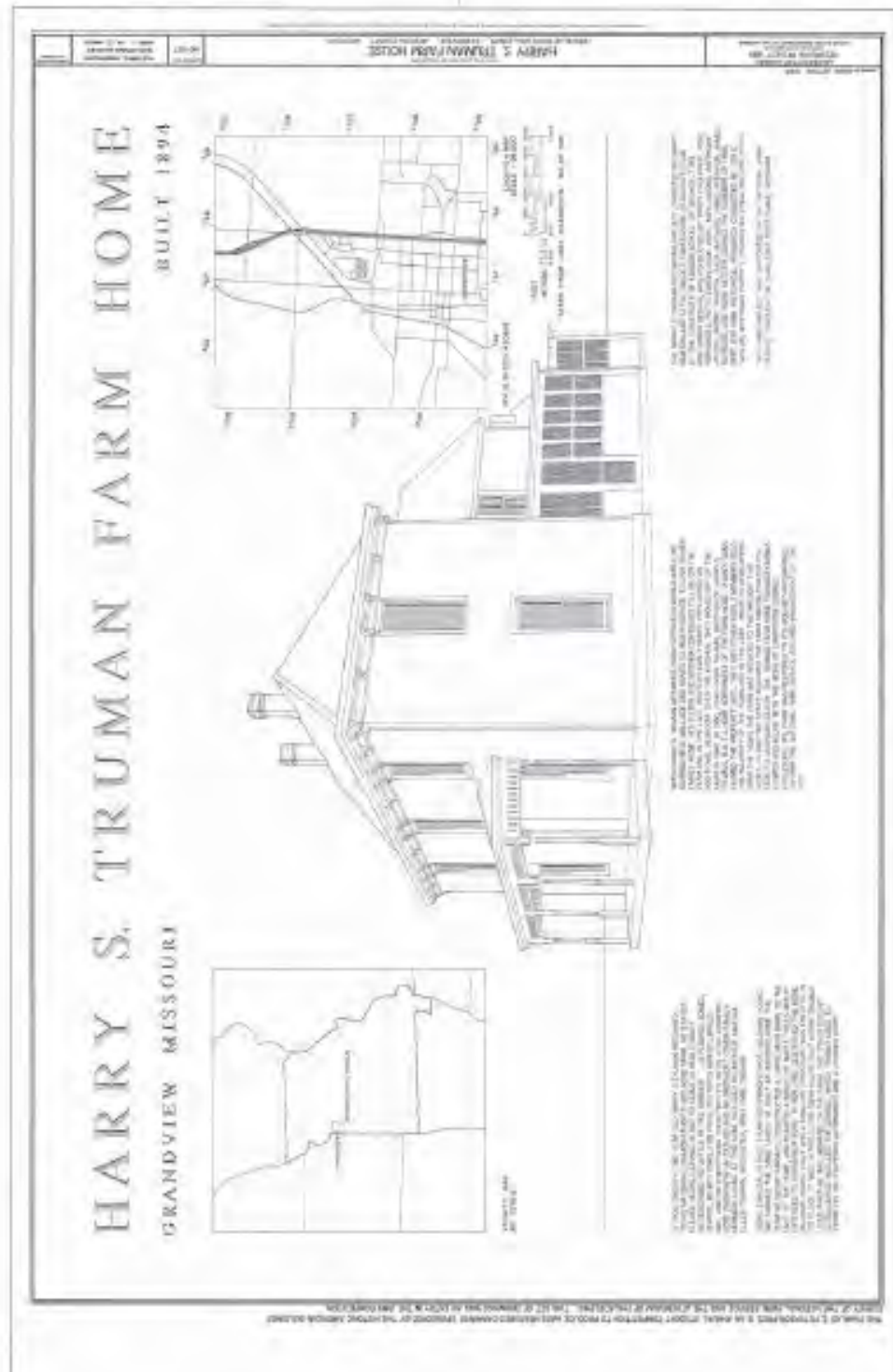
Site Utility Plan



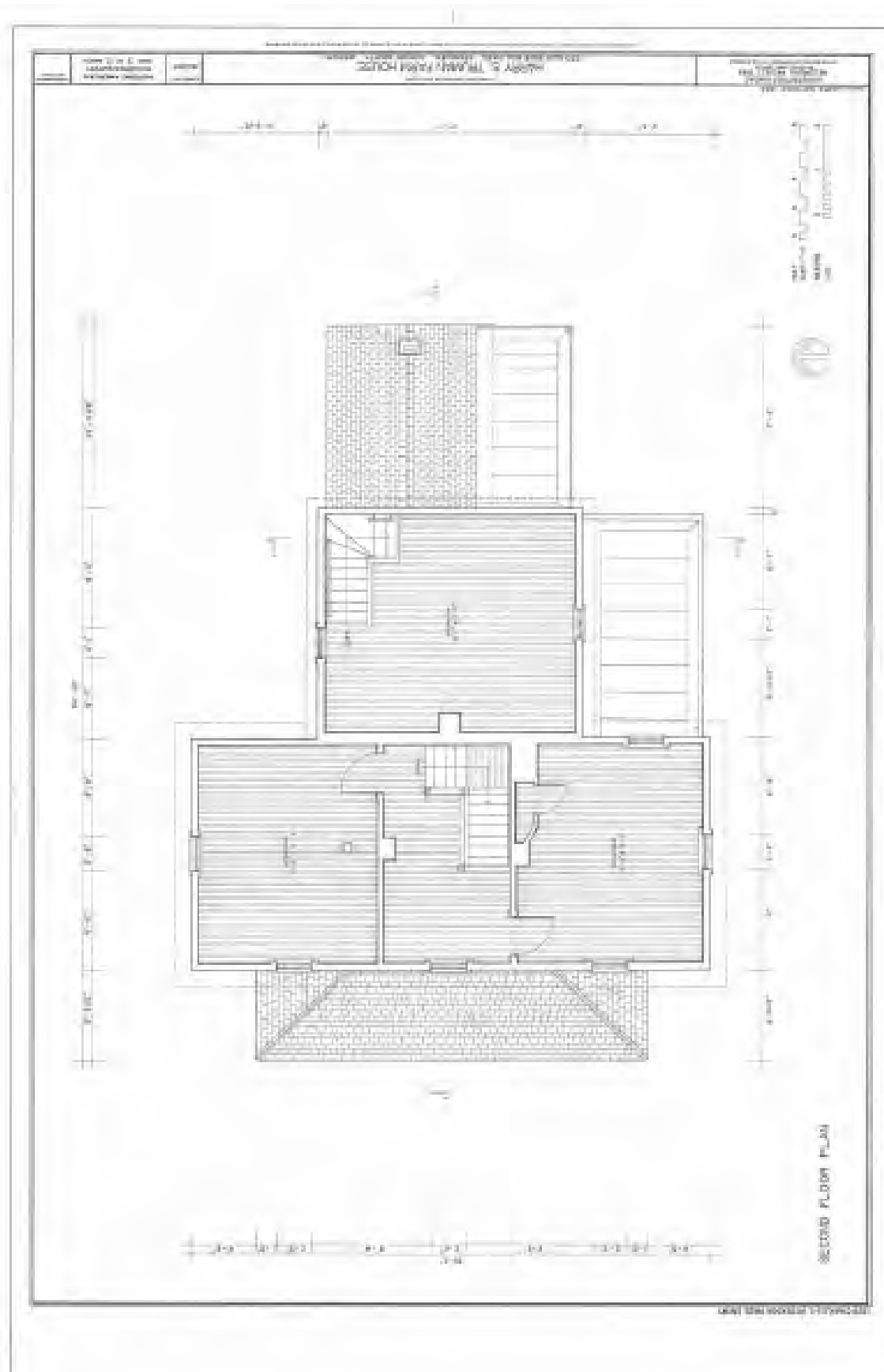
APPENDIX H

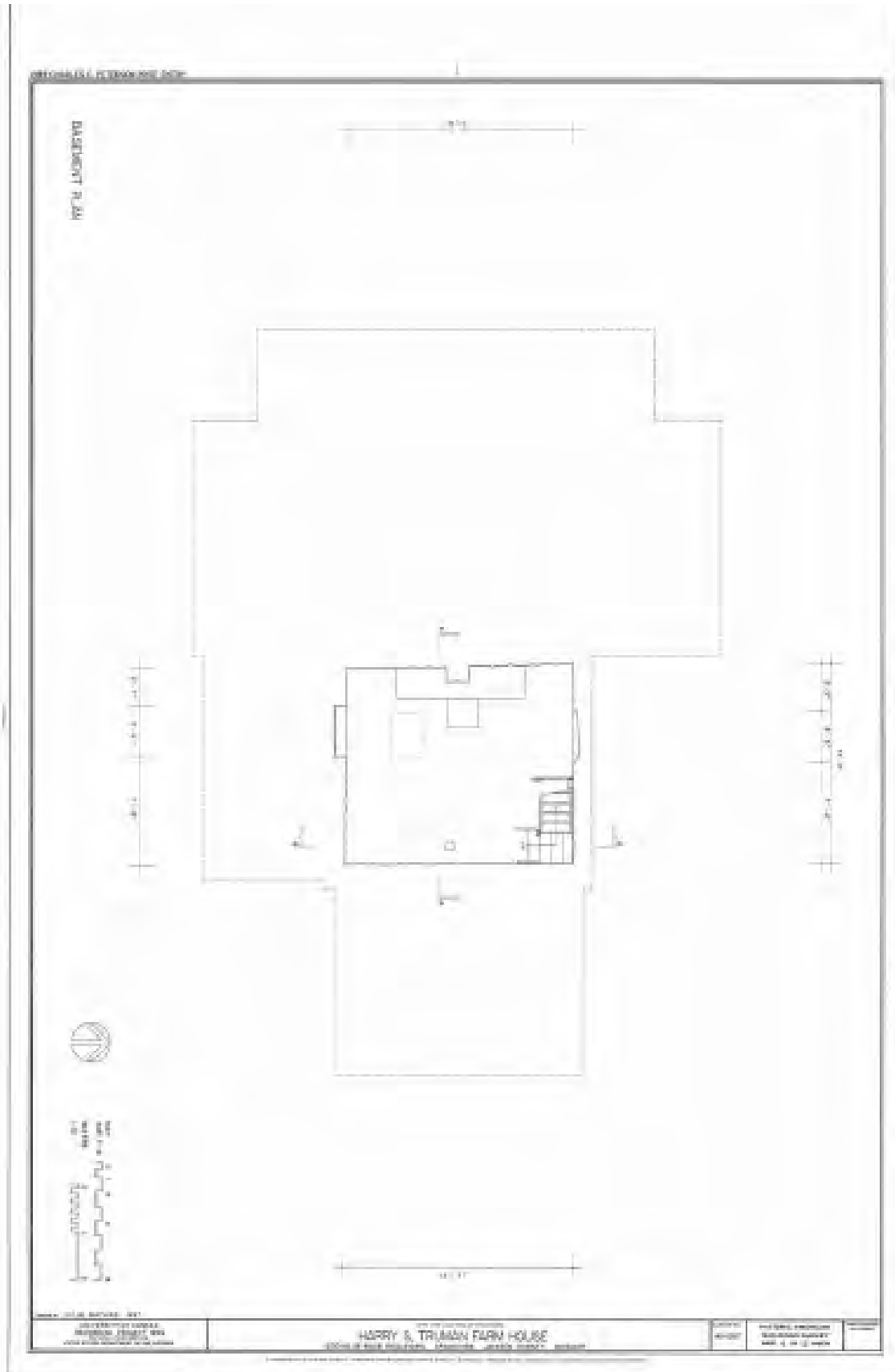
1998 Farm Home HABS Drawings

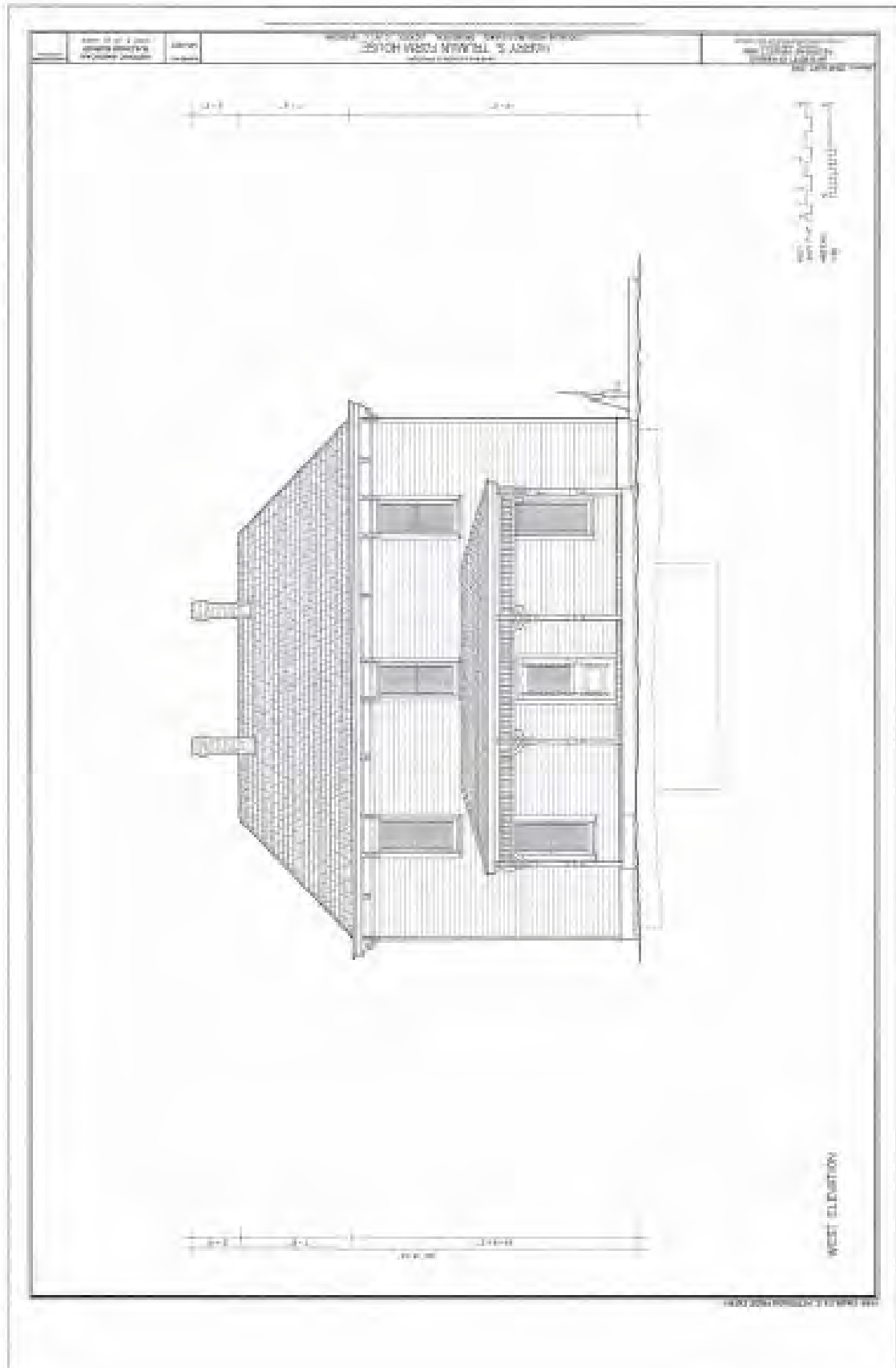
Reference number 492/117554, in file at the DSC

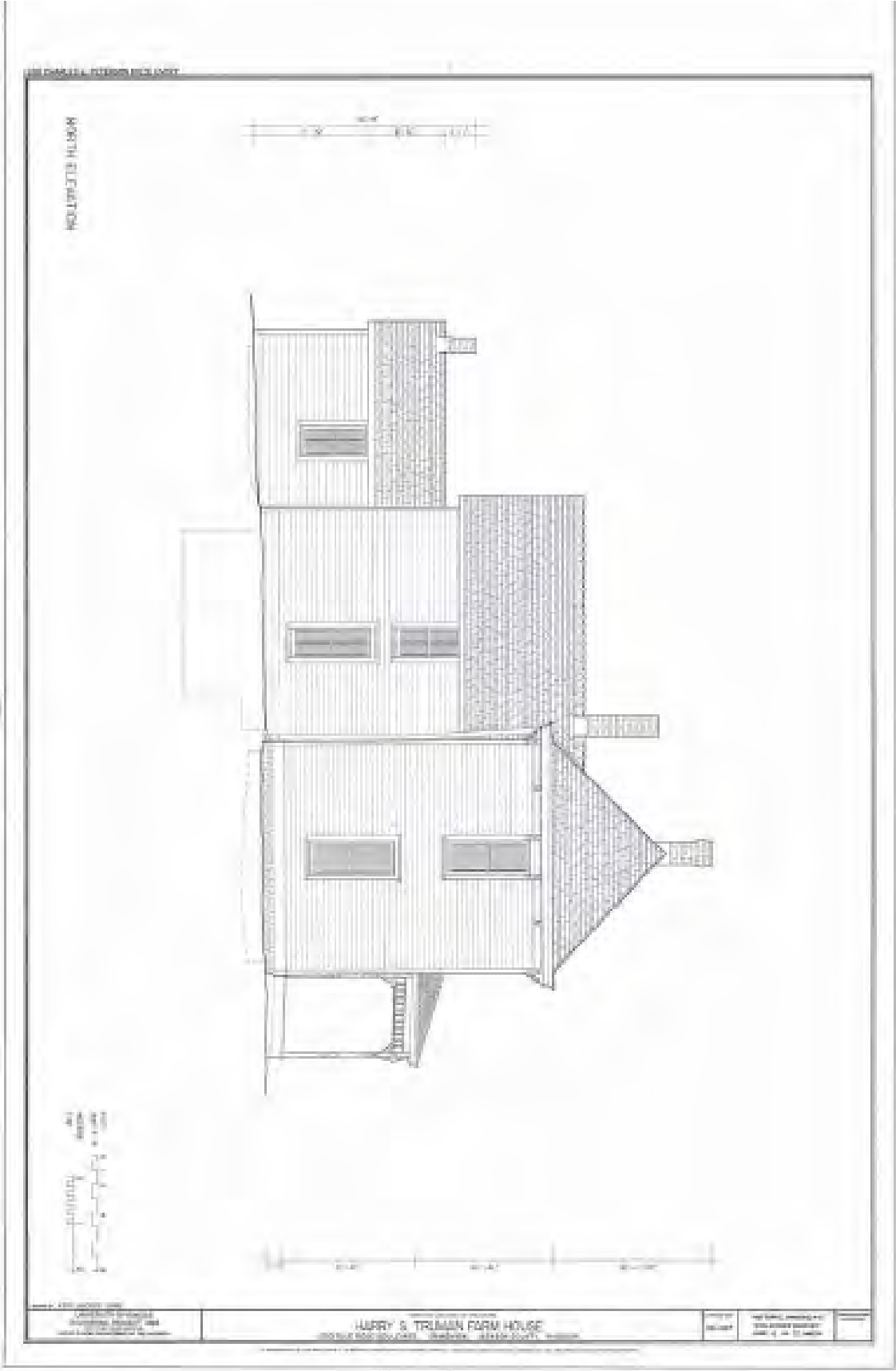


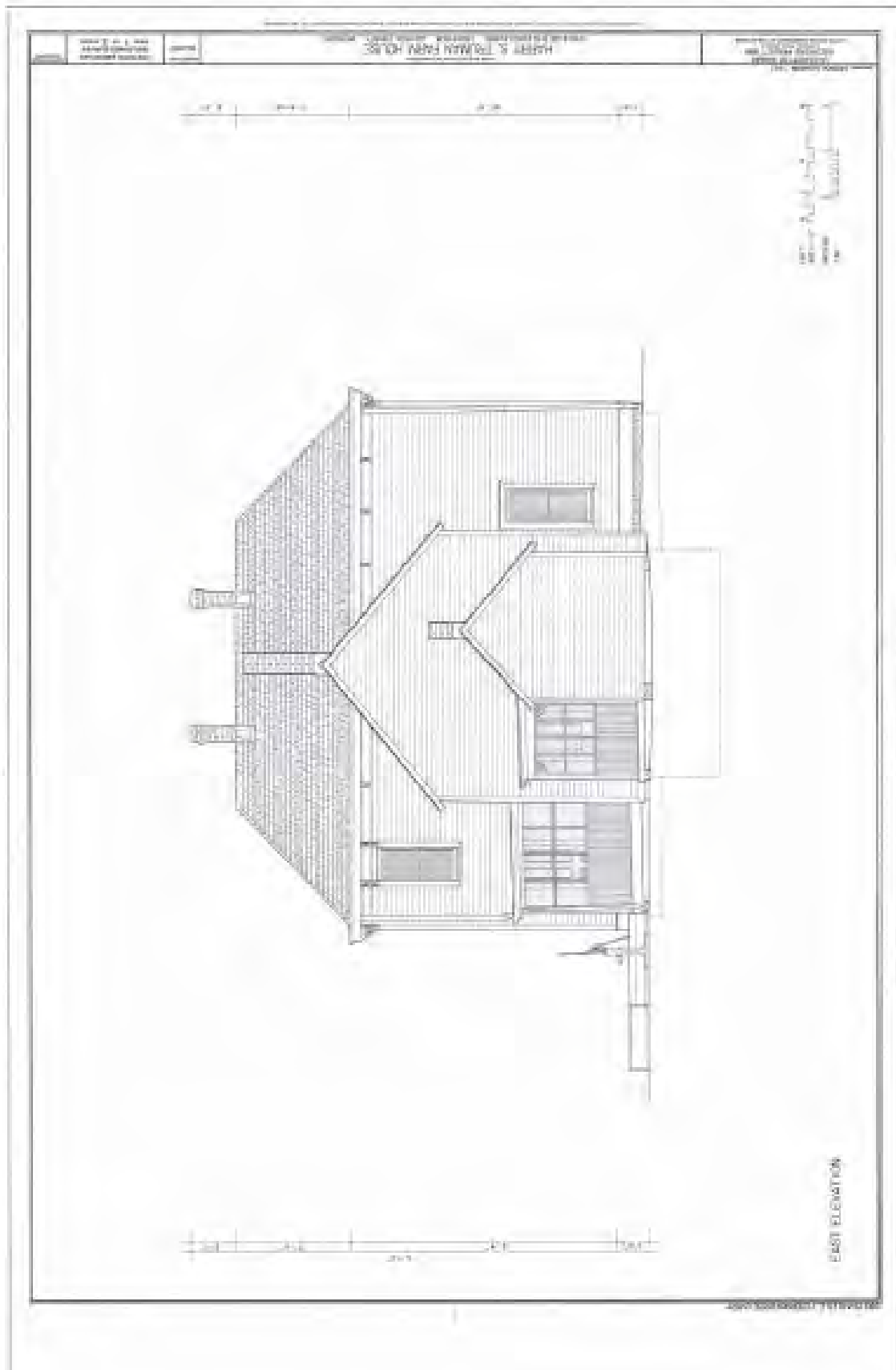


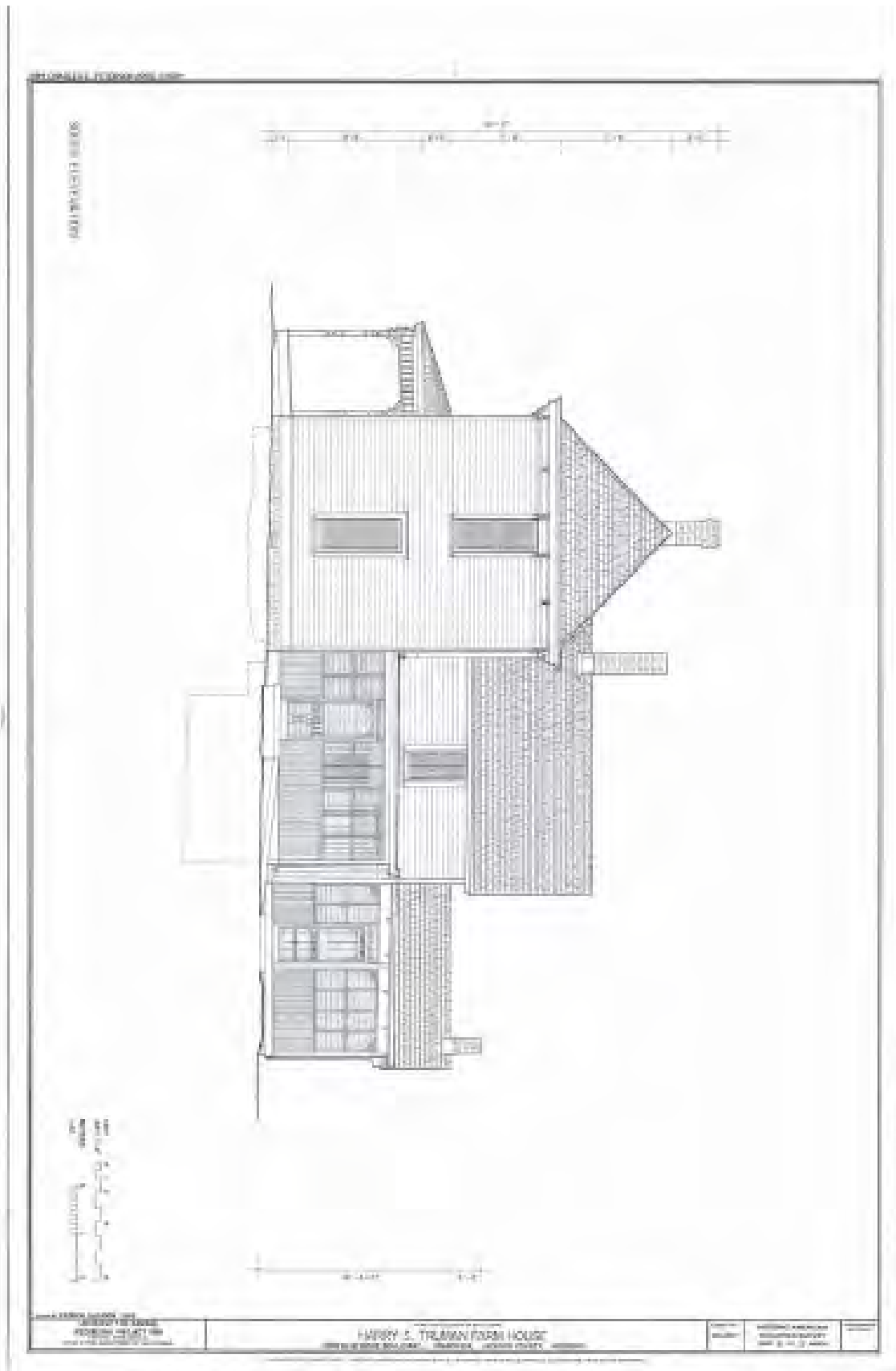


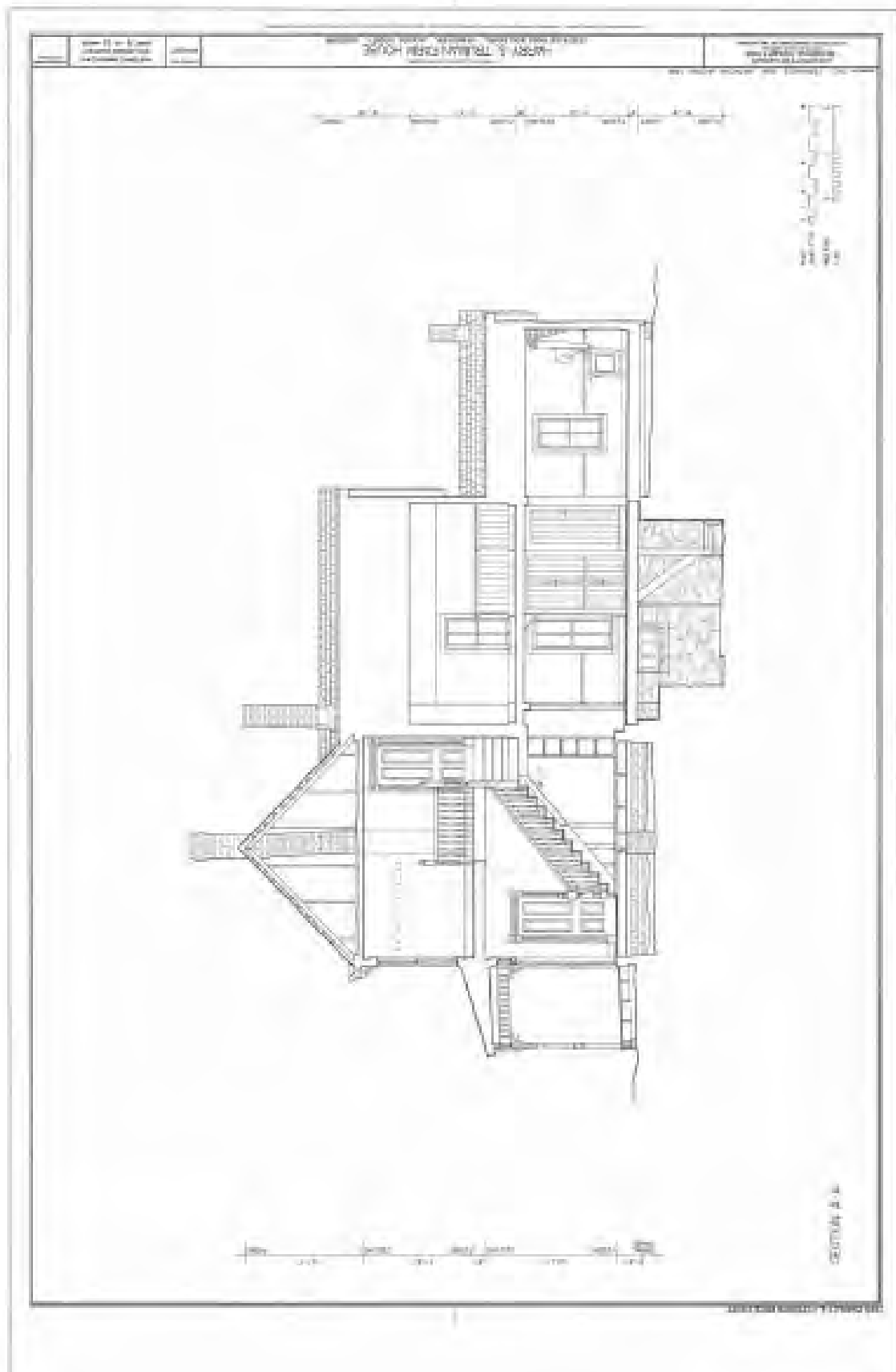


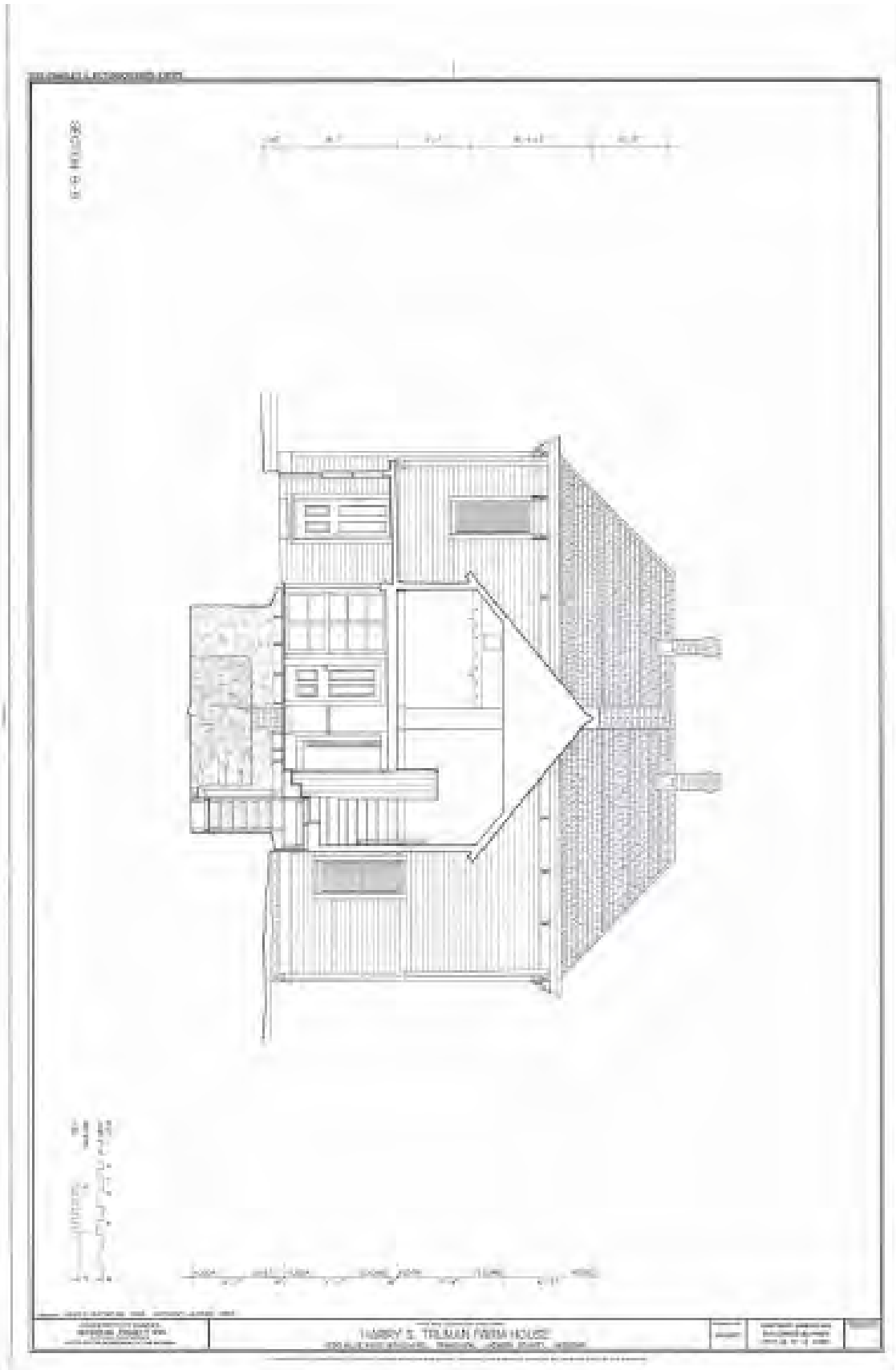


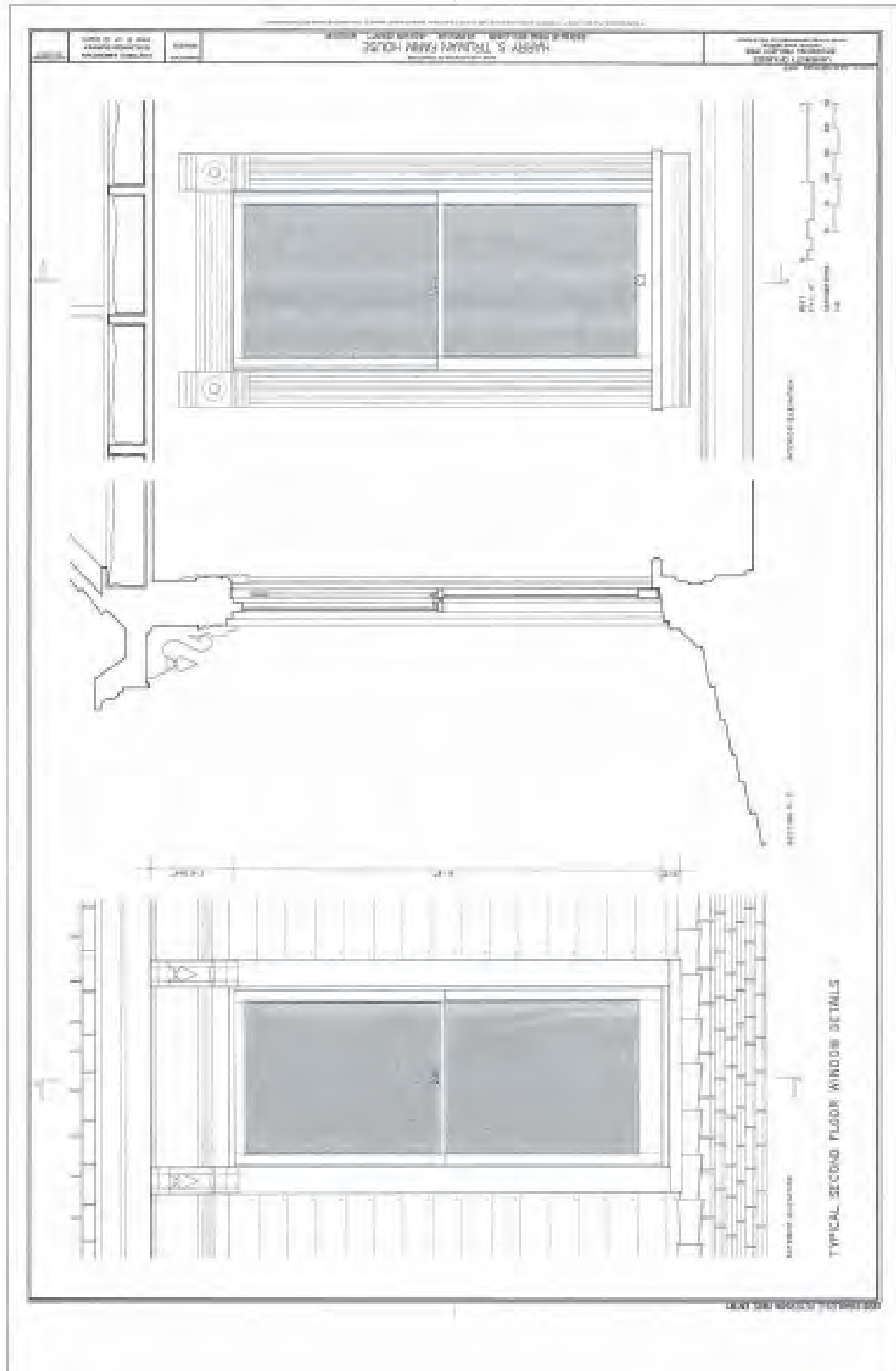


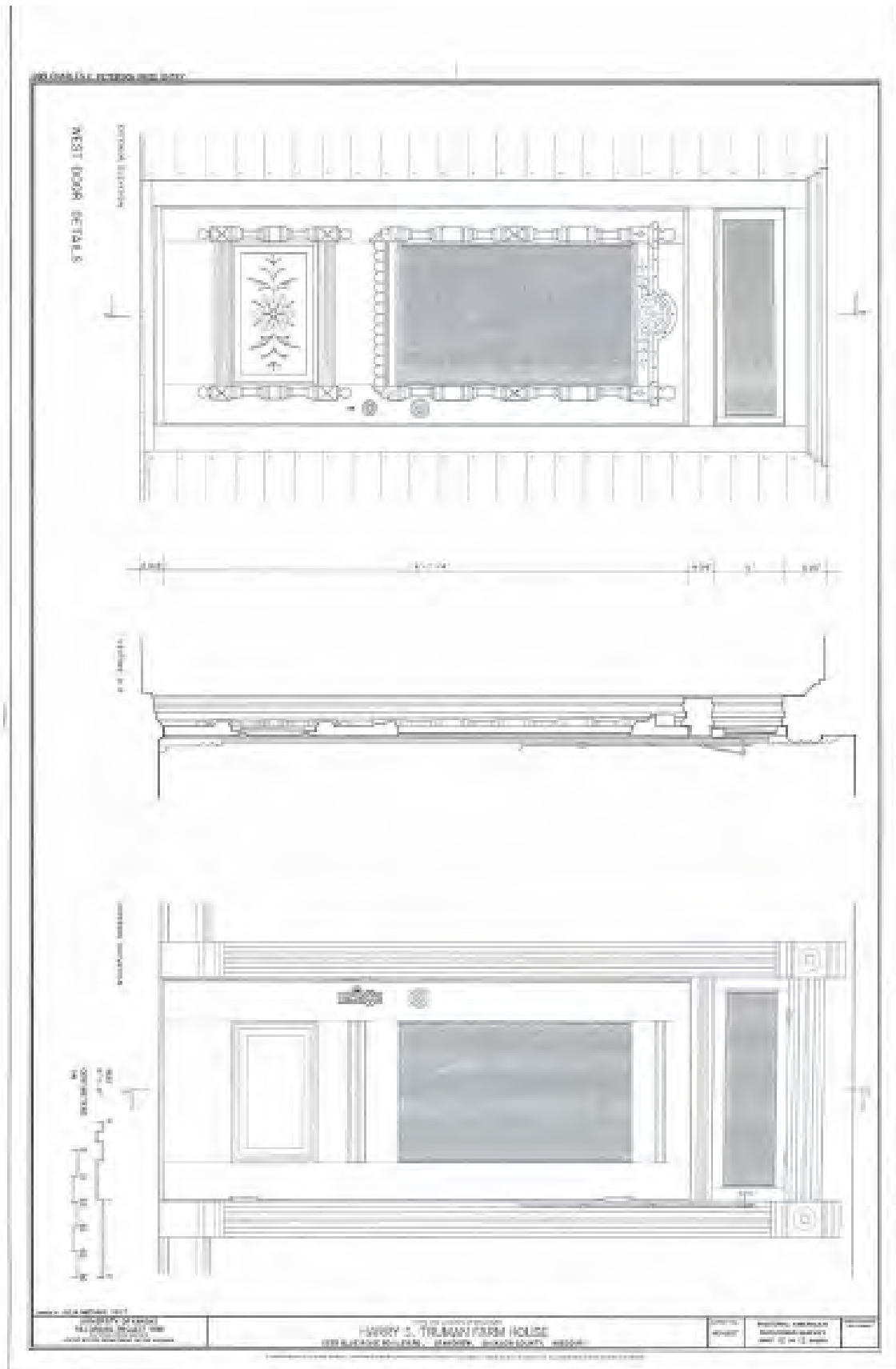






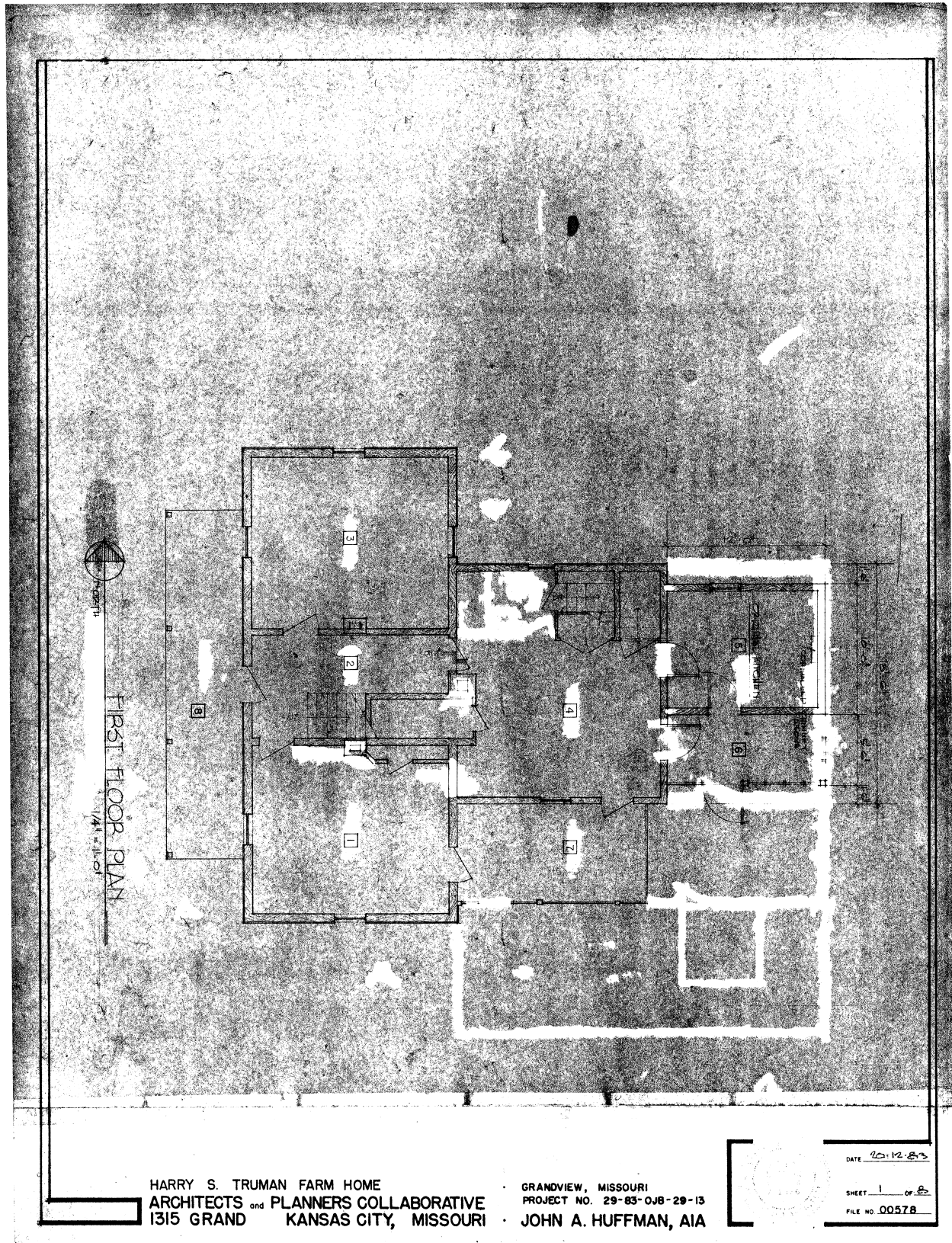


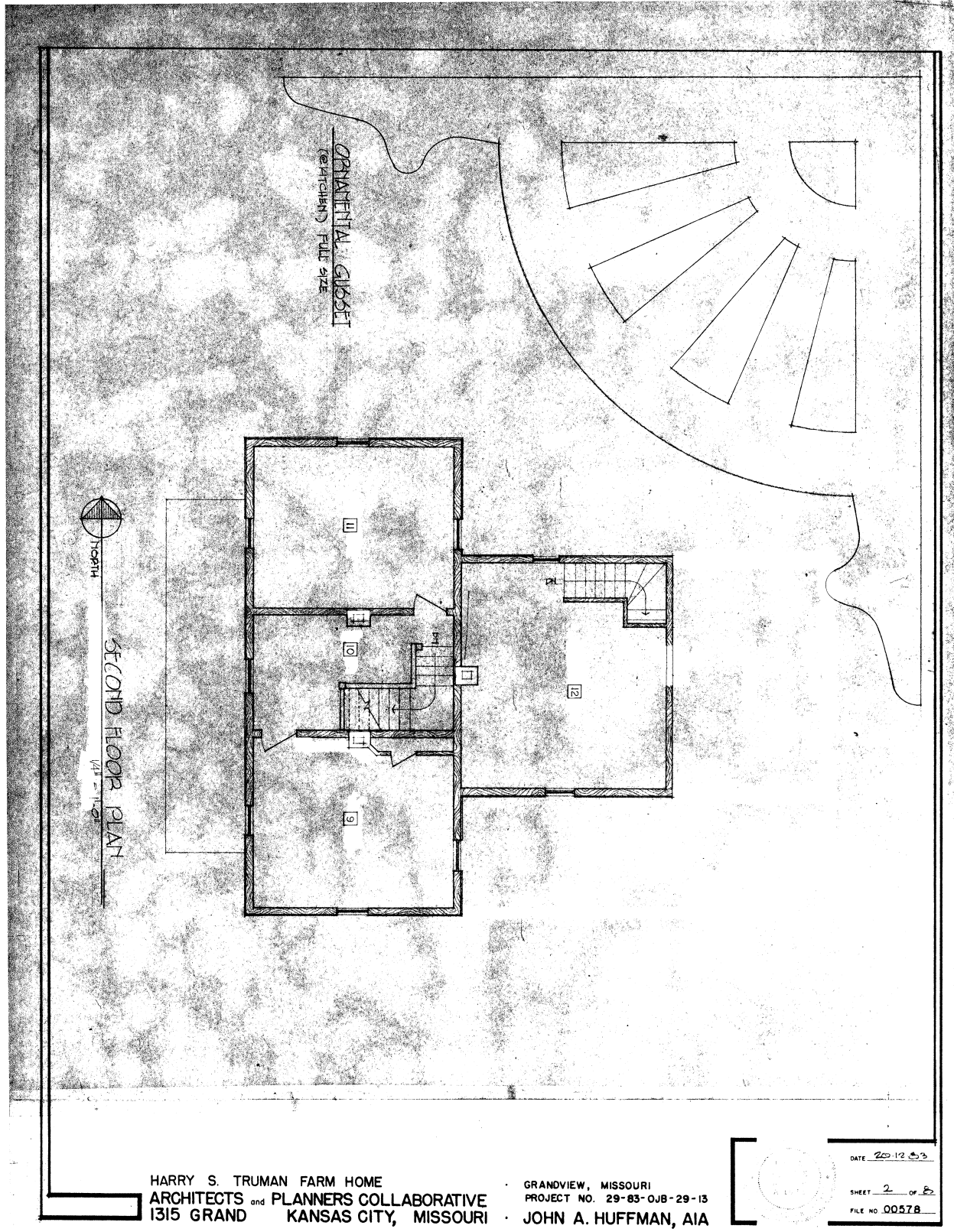


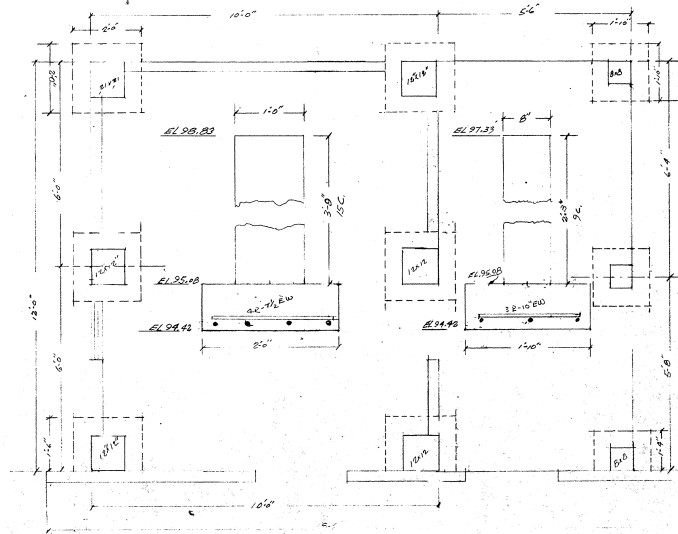


APPENDIX I

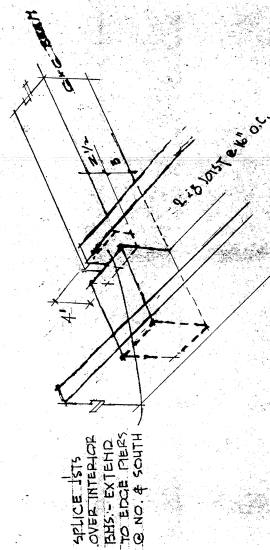
1983 John A. Huffman Drawings



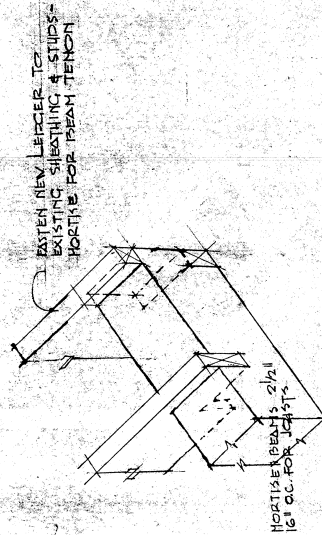




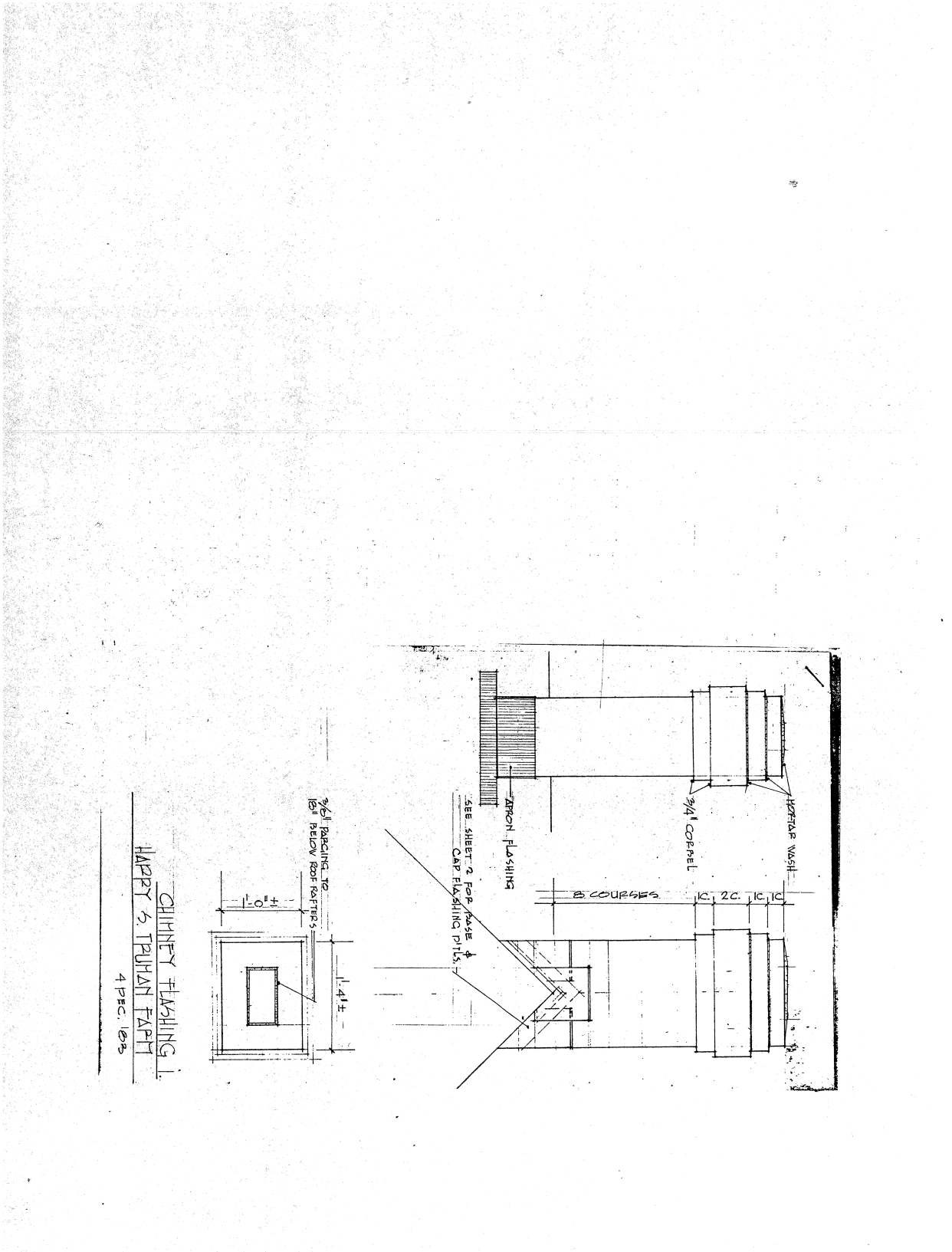
KITCHEN FOUNDATION
 HARRY S. TRUMAN FARM HOME
 20 DEC. 1983

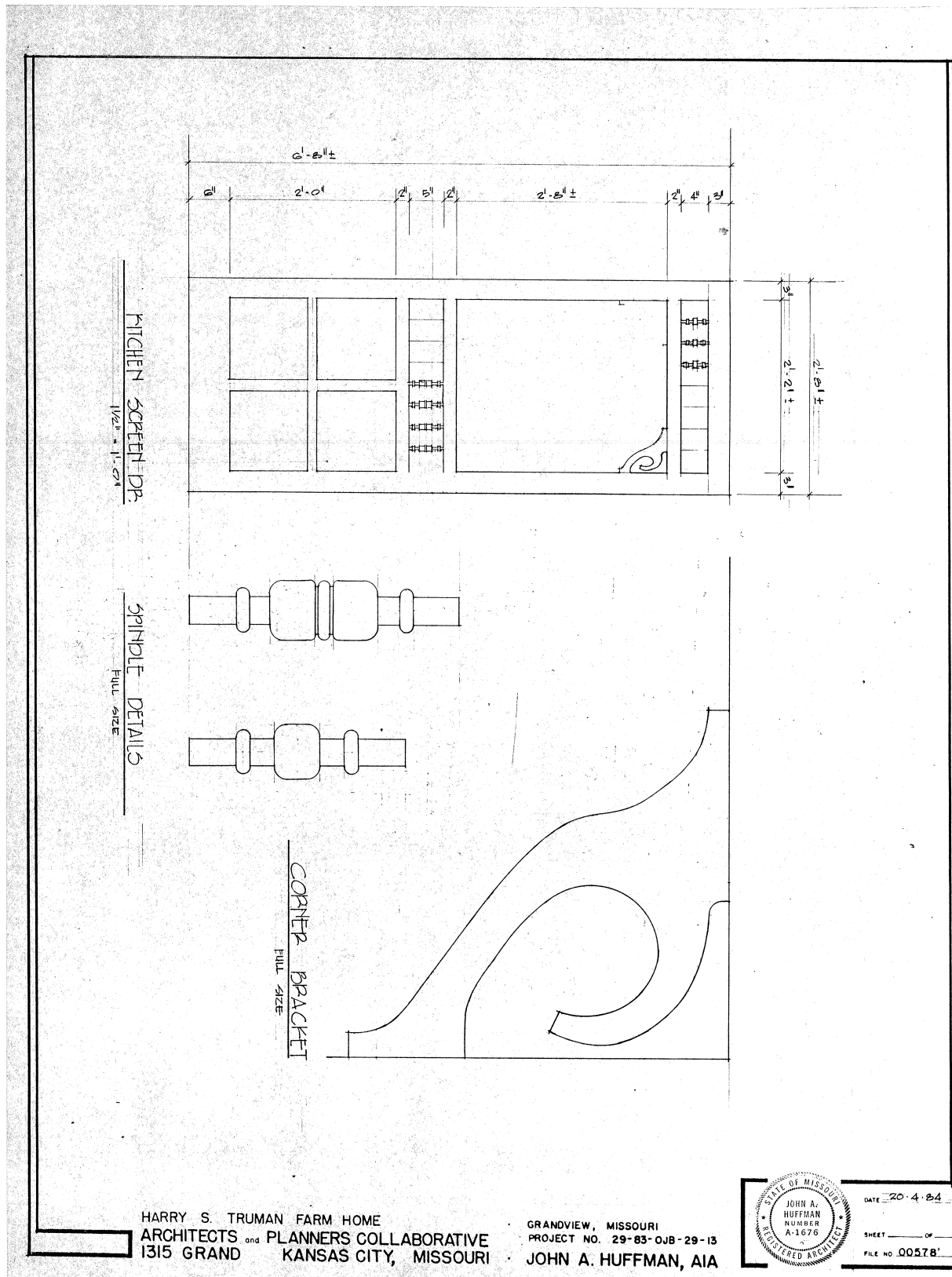


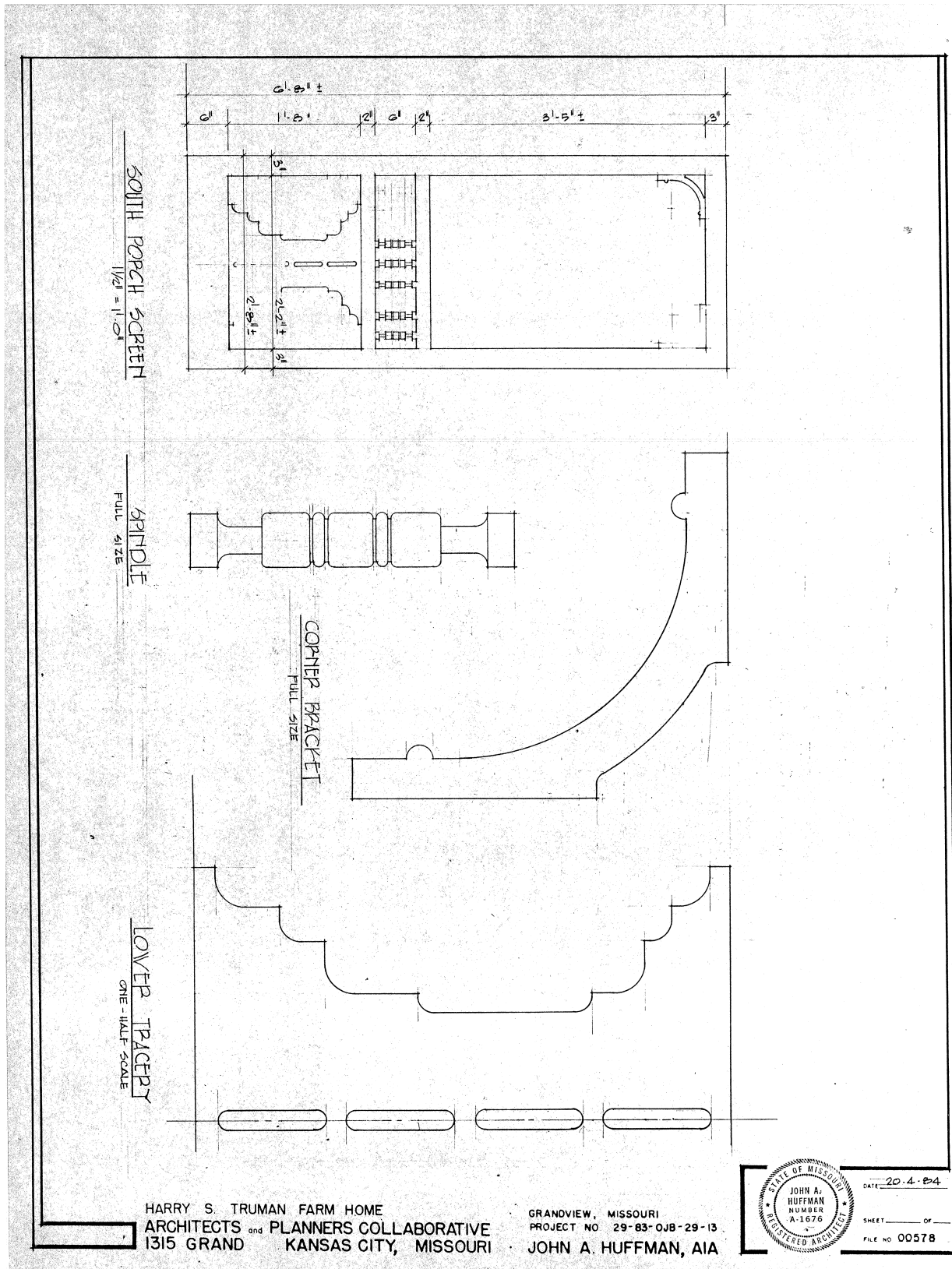
DETAIL @ INTERIOR PIER
 N.T.S.

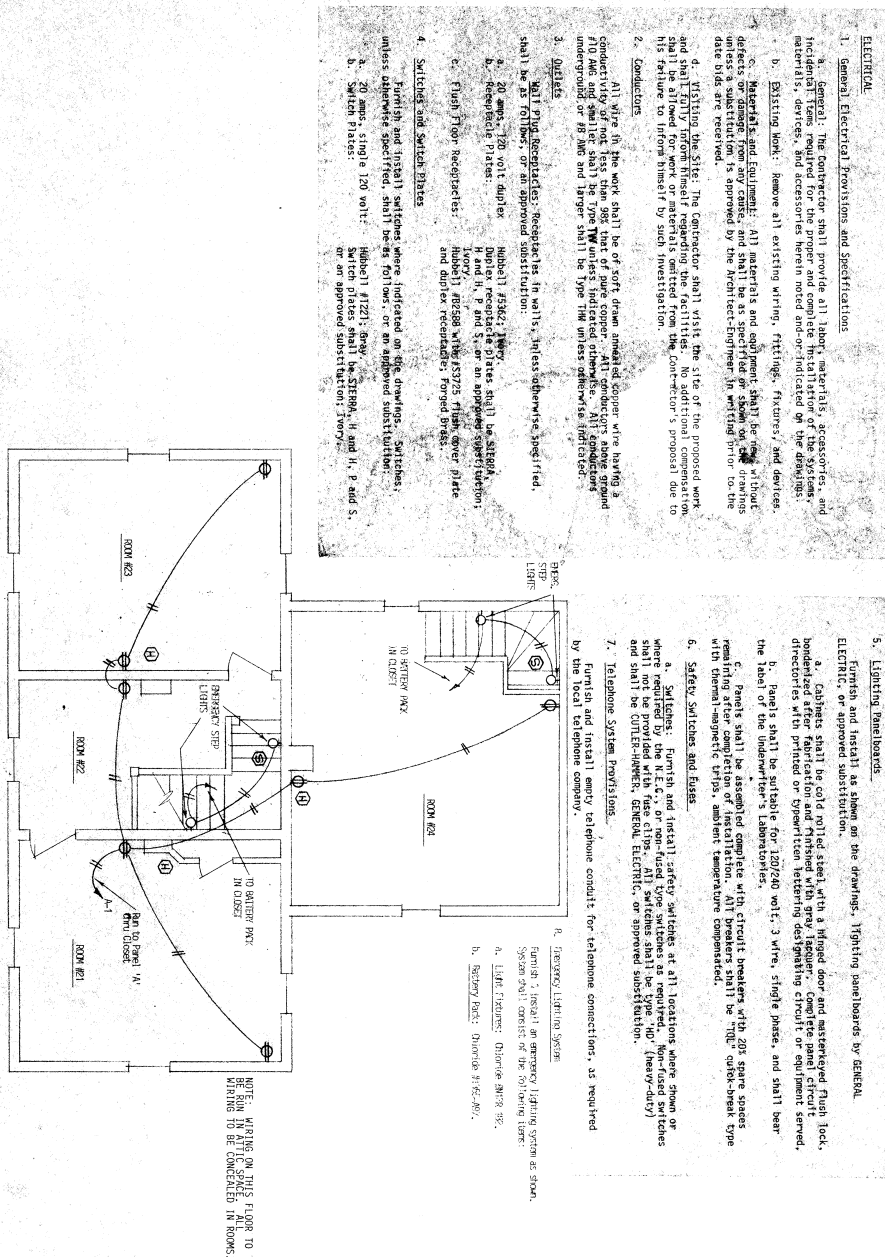


DETAIL @ LEDGER BEAM
 HARRY S. TRUMAN FARM HOME
 REVISED AS BUILT: 16 JAN. '84
 9 DEC. 1983







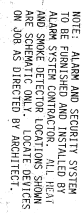


HARRY S. TRUMAN FARM HOME
ARCHITECTS and PLANNERS COLLABORATIVE
1315 GRAND KANSAS CITY, MISSOURI

- GRANDVIEW, MISSOURI
PROJECT NO. 29-83-OJB-29-13
- JOHN A. HUFFMAN, AIA



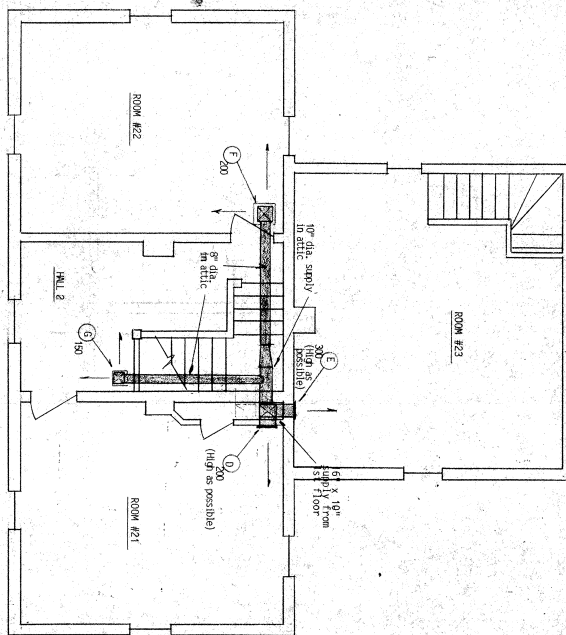
DATE 20-1-84
SHEET 5 OF 8
FILE NO. 00578



FILE NO. 00578

SECOND FLOOR PLAN - MECHANICAL

SCALE 1/4" = 1' - 0"



MECHANICAL SPECIFICATIONS

1. Cooperation with the Other Trades
 - a. Contractor shall familiarize himself with any and all conditions related to other divisions which might affect the cost of his own work and to have made proper allowance for the same in his proposal.
 - b. Contractor shall personally visit the site and determine to what extent geographical and geological and existing building conditions may affect the cost of the work, and he shall make proper and necessary allowance to cover any expenditure made necessary to his own work.
 - c. Contractor shall cooperate with all other Contractors doing work on this project in proper sequence of the work and shall be a pleasing and harmonious finished appearance. Any change necessary to accomplish this shall be made by this Contractor.
2. Codes, Permits and Inspections
 - a. Contractor shall comply with all applicable laws and ordinances or rulings of governing bodies having jurisdiction over the work, and shall obtain all permits and inspections required for his work. This Contractor shall take out and pay for all permits and inspections and shall correct any violations cited by the Inspection Bureau after their inspection.
3. Surety
 - a. For one year from substantial completion Contractor shall indemnify, defend or replace at his expense any defective part of the installation resulting from his negligence or omission or material, method, means, accidents or carelessness on the part of the Owner and not be held good by this Contractor.
4. Materials and Equipment
 - a. All materials and equipment shall be new, factory all materials and equipment specified under this division and all incidental materials and equipment shall be installed in accordance with the drawings and specifications.
5. Ductwork
 - a. Allowance for all openings in the building required for the maintenance and installation of all equipment. This Contractor shall be responsible for the cutting of walls and floors.
6. Ductwork
 - a. Finish and fabric shall meet metal ductwork as shown on the plans. Equipment and materials shall be new and of the best quality. Ductwork shall be installed in accordance with the plans including gauges and reinforcing of ductwork. Install square elbow turns for clear obstructions unless shown or specified otherwise. Make required offsets in ducts to be changed to connect ducts above ceilings or maintain hoodroom. The Contractor shall be held responsible for ducts and maintain same inside duct runs at no extra cost. Ductwork shall be galvanized steel.
 - b. Hangering: Sheet metal ducts and hangers shall be properly braced and supported in accordance with the latest edition of the SMCA Manual. The internal ends of all sheet joints shall be installed in the direction of air flow. One end of each duct shall be supported by a hanger. Support ducts with 3/16" rods or straps. Space hangers not over 7'-0" overhead clear panel. Install ducts in straight and uniform centers. All ducts shall be firmly supported in place with tight connections.
7. Registers and Diffusers
 - a. All registers and diffusers shall be provided with heavy sponge rubber gasket to prevent air leakage. Diffusers and registers shall be as shown on the drawings and as specified. Registers and diffusers shall be installed with the curve of the lower end of the duct to avoid backing into the space behind the lower.
8. Duct Insulation
 - a. Supply and return ductwork in basement, crawl space and attic shall be externally insulated with 1" duct insulation with vapor barrier, except for AS NOTED FOR KITCHEN.
 - b. Hangers shall be shown on the drawings and shall be as noted for KITCHEN.
 - c. Duct insulation shall be installed in accordance with SMCA.
 - d. Duct insulation shall be certain/lead free. Johns-Manville or approved equal.
9. Installation Mount All Ductwork, Hanger HANGING/UPPER'S RECOMMENDATIONS.

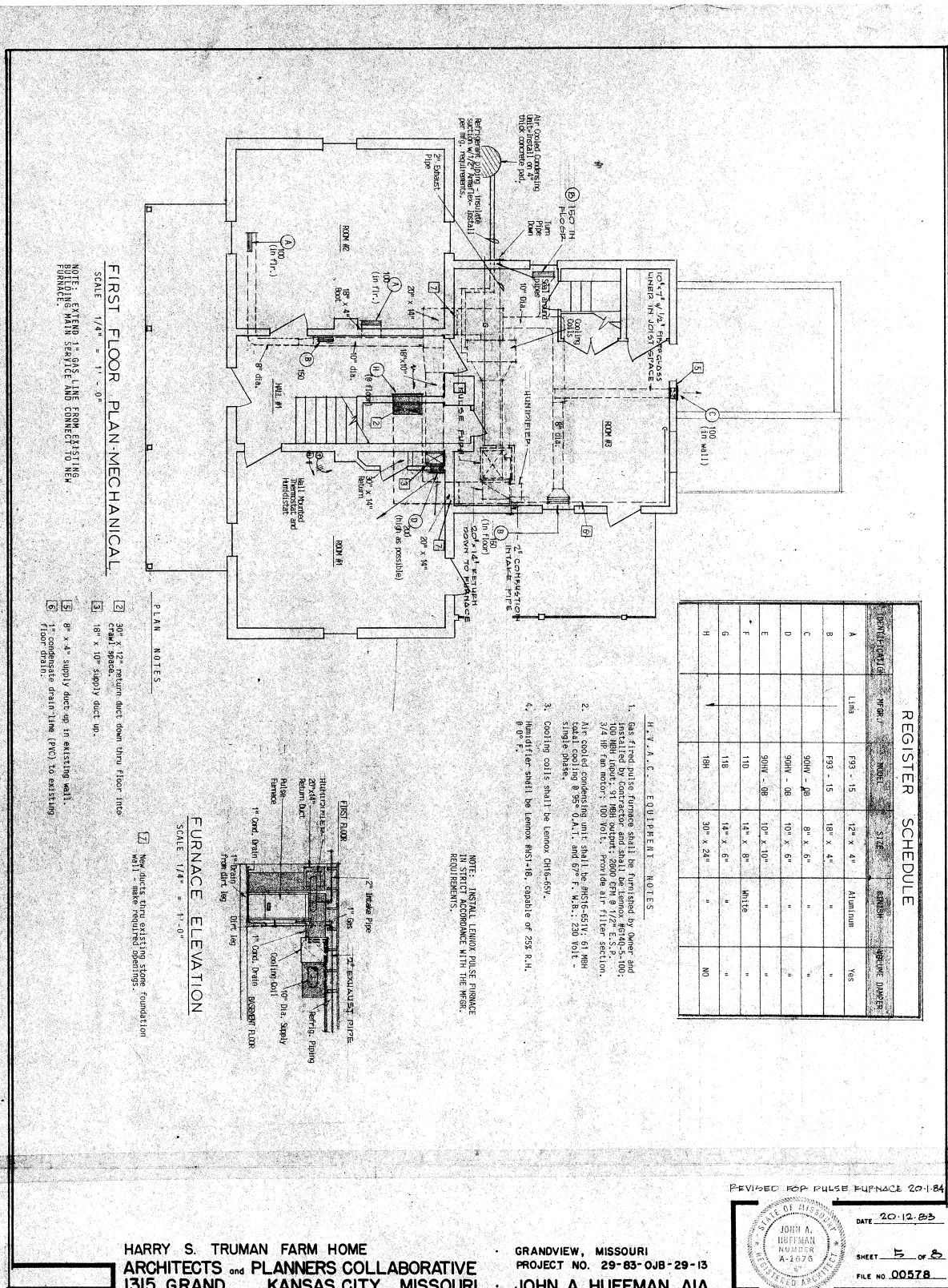
HARRY S. TRUMAN FARM HOME
ARCHITECTS and PLANNERS COLLABORATIVE
1315 GRAND KANSAS CITY, MISSOURI

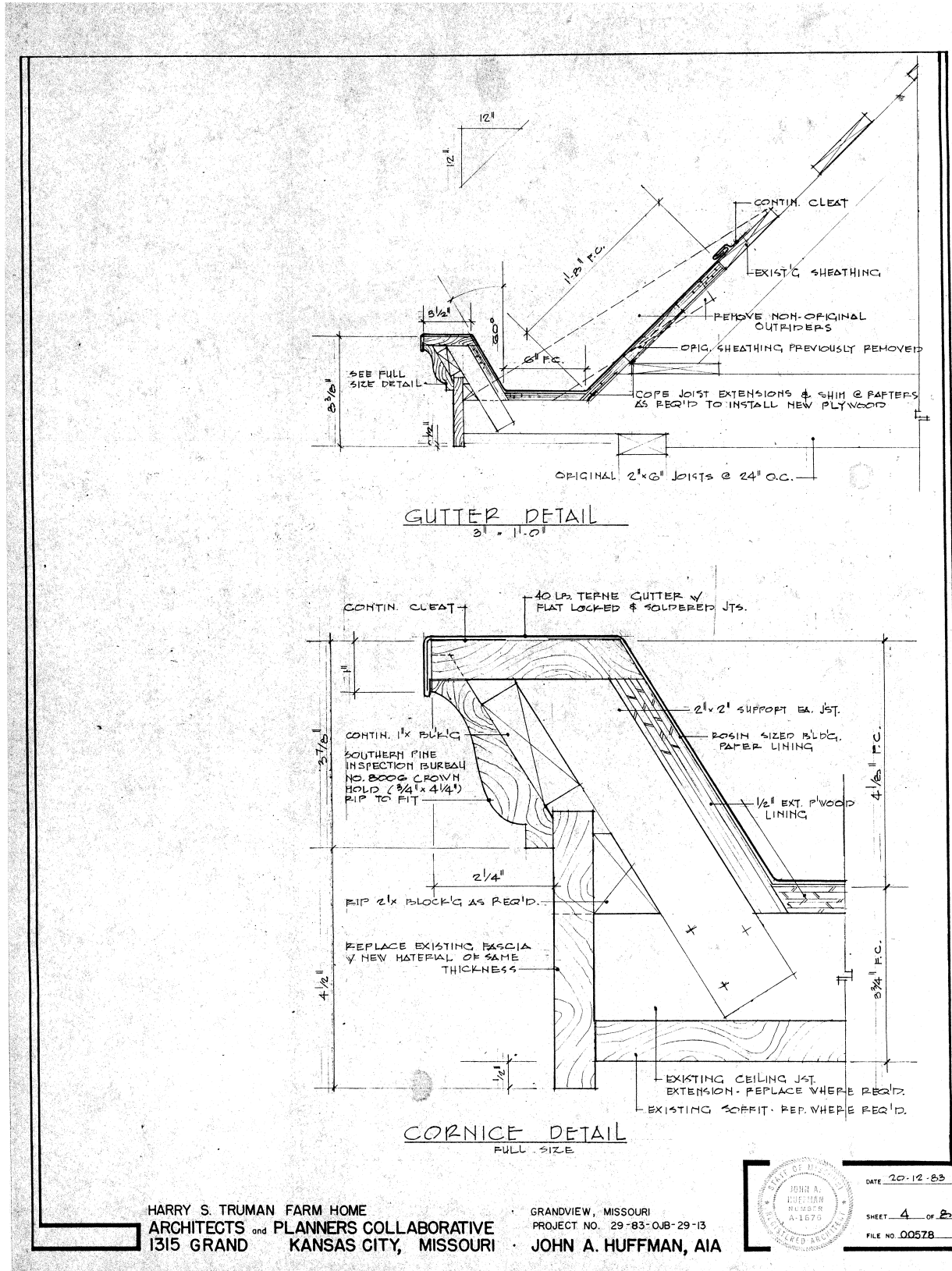
GRANDVIEW, MISSOURI
PROJECT NO. 29-83-OJB-29-13
JOHN A. HUFFMAN, AIA

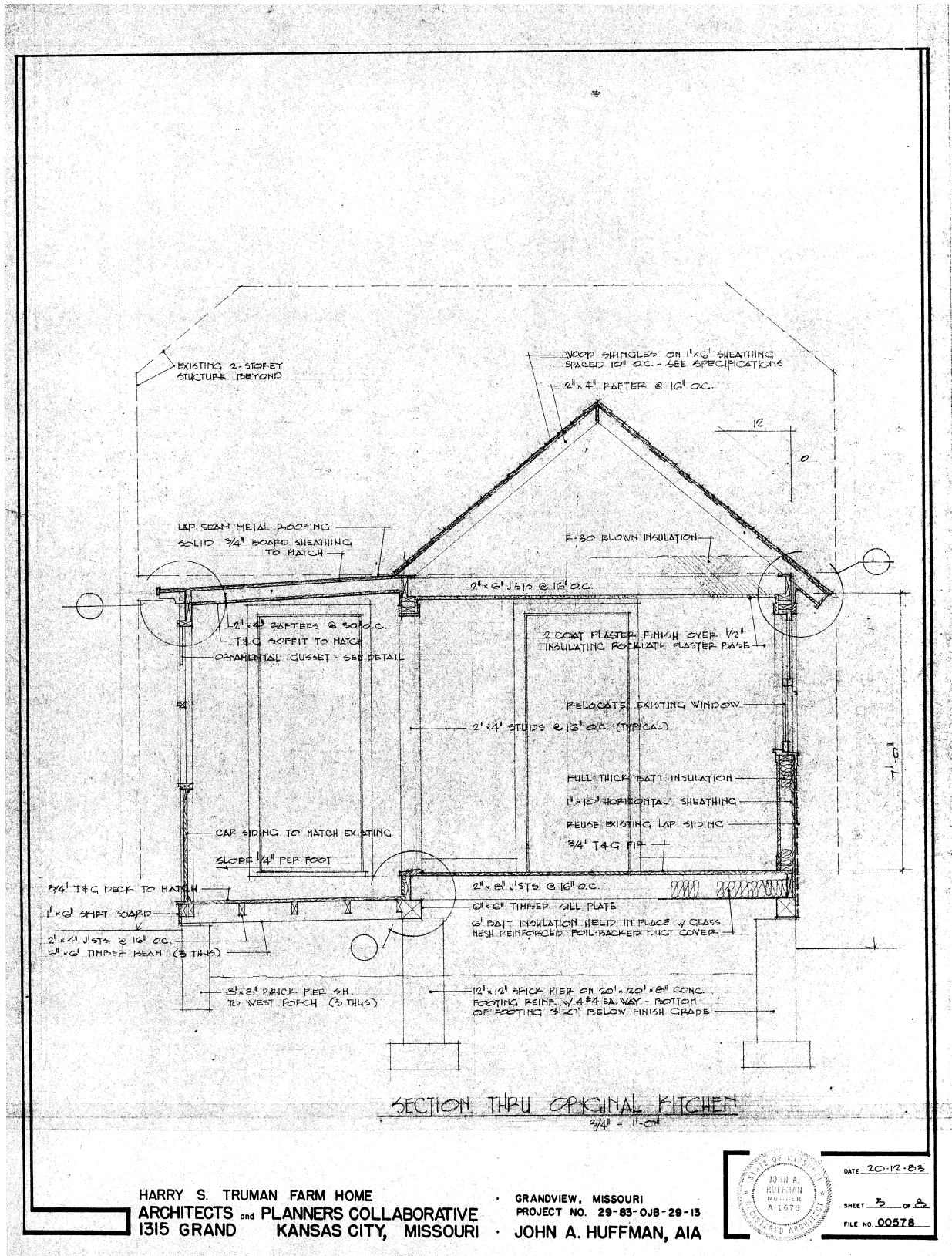
REVISED 20-1-84

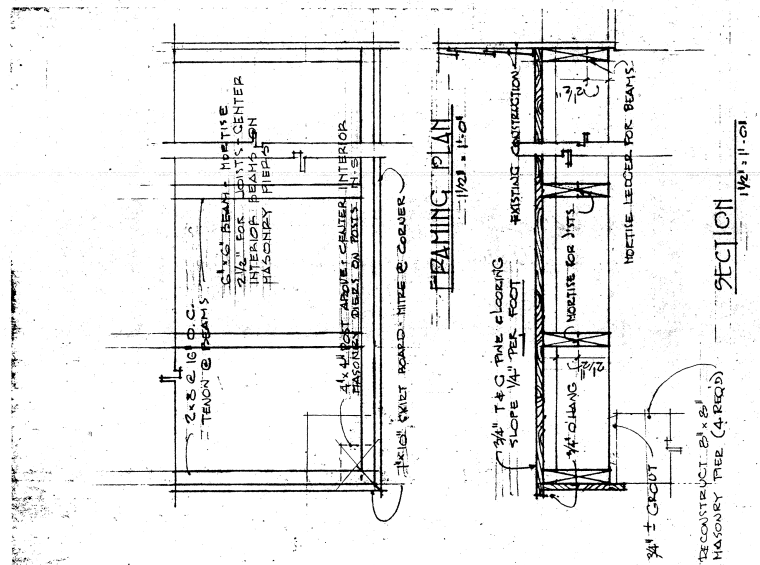


DATE 20-12-83
SHEET 6 OF 8
FILE NO. 00578





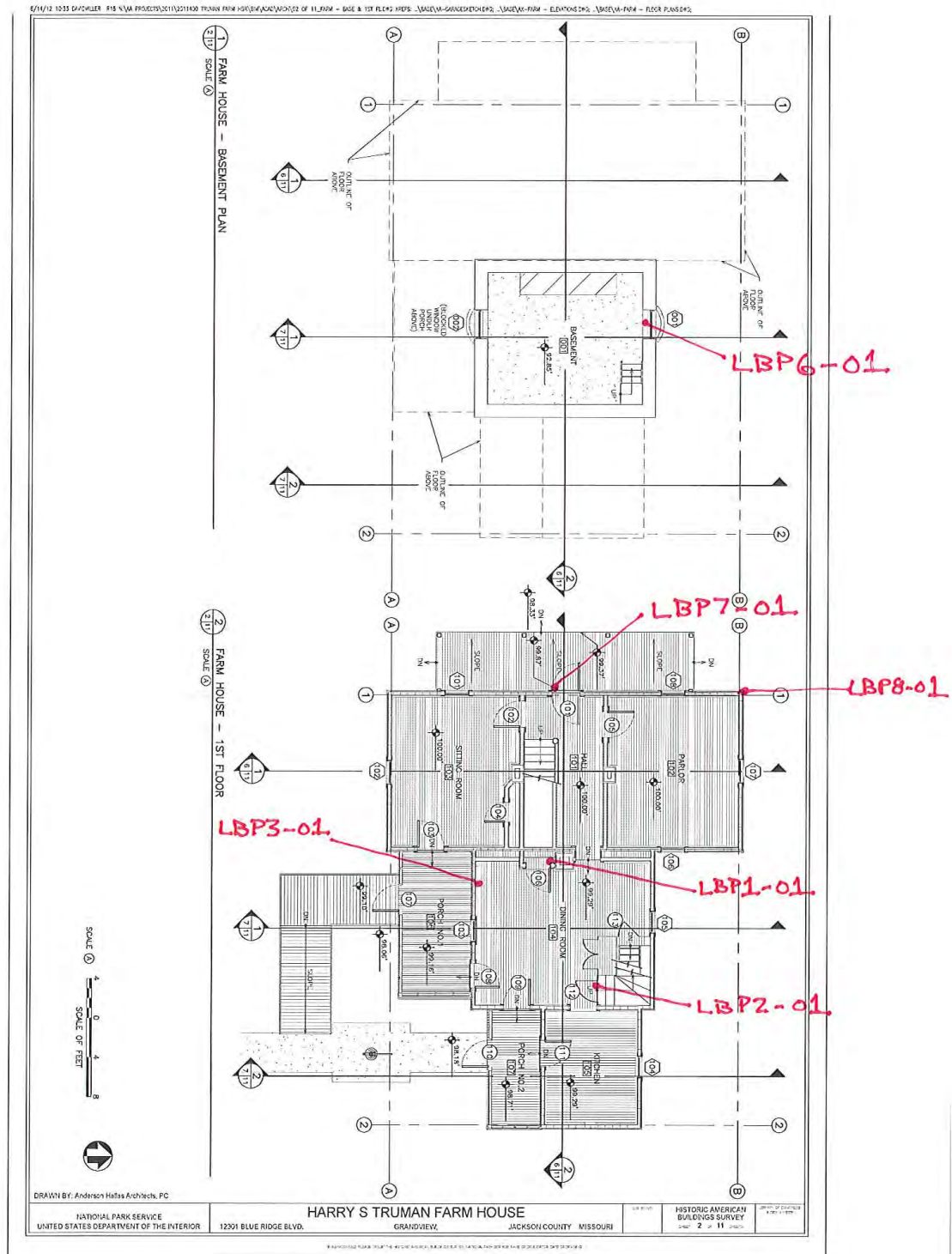


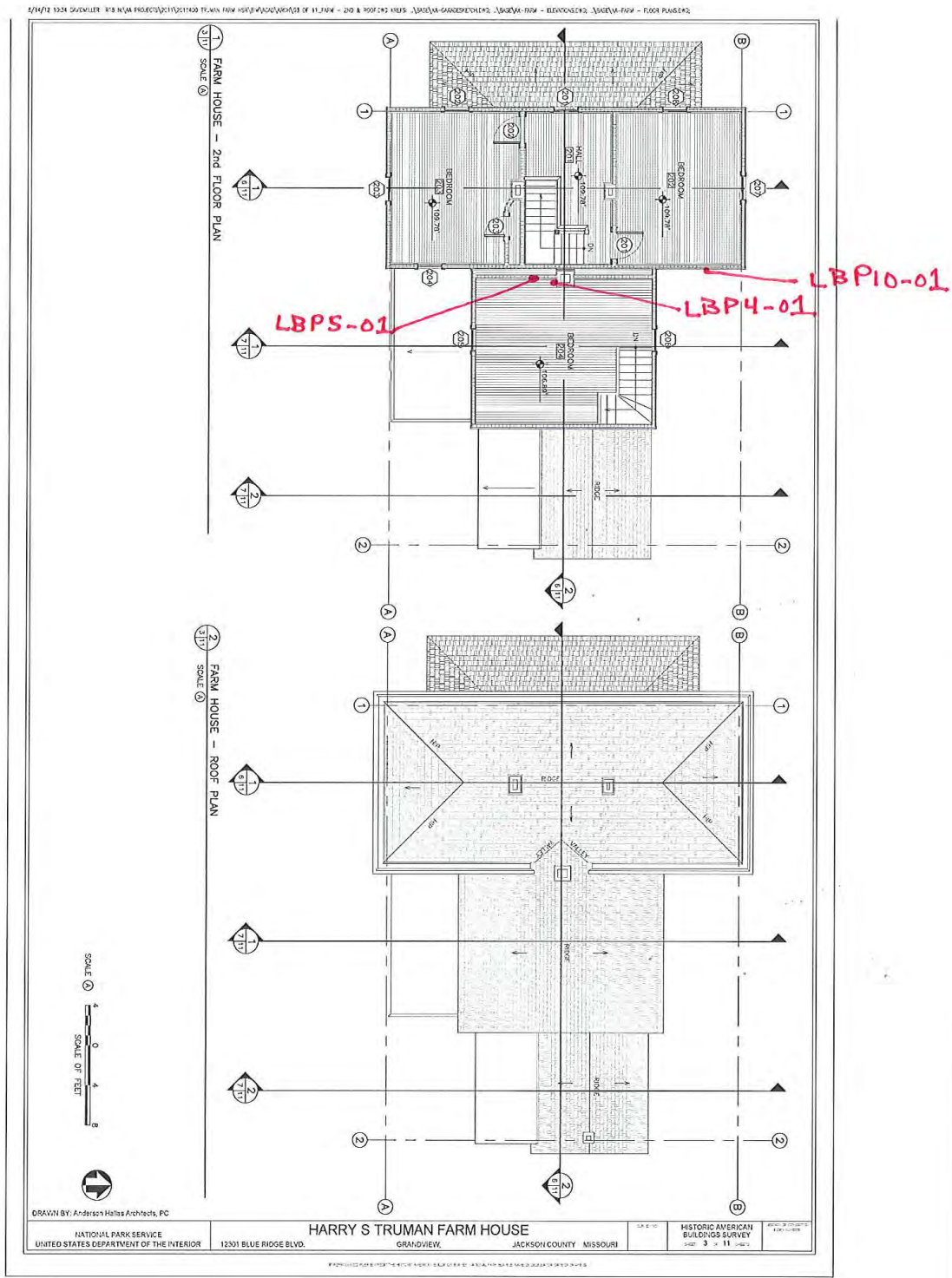


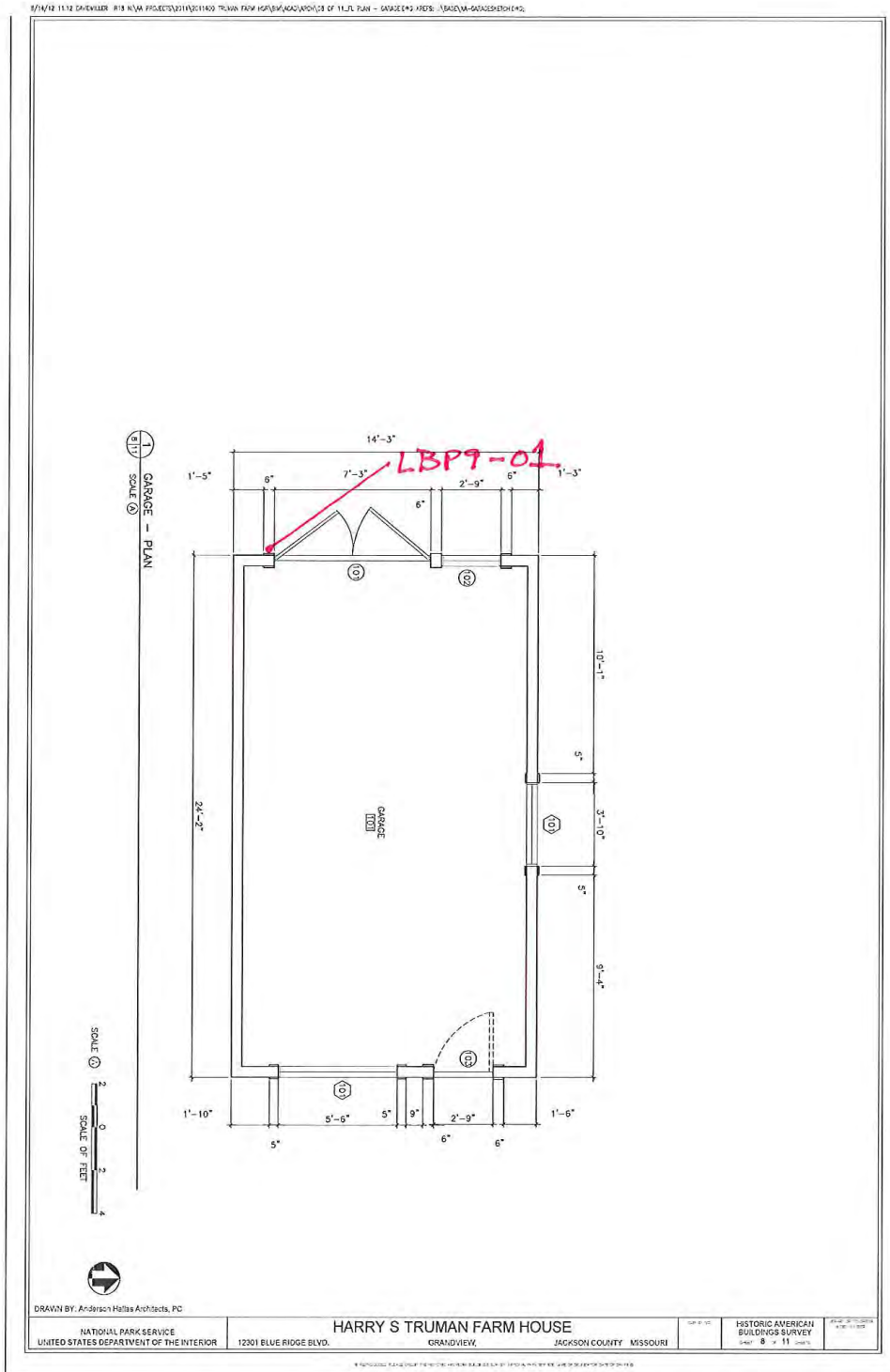
WEST PORCH DECK
HAPPY S. TRUMAN FARM HOME
REVISED AS BUILT: 16 JAN '84
5 DEC '83

APPENDIX J

Lead Based Paint Sample Locations







Landmark Environmental, Inc. **Building Inspection Form**
250 Bryant Street ♦ Denver, Colorado 80219 ♦ 720-283-8975 ♦ Fax: 720-283-8666

Project: Truman Farm 11027.001.001		Client: Anderson Hallas Architects		Date: 12/06/11 Inspector(s): M. Roberts	
---------------------------------------	--	---------------------------------------	--	--------------------------------------------	--

Sample #	Location:	Component	Substrate	Color	% Pb
TFH-120611-LBP1-01	Closet @ Dining RM	Wall	Plaster	Tan	0.003
TFH-120611-LBP2-01	Door @ Stair	Door	Wood	Tan/Gray	0.174
TFH-120611-LBP3-01	SW Cnr Dining Rm	Wall	Plaster	Tan/Green	0.651
TFH-120611-LBP4-01	HST Bedroom	Wall	Plaster	Green/Gray	0.016
TFH-120611-LBP5-01	HST Bedroom	Trim	Wood	Brn/Green	0.003
TFH-120611-LBP6-01	N Wall Basement	Window	Wood	White	19.33
TFH-120611-LBP7-01	Front Door Ext.	Door	Wood	White	5.859
TFH-120611-LBP8-01	Exterior Trim	Trim	Wood	Green	0.005
TFH-120611-LBP9-01	Exterior Garage	Trim	Wood	White	25.42
TFH-120611-LBP10-01	Exterior Upper Trim	Trim	Wood	Green	22.01

RESERVOIRS ENVIRONMENTAL, INC.

**5801 Logan St., Suite 100
Denver CO 80216**

TABLE ANALYSIS: LEAD IN PAINT

RES Job Number: **RES 225616-1**
Client: **Landmark Environmental, Inc.**
Client Project Number / P.O.: **11027.001.001**
Client Project Description: **Truman Farm**
Date Samples Received: **December 8, 2011**
Analysis Type: **USEPA SW846 3050B / AA (7420)**
Turnaround: **3-5 Day**
Date Samples Analyzed: **December 9, 2011**

Client ID Number	Lab ID Number	Reporting Limit (%)	LEAD CONCENTRATION (%)
TFH-120611-LBP1-01	EM 834186	0.002	0.003
TFH-120611-LBP2-01	EM 834187	0.004	0.174
TFH-120611-LBP3-01	EM 834188	0.005	0.651
TFH-120611-LBP4-01	EM 834189	0.003	0.016
TFH-120611-LBP5-01	EM 834190	0.003	0.003
TFH-120611-LBP6-01	EM 834191	0.005	19.33
TFH-120611-LBP7-01	EM 834192	0.005	5.859
TFH-120611-LBP8-01	EM 834193	0.004	0.005
TFH-120611-LBP9-01 (Labeled TFG-120611-LBP9-01)	EM 834194	0.003	25.42
TFH-120611-LBP10-01	EM 834195	0.003	22.01

* Unless otherwise noted all quality control samples performed within specifications established by the laboratory.

BRL = Below Reporting Limit

Page 2 of 2

Data Qa

 Digitally signed by Data Qa
Date: 2011.12.09 15:52:30 -0700

APPENDIX K

Value Analysis Report

Value Analysis Study

Truman Farm – Harry S Truman National Historic Site PMIS 38190



Truman Farm CLR/HSR/EA Study

Value Analysis Study 2012

Anderson Hallas Architects, PC
715 Fourteenth Street
Golden, Colorado 80401
November 30, 2012



Table of Contents

INTRODUCTION	1
<i>Summary Description of the Project and Progress to Date</i>	1
<i>Study Specifics and Objectives</i>	1
<i>Special Criteria</i>	2
<i>Project Stakeholders</i>	2
INFORMATION - FUNCTIONAL ANALYSIS	3
<i>Functional Analysis System Technique (FAST) Diagram</i>	3
CREATIVITY	4
EVALUATION	18
<i>Choosing by Advantages Evaluation Factors</i>	19
<i>Choosing by Advantages Matrix</i>	21
ANALYSIS	25
<i>CBA Total Cost Graph</i>	25
RECONSIDERATION PROCESS	26
IMPLEMENTATION & NEXT STEPS	27
VALUE ANALYSIS TEAM	28
APPENDICES	29
Appendix A: VA Agenda	
Appendix B: VA Meeting Minutes	
Appendix C: Class C Cost Estimates *Vj ku'j cu'dggp'gzvtcevgf "cpf 'r nægf 'lp'Cr r gpf k'z'H+	
Alternative 1	
Alternative 2	
Alternative 3a	
Alternative 3b	

Foreword

This Value Analysis Report records the process by which the Preferred Treatment Alternative was identified for the Truman Farm buildings and site within the Harry S Truman National Historic Site, to direct the best use of available funds.

This is to certify that the Value Analysis Study was led by the undersigned and was conducted in accordance with National Park Service value analysis principles and guidelines.



Nanon Adair Anderson, AIA, LEED AP BD+C
Value Study Facilitator



Front (west) of the Truman Farm Home

INTRODUCTION

On July 25th and 26th, 2012, a Value Analysis (VA) was conducted in the Truman Library in Independence, Missouri, to determine the Preferred Alternative for the treatment of the Truman Farm buildings and site.

Goals:

- Convey the breadth of Harry S Truman's relationship with the Truman Farm from his tenure as a young man working the farm to his intimate influence on daily operations through his presidency to his decisions regarding land development in later years.
- Preserve the farm's cultural landscape, including its individual features and overall historic character that contribute to this story, and to the NHRP and NHL districts with an expanded period of significance (1906 to 1965).
- Provide an authentic experience that readily conveys the spatial arrangement of the period of significance, and that also provides for ease of access to historic buildings, structures, features and spaces.
- Address operational needs and code deficiencies such as accessibility, utility system and distribution, and fire and life safety in a manner that preserves the cultural landscape.

Summary Description of the Project and Progress to Date

To date, the Project Team has completed its site investigation, as-constructed drawings (in CAD) and the draft report of the Cultural Landscape Report (CLR), Historic Structure Report (HSR) and Environmental Assessment (EA).

Treatment alternatives developed for this VA were developed in consultation with the park and in the context of the *General Management Plan Revision* (1999), the *Long Rang Interpretive Plan* (2000) and the *Cultural Landscape Inventory* (2010).

Study Specifics and Objectives

The Value Analysis had several basic objectives:

- Preserve cultural resources through preservation, stabilization, restoration, and repair.
- Preserve known, potential and unknown archeological resources.
- Restore contributing landscape characteristics including features and vegetation that convey the character of the Truman Farm.
- Restore the farm's historic spaces, and the historic physical and visual connections between the NHL and the adjacent land that was originally part of the Truman's landholdings.
- Convey the breadth of landholdings of the Truman Farm during the period of significance, especially the evolution from 600 acres to 5 acres today.
- Fulfill the Long Range Interpretive Plan's objectives to interpret the evolution of the farm and its connection to the railroad, community, and other Truman sites.

Special Criteria

Applicable Codes:

- International Building Codes 2009 (IBC, IEBC, etc.)
- Architectural Barriers Act Accessibility Standards (ABAAS)

Planning Criteria and Constraints and Background Study:

- *Existing Structural Conditions Foundation Assessment & Recommended Treatments*, Quinn Evans Architects, September 30, 2005
- *Harry S Truman National Historic Site: General Management Plan Revision*, NPS, April 1999
- *Harry S Truman National Historic Site: Long Range Interpretive Plan*, NPS, November 2000
- *Truman Farm Cultural Landscape Inventory*, NPS, 2010
- *National Historic Landmark Nomination: Harry S Truman Historic District*, NPS, n.d.

Project Stakeholders

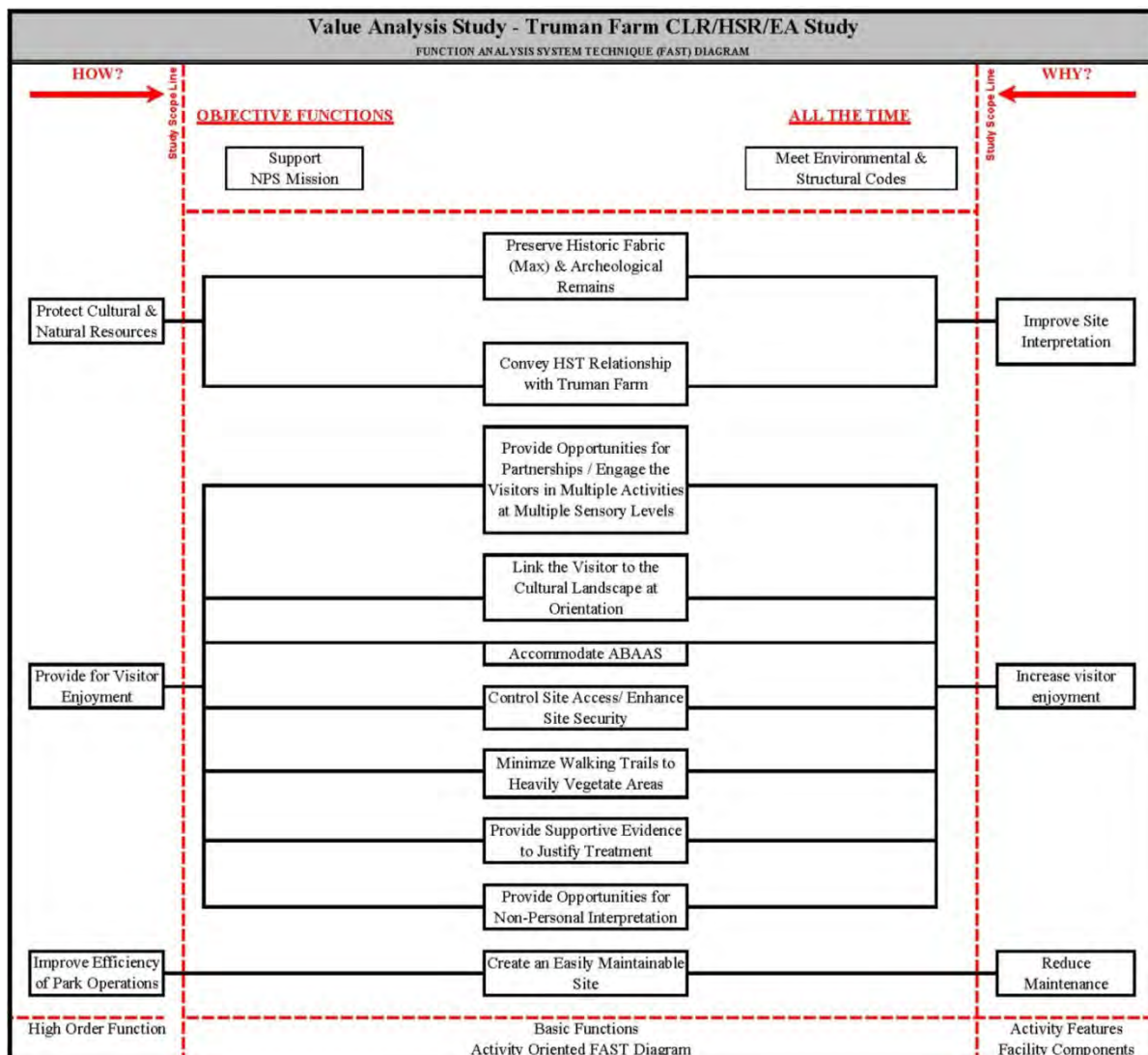
Stakeholders	Primary Interest
City of Grandview	Tourism/ Economic Drivers; Bike trail concept; Volunteers
Jackson County Historical Society/ Missouri Historical Society/ SHPO	Tours, educational opportunities – junior rangers; Activate site; Multi-agency visitor center; Historic integrity
Jackson County, Missouri Parks and Recreation	Tours, historic integrity of landscape and buildings
Missouri State Parks	Support/complimentary
Congressman Cleaver & Senator Blunt	Paint store re-development
NPS HSTR: Facilities	Equipment storage; Remove existing maintenance building
NPS HSTR: Interpretative Staff	Adequate staffing
Neighbors	Safety/security and neat appearance
Electrical Utilities	Easement issues: access, power line impact
4H/FFA	Agriculture
Master Gardeners of Kansas City	Gardening cert./volunteers
Eagle Scouts	Site maintenance
Local Schools	Field trips
Truman Library	Partnering
Motor Coach Trips	Tourism – visitor experience; Need info re: other sites / NPS message
State/Local Tourism Agencies	Tourism

INFORMATION - FUNCTIONAL ANALYSIS

Using the functional analysis, the Study Team validated the general project program. Objectives included:

- Preserve historic fabric (max) and archeological remains
- Convey HST relationship with Truman Farm
- Provide opportunities for partnerships and engage the visitors in multiple activities at multiple sensory levels
- Link the visitor to the cultural landscape at orientation
- Accommodate ABAAS
- Control site access/enhance security
- Minimize walking trails to heavily vegetated areas
- Provide supportive evidence to justify treatment
- Provide opportunities for non-personal interpretation
- Create an easily maintainable site

Functional Analysis System Technique (FAST) Diagram



CREATIVITY

Summary of Treatment Alternatives

The four alternatives, as well as Common to All Alternatives actions, as presented to the Study Team, were as follows:

Common to All Alternatives

Landscape:

- Retain existing fences along north, east and south (along Tract 2 boundary) perimeters
- Retain screen along north property line at Farm Home
- Accessible route through site, to and between all contributing spaces and features
- New facade lighting (smaller, energy efficient LED fixtures with optics to reduce light spill) and remove existing fixtures
- New uplighting at flagpole (LED lighting) to comply with US Flag Code
- New lighting between visitor contact center and historic core (low light levels with full cutoff optics)
- Retain existing fire hydrants
- Retain roadside swale along Blue Ridge Boulevard, and excavate and repair drainage swale and culvert under new gravel drive to facilitate positive drainage
- Provide positive drainage away from Farm Home, Garage, and Poultry House
- Grade the topography for positive flow away from buildings and structures
- Add perimeter drain (set 10 feet from building edge) around Farm Home and routed to outfall on Tract 2 to facilitate positive drainage
- Extend roof downspouts a minimum of 10 feet from building edge of Farm Home, and flow to or connect to perimeter drain
- Provide water quality and storm water detention facilities at new visitor contact center, and repair drainage swale and culvert at vehicular entrances

Buildings:

Farm Home

- Repair gutters/downspouts
- Windows - add weather-stripping
- Replace screen at west screen door
- Reglaze transom at main entry door
- Add foundation drain system
- Stabilize foundation from movement
- Replace sill plates in contact with masonry
- Replace rim joist that bears on masonry
- Miscellaneous plaster repair after foundation stabilization
- Protect wood members from decay that bear on basement slab
- Replace porch decking with treated
- Strengthen roof framing over bedroom 204
- Add attic venting at bedroom 204 & kitchen
- Repair west wall finishes due to foundation movement

- Replace porch framing at dining room & west porches
- Allow for investigation/replacement of kitchen floor framing
- Replace existing supply grills at 2nd floor & wall paper wrapped diffusers
- Provide new auto humidity control system
- Clean, pressure test & reseal existing duct system
- Clean existing supply & return grills
- Add a direct outside air intake
- Repair/replace existing duct insulation
- Provide active crawl space ventilation
- Install a code approved backflow protection device on existing ¾" cold water line
- Insulate cold water line
- Camera scope sanitary sewer line
- Provide power to humidity control system
- Replace existing photocell controls to exterior lights with new digital time clock
- Replace existing light pucks
- Fire alarm upgrades
- Reattach lightning system
- Option- Install new fire sprinkler
- Option - Replace existing feeders from utility panel, main service & breakers

Garage

- Strengthen floor rim joist
- Replace flooring with treated
- Allow for more decay replacement
- Add a north/south lateral system
- Repair doors/hinges
- Verify/strengthen wall studs & rim joist
- Strengthen all openings studs & headers
- Add connections for roof anchorage (wind uplift)
- Replace south top of wall plate (decayed by insects)

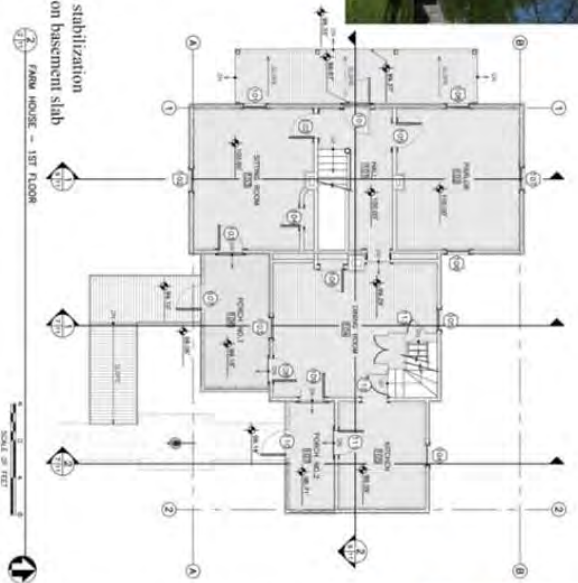
Poultry House

- Add a foundation
- Add 2 purlins & wall support
- Repair damage from tree
- Replace wall sheathing with treated
- Anchor walls to new foundation
- Add a lateral bracing system (nail sheathing to girts or add diagonal sheathing)



Farmhouse, ca. 2011

- Repair gutters/downspouts
- Windows - add weather-stripping
- Replace screen at west screen door
- Reglaze transom at main entry door
- Add foundation drain system
- Stabilize foundation from movement
- Replace sill plates in contact with masonry
- Replace rim joist that bears on masonry
- Miscellaneous plaster repair after foundation stabilization
- Protect wood members from decay that bear on basement slab
- Replace porch decking with treated
- Strengthen roof framing over bedroom 204
- Add attic venting at bedroom 204 & kitchen
- Repair west wall finishes due to foundation movement
- Replace porch framing at dining room & west porches
- Allow for investigation/replacement of kitchen floor framing
- Replace <-> supply grills at 2nd floor & wall paper wrapped diffusers
- Provide new auto humidity control system
- Clean, pressure test & reseat <-> duct system
- Clean <-> supply & return grills
- Add a direct outside air intake
- Repair/replace <-> duct insulation
- Provide active crawl space ventilation
- Install a code approved backflow protection device on <-> 3/4" cold water line
- Insulate cold water line
- Camera scope sanitary sewer line
- Provide power to humidity control system
- Replace <-> photocell controls to exterior lights with new digital time clock
- Replace <-> light pucks
- Fire alarm upgrades
- Reratchet lightning system
- Option- Install new fire sprinkler
- Option - Replace <-> feeders from utility panel, main service & breakers



Garage, ca. 2011

- Strengthen floor rim joist
- Replace flooring with treated
- Allow for more decay replacement
- Add a north/south lateral system
- Repair doors/hinges
- Verify/strengthen wall studs & rim joist
- Strengthen all openings studs & headers
- Add connections for roof anchorage (wind uplift)
- Replace south top of wall plate (decayed by insects)



Poultry House, ca. 2011

- Add a foundation
- Add 2 purlins & wall support
- Repair damage from tree
- Replace wall sheathing with treated
- Anchor walls to new foundation
- Add a lateral bracing system (nail sheathing to girts or add diagonal sheathing)



TRUMAN FARM ☆☆☆☆☆

HARRY S TRUMAN NATIONAL HISTORIC SITE

July 25, 2012

ANDERSON HALLAS ARCHITECTS, P.C.



COMMON TO ALL - Buildings

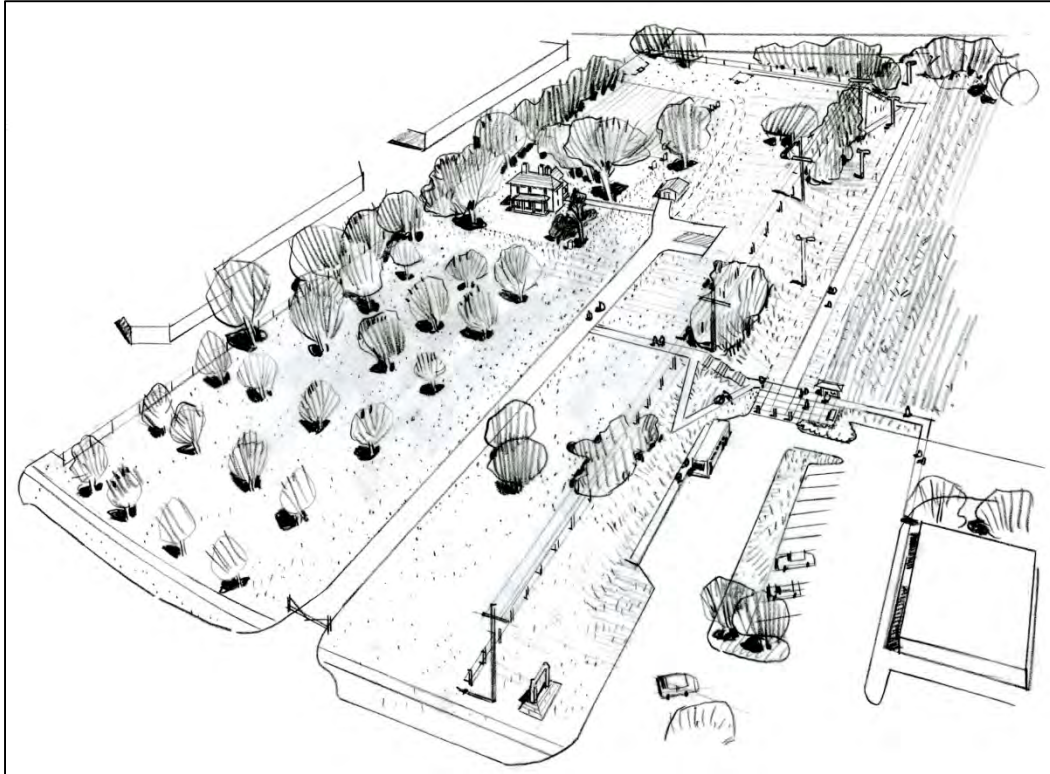
Common to All Architecture

Alternative 1: Rehabilitate the Family Farm

Buildings:

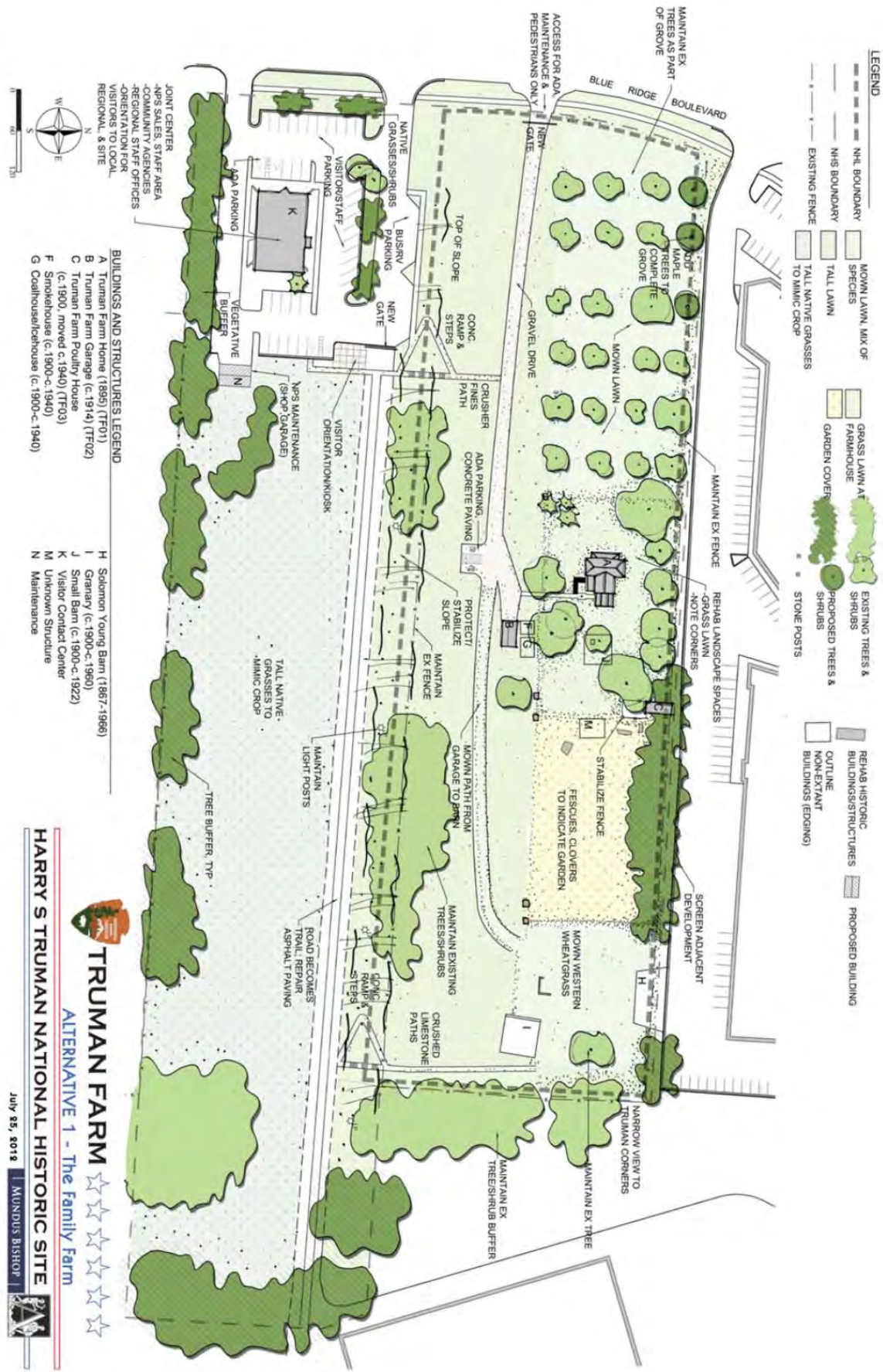
Farm Home

- New ABAAS compliant ramp for Porch 107
- Enlarge door 110
- New opening from Porch 107 to Kitchen 105
- Repair walls (interior and exterior)
- Provide an Exhibit Allowance



Alternative 1 Sketch

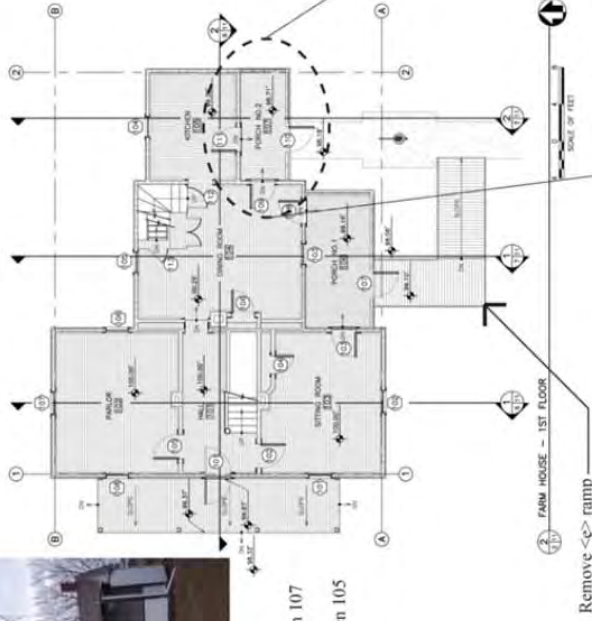
Alternative 1 Landscape





Farmhouse, ca. 2011

- New ABAAS compliant ramp for Porch 107
- Enlarge door 110
- New opening from Porch 107 to Kitchen 105
- Repair walls (interior and exterior)
- Provide an Exhibit Allowance



Remove <e> ramp

FARM HOUSE - 1ST FLOOR

SCALE OF FEET

1/4" = 1'-0"

1/4" = 1'-0"

1/4" = 1'-0"

1/4" = 1'-0"

1/4" = 1'-0"

1/4" = 1'-0"

1/4" = 1'-0"

1/4" = 1'-0"

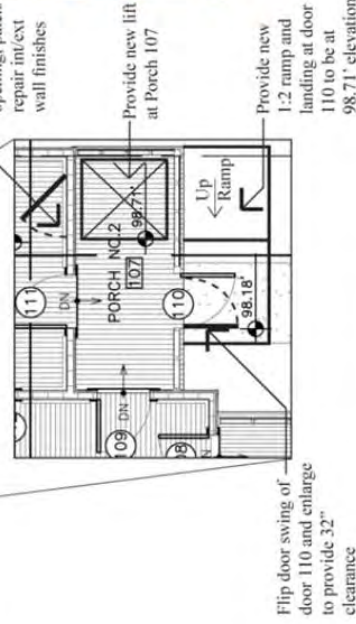
1/4" = 1'-0"



Existing Condition of Porch 107



Existing Condition of Porch 107 Entry



TRUMAN FARM



ALTERNATIVE 1, Rehabilitate the Family Farm - Buildings

HARRY S TRUMAN NATIONAL HISTORIC SITE

July 25, 2012

ANDERSON HALLAS ARCHITECTS, P.C.



Alternative 2: Rehabilitate - Farm, City and Nation

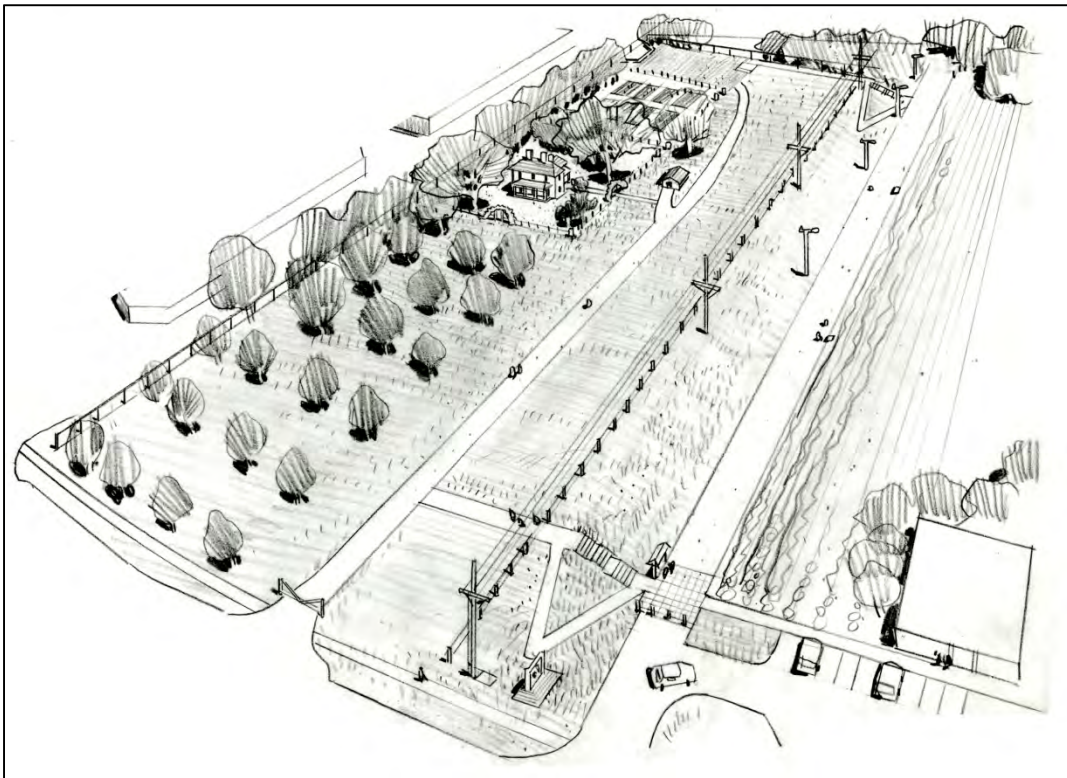
Buildings:

Farm Home

- Improve ramp at Porch 106 to be
- ABAAS compliant
- Enlarge doors 107 and 108
- Repair walls (interior and exterior)

Garage

- Interior finishes repair (plaster and flooring)
- Electrical upgrades for code
- Structural upgrades
- Exhibit Allowance



Alternative 2 Sketch



Alternative 2 Landscape

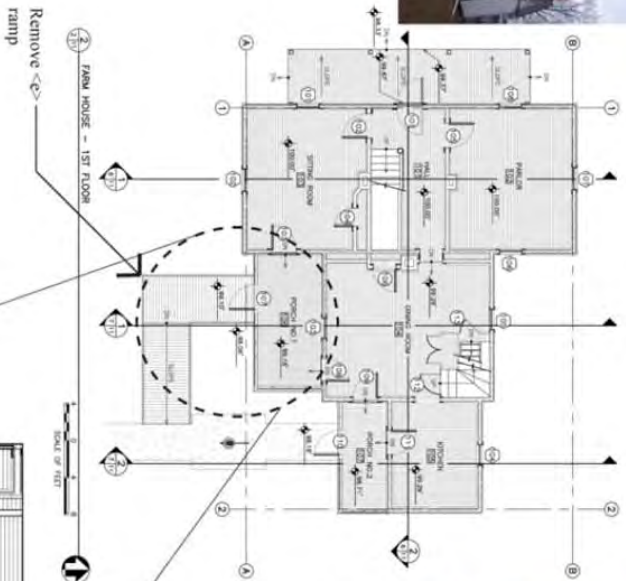


Farmhouse, ca. 2011

- Improve ramp at Porch 106 to be ABAAS compliant
- Enlarge doors 107 and 108
- Repair walls (interior and exterior)

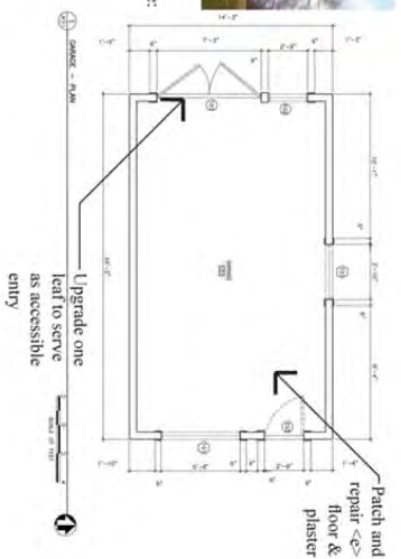


Existing Condition of Porch 106 & 107



Garage, ca. 2011

- Updates for Public Access Include:
- Interior finishes repair (plaster and flooring)
- Electrical upgrades for code
- Structural upgrades
- Exhibit Allowance



Enlarge doors 107 and 108 for 32" clear opening; repair int/ ext wall finishes

Provide a new 5'x5' landing & 1:10 ramp at door 108

Reconstruct ramp to be ABAAS compliant (provide guard/handrail, edge protection, door clearance, etc.)

Existing Condition of Garage Interior



TRUMAN FARM ☆☆☆☆☆

ALTERNATIVE 2, Farm, City & Nation - Buildings



July 25, 2012

ANDERSON HALLAS ARCHITECTS, PC

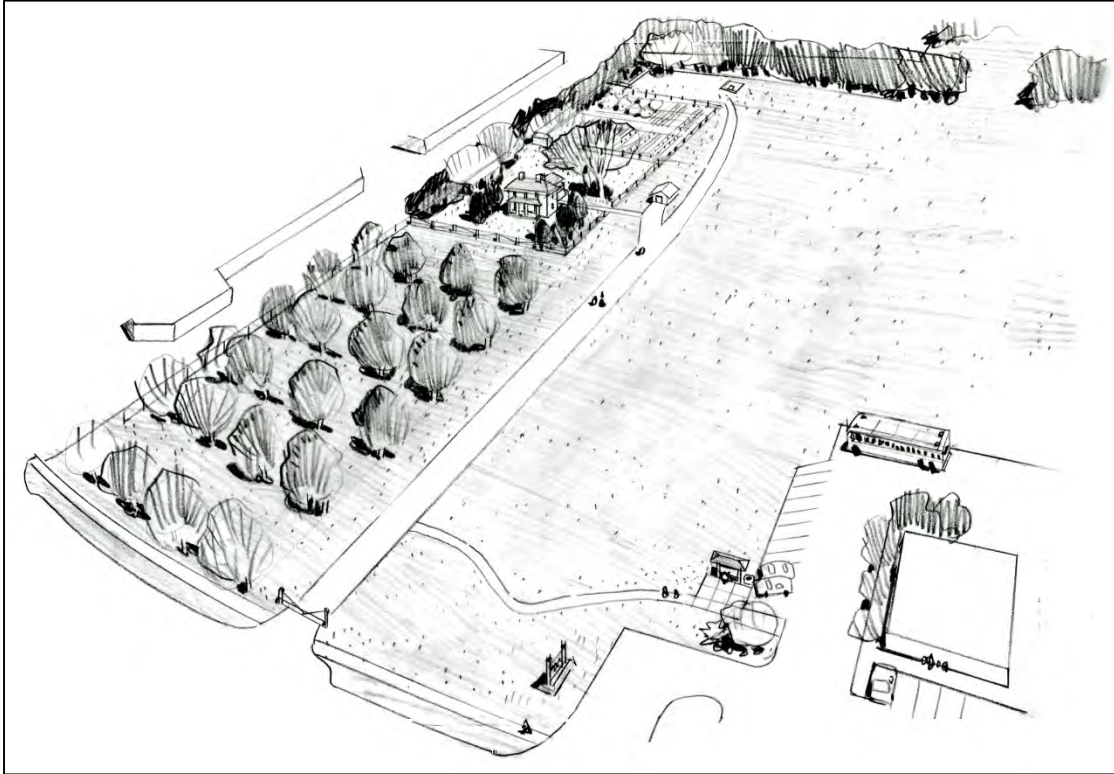
Alternative 2 Architecture

Alternative 3A: Restore the Farm to ca. 1917

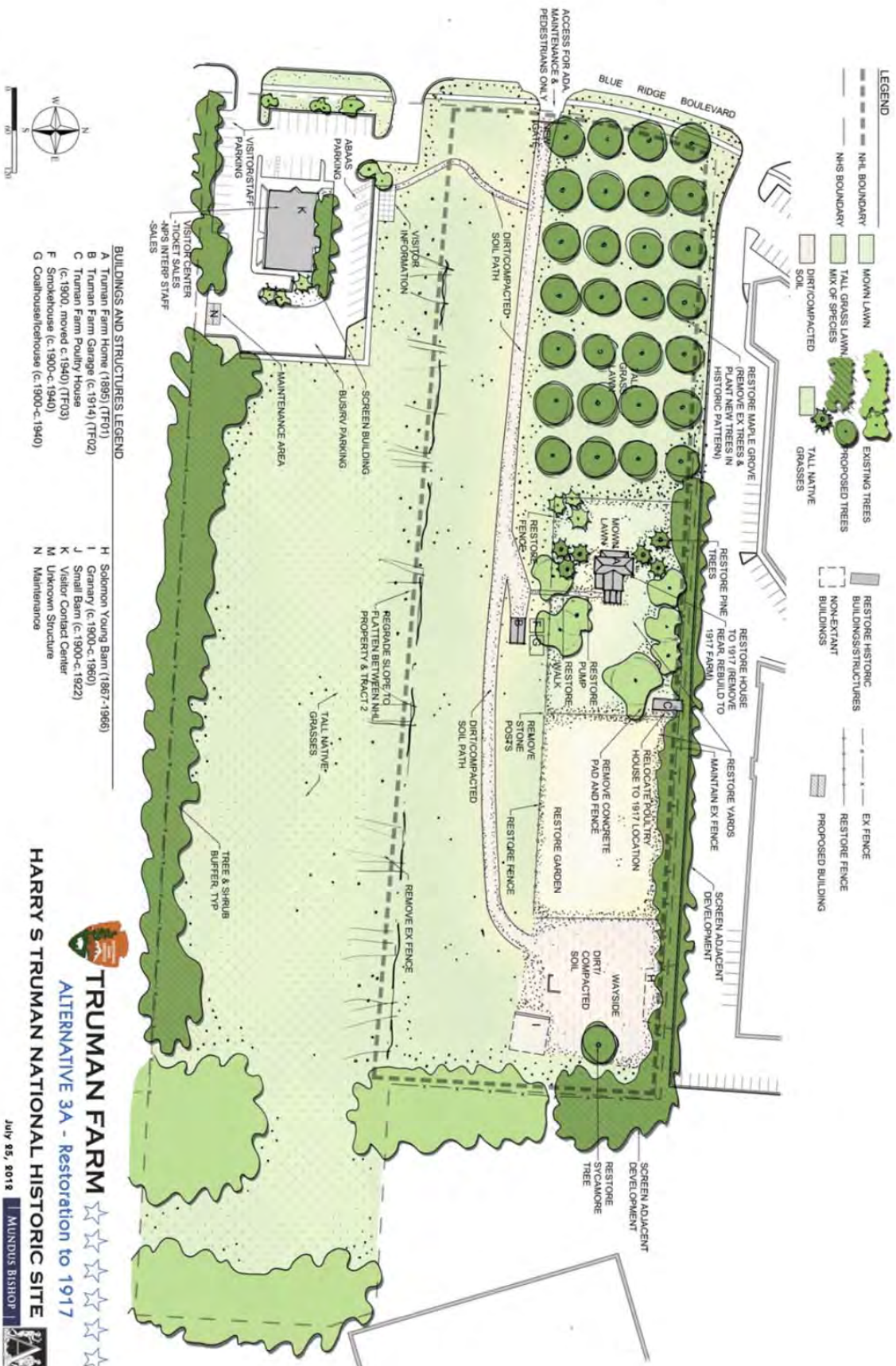
Buildings:

Farm Home

- Improve ramp for compliant ABAAS
- No changes to doors 107 and 108; upgrade hardware only



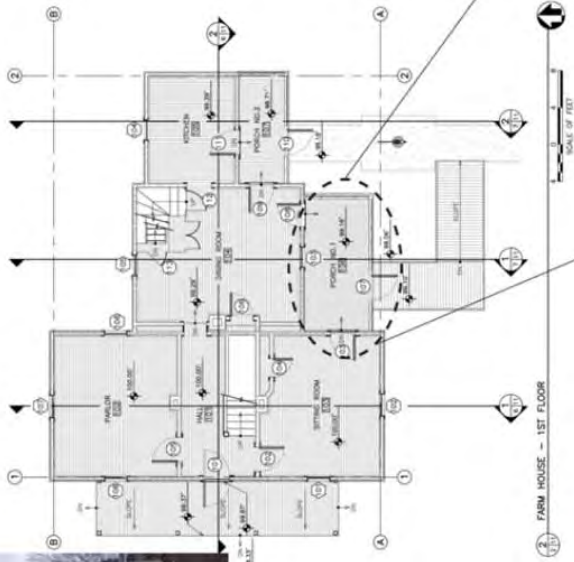
Alternative 3A Sketch





Farmhouse, ca. 2011

- Improve ramp for compliant ABAAS
- No changes to doors 107 and 108; upgrade hardware only

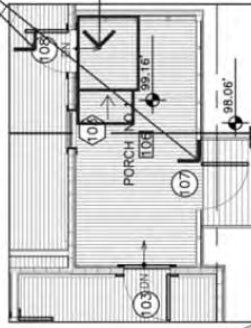


Existing Condition of Porch 106 Ramp



Existing Condition of Porch 106

- Provide new swing clear hinges & lever style doors 107 and 108
- Provide a new 5'x5' landing & 1:10 ramp (3") at Porch 106
- Retain accessible entry in <e> location with minimal modifications to improve accessibility; Park staff escort visitors through the farmhouse



ALTERNATIVE 3A, Restoration 1917 - Buildings

TRUMAN FARM ☆☆☆☆☆

HARRY S TRUMAN NATIONAL HISTORIC SITE



July 25, 2012

ANDERSON HALLAS ARCHITECTS, PC

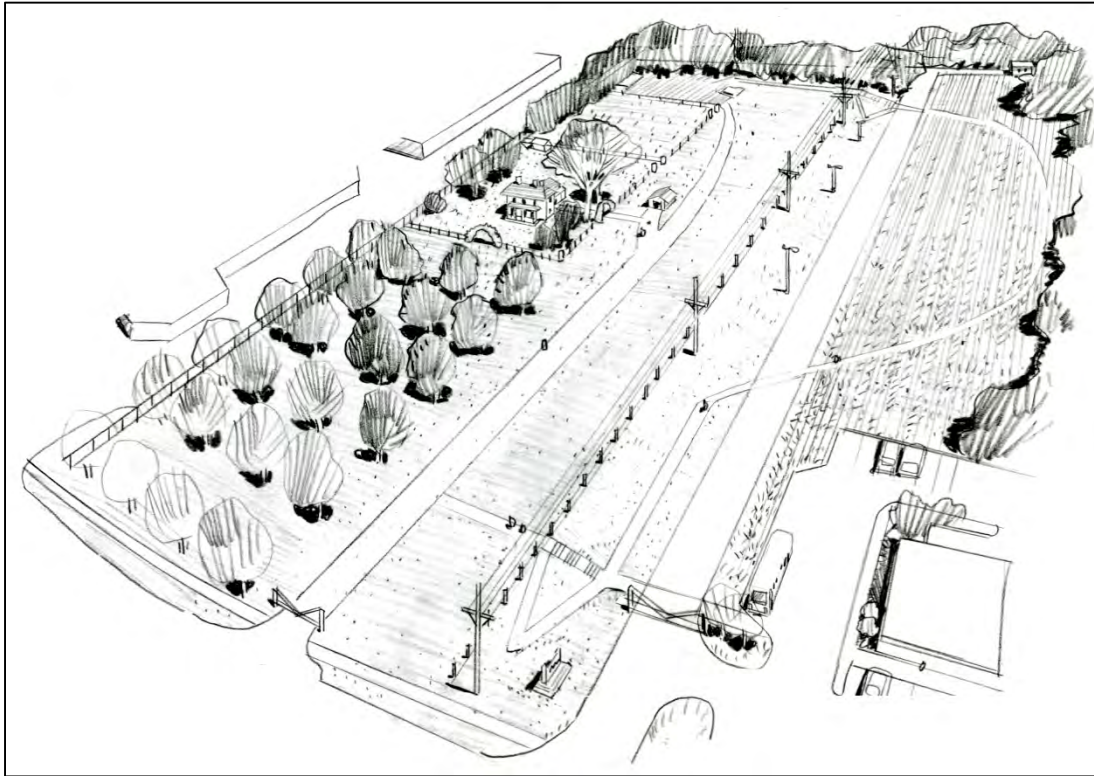
Alternative 3A Architecture

Alternative 3B: Restore the Farm to ca.1957

Buildings:

Farm Home

- Remove 1984 alterations
- Reconstruct to a ca. 1957 era appearance
- Include a 3'-0" door for ABAAS



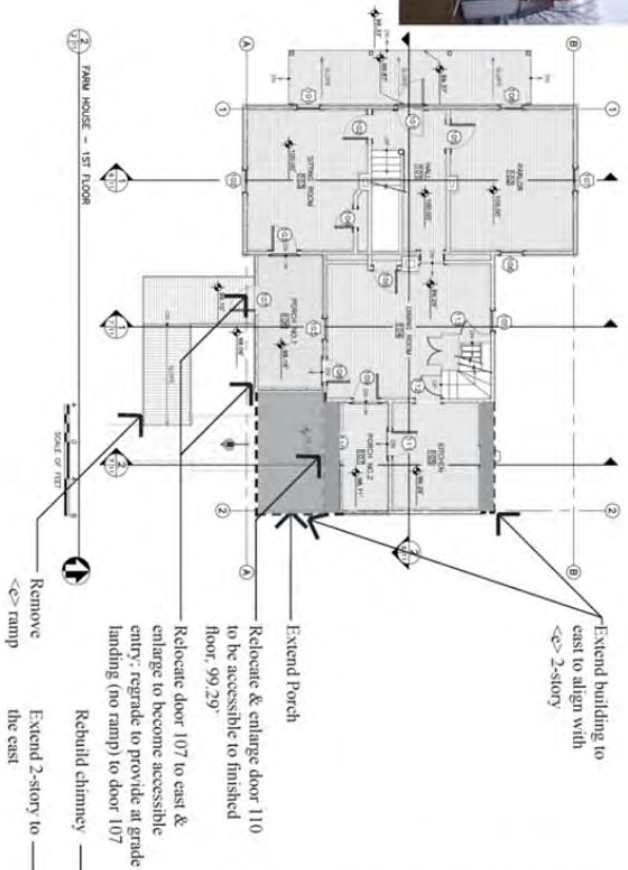
Alternative 3B Sketch





Farmhouse, ca. 2011

- Remove 1984 alterations
- Reconstruct to a ca. 1957 era appearance
- Include a 3'-0" door for ABAAAS

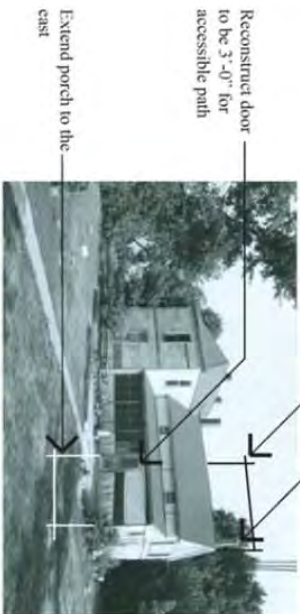


Farmhouse ca. 1935



Farmhouse during 1984 work

Remove 1-story addition, porch & chimney



Farmhouse ca. 1983

Reconstruct door to be 3'-0" for accessible path

Extend porch to the east



TRUMAN FARM

ALTERNATIVE 3B, Restoration 1957 - Buildings

July 25, 2012

ANDERSON HALLAS ARCHITECTS, PC



Alternative 3B Architecture

EVALUATION

Choosing by Advantages Evaluation Factors

As the first task of the Evaluation Phase, the Study Team developed and discussed the factors which would be used to evaluate the alternatives. The team then defined variables and subfactors under each Objective/Factor heading to tailor the evaluation factors to the specific needs of the project.

The NPS has standardized the Objectives and Factors for all VAs. This was based on a service-wide priority setting process, grown out of the National Leadership Council guidance and formed as a framework for evaluation of all VAs. Established Objectives and Factors 1 through 7 are shown on the next page.

Objectives, factors and subfactors which represent the mission of the National Park Service were evaluated for their applicability to this project. Those that were retained by the VA Team framed the attributes that ultimately determined advantages among the four alternatives. Objectives, factors and subfactors as defined by the VA Team included:

NPS Objective: Protect Cultural and Natural Resources

Factor #1: *Preserve Maximum Historic Fabric and Archeological Remains* – This factor spoke to the retention of existing historic fabric and known and unknown archeological resources. Alternatives that removed historic features or disrupted existing grade, associated with the Period of Significance, did not score as well as those which retained historic features and grade.

Factor #2: *Convey Harry S Truman Relationship with Truman Farm* – Truman's association with farm evolved but in general fell into three time periods and categories:

- 1906-1917: When Truman lived on the farm, took over primary responsibility for its operation and was intimately involved with its day-to-day operation
- Presidential Years: When Truman continued to play an active role in the farm's management and oversight through communications (letters to his brother Vivian)
- Post-Presidential Years (up until 1965): When Truman presided over the sale of the farm acreage and influenced new, commercial development of those areas

Alternatives that provided opportunities to connect to these three periods through both on-site and off-site resources tended to score better than those that focused solely on one story.

NPS Objective: Provide for Visitor Enjoyment

Factor #3: *Create Opportunities for Partnerships by Providing Multiple Activities and Experiences and by Engaging Visitors on All Sensory Levels (Sight, Sound, Touch and Smell) Associated with a Farm Setting* – One of the park's project goals is to foster partnerships to help staff maintain, interpret and activate the site. Master gardeners (who are already active at the Truman Home), volunteers from the Town of Grandview, 4-H chapters, Boy Scouts, Future Farmers of America, etc. represent potential partners for these roles. The alternatives that offered a multitude of activities, experiences, sights, smells, textures, etc.

provided the kind of environment that sustain volunteer interest in the site and scored better than those offering little variety.

Factor #4: *Link the Visitor to the Cultural Landscape at Orientations* – All of the alternatives develop the former paint store and adjacent site to serve as the new visitor orientation area. Parking will be provided in various configurations around the paint store and a pedestrian path will provide access to the farm from the new visitor contact area. Being able to experience the quiet, bucolic nature of the farm, from these two areas is an important aspect of the visitor’s initial understanding of the site.

Factor #5: *Accommodate ABAAS* – All of the alternatives accommodate mobility-challenged visitors, but some achieved greater levels of accessibility than others. Both visitor experience and code compliance are affected by this factor. Those alternatives that provided more accessible pedestrian routes through the site and more accessible buildings scored better under this factor.

Factor #6: *Control Site Access, Enhance Site Security* – On occasion, park staff have noticed vagrants, sleeping in the treed area at the rear (easternmost) area of the farm site. There have been a few instances of vandalism of the buildings, as well. Key to the protection of the buildings, site, visitors and staff is the minimization of “places to hide.” Those alternatives that did not provide parking behind the paint store and that did not introduce new buildings (e.g. maintenance shed) to the east side of the site scored better under this factor.

Factor #7: *Minimize Walking Trails to Heavily Vegetated Areas (Safety)* – Similar to the previous factor, this factor spoke to the issue of visitor safety and the importance of not providing hiding areas close to visitor walking paths. Those alternatives that maintained a comfortable distance between treed areas and paths scored better under this alternative.

Factor #8: *Provide Supportive Evidence to Justify Treatment* – Authenticity is a primary goal of NPS interpretation. Two of the alternatives took a restoration approach – one to 1917 (when Harry lived on the farm) and the second to the 1950s (when Harry was still actively involved in the farm’s disposition). Restoration to either of these periods would be speculative (in the case of the 1917 restoration) and somewhat speculative (in the case of the 1950s restoration) due to the lack of either extant or date-specific, thorough photographic documentation. Therefore, neither of these alternatives scored as well as those alternatives that took a broader, rehabilitation approach to treatment and the site’s interpretation.

Factor #9: *Provide Opportunities for Non-Personal Interpretation* – The park has limited staff resources to manage, guide and provide interpretation for the site. Wayside signage along the various walking paths in the alternatives, offer non-personal interpretation for the site, serving to activate it while providing education, even when the buildings are not open to the public. The alternatives that provided such wayside opportunities scored better under this factor than those that included a minimal number of wayside moments and spaces.

NPS Objective: Improve Efficiency of Park Operations

Factor #10: *Create an Easily Maintainable Site* – Similarly to previous factor, this factor considered the amount of staff time it will take to care for the site. Those alternatives that required fewer mowing, snow removal, gardening, etc. activities scored better than those alternatives that required extensive amounts of maintenance efforts.

Choosing by Advantages Matrix

The four alternatives were evaluated using the Choosing by Advantages process, where decisions are based on the importance of advantages between alternatives. The evaluation involves the identification of the attributes or characteristics of each alternative relative to the evaluation criteria, a determination of the advantages for each alternative within each evaluation factor, and then the weighing of importance of each advantage.

The paramount advantage, across factors, was determined and assigned a weight of 100. Remaining advantages were rated on the same scale. Construction and life cycle costs were developed for each alternative. The Preferred Alternative was identified by the balance of cost and importance.

The evaluation matrix, which documents the basis for evaluating the alternatives, is on the next page and the cost estimate is located in Appendix C. The evaluation matrix presents many types of information. Attributes of an alternative are shown above the dotted line in the matrix while advantages between alternatives are shown below the dotted line. An anchor statement summarizes those advantages. The advantage with the highest importance within a factor is indicated by a heavy circle around the advantage cell. The advantages are all rated on a common scale.

Harry S Truman National Historic Site

Choosing by Advantages Matrix for Truman Farm CLR/HSR/EA

FACTOR	ALTERNATIVES							
	Alternative 1		Alternative 2		Alternative 3A		Alternative 3B	
	Rehab Family Farm		Rehab Farm, City, Nation		Restore ca. 1917		Restore ca. 1957	
PROTECT CULTURAL AND NATURAL RESOURCES								
FACTOR 1 - Preserve Historic Fabric (Max) and Archeological Remains								
Attributes	Keeps All Existing Historic Fabric and Arch. Remains		Keeps All Existing Historic Fabric and Arch. Remains		Removes 1950s road, light posts, stone posts and regrades site.		Keeps All Existing Historic Fabric and Arch. Remains	
Advantages	Retains 95%	95	Retains 100%	98	Retains 60%	0	Retains 100%	97
FACTOR 2: Convey HST Relationship with Truman Farm								
Attributes	Conveys 3 periods of HST's life		Conveys 3 periods of HST's life		Conveys 1 period of HST's life		Conveys 3 periods of HST's life	
Advantages	100%	81	100%	85	33%	0	100%	85
PROVIDE FOR VISITOR ENJOYMENT								
FACTOR 3 - Provide Opportunities for Partnerships / Engage the Visitors in Multiple Activities/Experience /Engage the Visitor @ Multiple Sensory Levels (Sight/Sound/Touch/Tactile/Smell) in a Farm Context								
Attributes	1 space to Partner (grass)		5 spaces to Partner (Garden, crops, rose arbor, gathering space Garage)		2 spaces to Partner (Garden, gathering space)		2 spaces to Partner (Rose arbor, gathering space)	
Advantages	1 Space (least)	0	5 Spaces (most)	96	2 Spaces	40	2 Spaces	40
FACTOR 4 - Link the Visitor to the Cultural Landscape at Orientation								
Attributes	Orientation at midpoint compromises view/character ; visual congestion between orientation and site; shortest path of travel		Direct visual and pedestrian link between VC and site/ Full un-interrupted view from west		Discontinuous ped link from VC; Visual congestion at Orientation view from west @ plaza		Discontinuous ped link from VC; Visual congestion from Orient	
Advantages	(0) Poor Linkage	0	(2) Best	90	(2) Best	92	(1) Somewhat Linked	50
FACTOR 5 - Accommodate ABAAS								

Attributes	1 Building accessible; ABA Parking at Orientation and House; ABA path to House & Garage.		2 Buildings accessible; ABA Parking at Orientation; ABA path to House, Garage, Barnyard, East edge 1950s road.		0 Buildings accessible; ABA parking at Orientation; ABA path to House, Garage & Barnyard		1 Building accessible; ABA Parking at Orientation; ABA path to House, Garage, Barnyard, East edge 1950s road & south edge.	
Advantages	Moderately Accessible	58	Best	83	Least Accessible	0	Best	79
FACTOR 6 - Control site access/enhance site security								
Attributes	No Security Concerns/Site ; but public behind VC		No Security Issues		No Security Concerns/Site ; but public behind VC		Maintenance Facility Location/ public behind VC	
Advantages	1 Issue	45	0 Issues (Best Control)	82	1 Issue	45	2 Issues Least Secure	0
FACTOR 7 - Minimize walking trails to heavily vegetated areas (safety)								
Attributes	Potential Risk b/c of vegetation in site adjacent to trail		No added risk		No added risk		Trail near south side vegetation	
Advantages	Least Secure	0	No trails (Most secure)	72	No trails (Most secure)	77	Least Secure	0
FACTOR 8 - Provide Supportive Evidence to Justify Treatment								
Attributes	Supportable		Supportable		Speculative		Somewhat Speculative	
Advantages	Best	78	Best	78	Least	0	Moderate	36
FACTOR 9: Provide opportunities for non-personal interpretation								
Attributes	7 oppt'y (Orientation, Gravel Drive, House, Garage, Barnyard, East Trail, 1950s Road)		11 oppt'y (Orientation, Gravel Drive, Garden, Barnyard, East Path, House, Garage, 1950s Road, Crops, Path to Barnyard, Truman Corners Interp.)		6 oppt'y (Orientation, Drive, House, Garage, Path to Barn, Barnyard)		9 oppt'y (Orientation, drive, House, Garage, Gravel Path, Barnyard, east trail, south trail 1950s road)	
Advantages	7 oppt'y	60	11 oppt'y (most)	100	6 oppt'y (least)	0	9 oppt'y	80
IMPROVE EFFICIENCY OF PARK OPERATIONS								
FACTOR 10 - Create an Easily Maintainable Site								

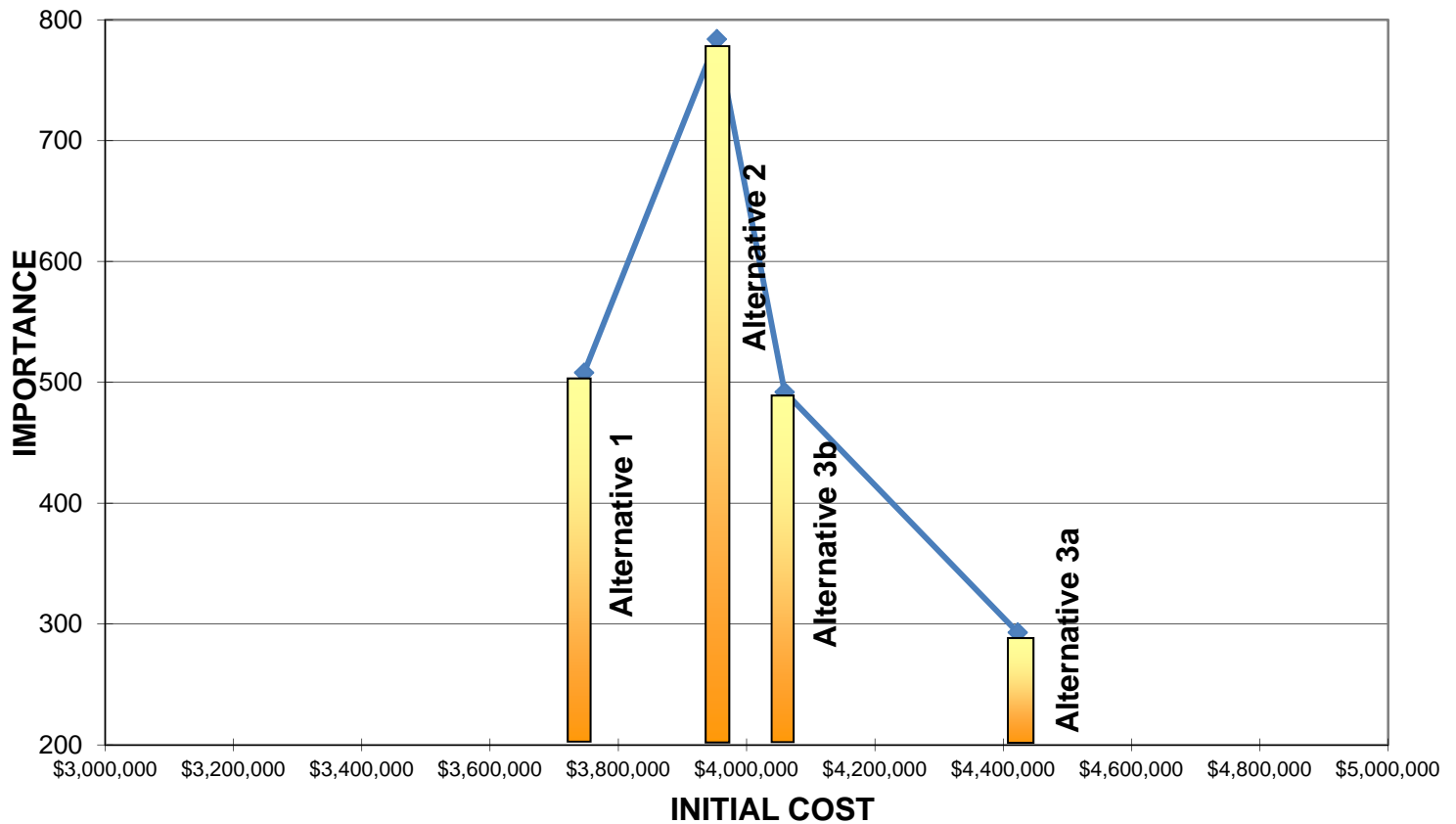
Attributes	· Grass Mowing and Mown Path = 4.5 acres; Snow removal = 2 paths; Establish Native = 5 acres		· Grass Mowing and Mown Path = 3.5 acres(8hrs per week); Gardening .5 acre; Snow removal = 2 paths and Barnyard; (Crop, Planting and Harvesting)		· Grass Mowing and Mown Path = 1 acre; Snow removal = 1 path; Establish Native = 8 acres; Garden .5 acres		· Grass Mowing and Mown Path = 5 acres; Snow removal = 3 paths + Barnyard+ Main Area; Establish Native = 5 acres;	
Advantages	1 Level of Effort	91	5 Level of Effort	0	3 Level of Effort	39	4 Level of Effort	25
TOTAL IMPORTANCES OF ADVANTAGES	Alt. 1	508	Alt. 2	784	Alt. 3A	293	Alt. 3B	492
Initial Cost (Net)	\$ 3,578,640		3,558,856		4,135,514		3,867,839	
Re-design Cost								
Compliance								
Life Cycle Cost (Net)	168045		394752		287152		191423	
TOTAL	3,746,685		3,953,608		4,422,666		4,059,262	

ANALYSIS

The VA Team evaluated the benefit or importance of advantages among all four alternatives. Initial cost estimates for the four alternatives were applied. Results were graphed with importance or benefit on the vertical scale and net construction and life cycle costs on the horizontal scale. Alternative 2 emerged as the Preferred Alternative.

CBA IMPORTANCE TO INITIAL COST GRAPH

Truman Farm- HSR / EA



RECONSIDERATION PROCESS

The Study Team reviewed high-scoring attributes of Alternatives 1, 3A and 3B to see if any of these could be incorporated into Alternative #2, the Preferred Alternative (PA). They also discussed design enhancements and developed the following list for consideration:

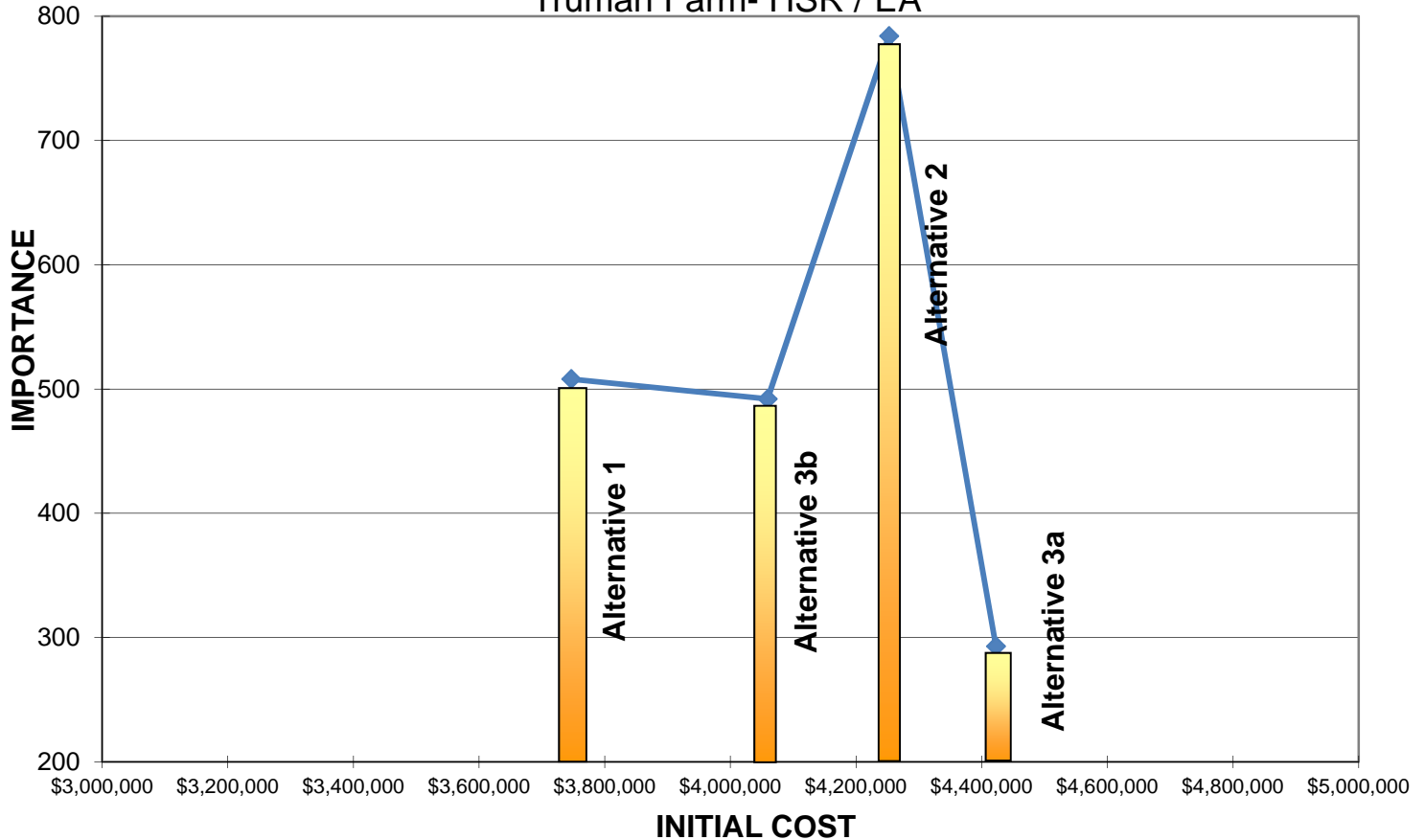
- Partial berm removal, eliminate stairs at east, and underground electric at road (+\$125,000)
- De-emphasize the 1950s road bed, 12' max width
- Crusher fines paving and regarding if the 1950s road (+\$86,400)
- Add south loop trail as a mown path and add some interpretive value waysides
- No pavilion as proposed
- New building for Maintenance Needs at farm site, but not in Paint Building
- Provide space for volunteers
- Add benches
- Create a vegetation buffer/signage at orientation space from parking area; study fill
- Add fencing as contemporary interpretation (not post and wire style) (+\$25,126 for perimeter fencing; +\$3,000 for gate at east end;+ \$46,800 for perimeter screen fence on the south end)
- Add designated bike parking pad
- Consider geexchange and PV for Paint Store
- Add crusher fines paving in the barnyard (+\$12,600)

This resulted in a new total cost and resultant graphs for the Preferred Alternative.

TOTAL IMPORTANCES OF ADVANTAGES	Alt. 1	508	Alt. 2	784	Alt. 3A	293	Alt. 3B	492
Initial Cost (Net)	\$ 3,578,640		3,857,782		4,135,514		3,867,839	
Re-design Cost								
Compliance								
Life Cycle Cost (Net)	168045		394752		287152		191423	
TOTAL	3,746,685		4,252,534		4,422,666		4,059,262	

CBA IMPORTANCE TO INITIAL COST GRAPH - RECONSIDERATION

Truman Farm- HSR / EA



IMPLEMENTATION & NEXT STEPS

The Design Team will proceed with development of the Preferred Alternative. The overall project schedule is as follows:

DESCRIPTION	DURATION	DATE
NPS Review of Draft VA Report & CLR (Park & MWRO)	30 days	8/29-10/1/12
Revise Doc from 95% Comments	3 weeks	
Submit 100% File for Public Review		10/23/2012
File Processing to post (NPS)	1 week	10/23-10/30/12
Public Review of 100% Draft	30 days	10/30-11/29/12
Generate FONSI (ERO)	15 days	12/13/2012
NPS Review of FONSI	15 days	12/28/2012
Issue Final CLR/HSR/EA to NPS	1 day	1/11/2013

This report completes the Value Analysis process for this project.

VALUE ANALYSIS TEAM

NAME	TITLE	PHONE	EMAIL ADDRESS
Bill Harlow	Historical Architect, NPS MWRO	402.661.1930	Bill_Harlow@nps.gov
Marla McEnaney	Historical Landscape Architect, NPS MWRO	906.235.7407	Marla_McEnaney@nps.gov
Al O'Bright	Historical Architect, NPS	314.842.1047	Al_O'Bright@nps.gov
Larry Villalva	Superintendent, Harry S Truman NHS	816.254.2720	Larry_Villalva@nps.gov
Carol Dage	Museum Curator, Harry S Truman NHS	816.254.2720	Carol_Dage@nps.gov
Kristen Stalling	Museum Tech, Harry S Truman NHS	816.254.2720	Kristen_Stalling@nps.gov
Marie Sigafoos	Administrative Officer, Harry S Truman NHS	816.254.2720	Marie_Sigafoos@nps.gov
Mike Ryan	Chief of Interpretation, Harry S Truman NHS	816.461.5550	Mike_T_Ryan@nps.gov
Greg Wolcott	Facility Operations Specialist, Harry S Truman NHS	816.833.4528	Greg_Wolcott@nps.gov
CONSULTANTS			
Tina Bishop	Mundus Bishop	303.477.5244	tina@mundusbishop.com
Shelby Scharen	Mundus Bishop	303.477.5244	shelby@mundusbishop.com
Liz Hallas	Principal, Anderson Hallas Architects, PC	303.278.4378	elizabethhallas@andarch.com
Nan Anderson	Principal, Anderson Hallas Architects, PC	303.278.4378	nananderson@andarch.com

APPENDICES

- A. VA Agenda
- B. VA Meeting Minutes
- C. Class C Cost Estimates *Gztcevgf "vq"Cr r gpf k z "H'qh'yj g"Vtwo cp"Hcto "ENT II UT IGC+
 - Alternative 1
 - Alternative 2
 - Alternative 3a
 - Alternative 3b



Appendix A: Value Analysis Agenda

Agenda

HSTR – Truman Farm CLR/HSR/EA Treatment Alternatives VA

Value Analysis

Independence Room / Truman Library and Museum

July 25-26, 2012

(Independence, MO)

WEDNESDAY

- | | | |
|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| 8:30 | Information | (15 minutes) |
| | <ul style="list-style-type: none">- Introductions- Review Agenda/Describe Intent/VA Outcome(s)- Identify Project Stakeholders | |
| 8:45 | Project Purpose | (45 minutes) |
| | <ul style="list-style-type: none">- Program- Goals and Objectives for Treatment- Create Functional Analysis System Technique (FAST) Diagram<ul style="list-style-type: none">a. Focus on the "Why?" and "How?" | |
| 9:30 | BREAK | (15 minutes) |
| 9:45 | Presentation of the Treatment Alternatives | (1 hr/45 min) |
| | <ul style="list-style-type: none">- "Common to All"- Alternative 1- Alternative 2- Alternative 3A- Alternative 3B- Other Alternative(s)? | |
| 11:30 | LUNCH | (1 hour) |
| 12:30 | Choosing by Advantages | (2 hrs/30 min) |
| | <ul style="list-style-type: none">- Review NPS Objectives & Factors- Develop Subfactors | |
| 3:00 | BREAK | (15 min) |
| 3:15 | Choosing by Advantages | (1 hr/45 min) |
| | <ul style="list-style-type: none">- Finalize Subfactors- List Attributes of Each Alternative, Under Each Subfactor- Score Advantages of Each Attribute (if time allows) | |
| 5:00 | ADJOURN | |

Agenda

HSTR – Truman Farm CLR/HSR/EA Treatment Alternatives VA

Value Analysis

Independence Room / Truman Library and Museum

July 25-26, 2012

(Independence, MO)

THURSDAY

8:30 Choosing by Advantages, cont'd. (1 hr/30 min)

- Continue Scoring of Each Alternative
- Insert Scores & Costs into Importance / Cost Graph

10:00 BREAK (15 min)

10:15 Reconsideration (1 hr/45 min)

- Review High Scoring Attributes for Alternatives for Possible Incorporation into “Preferred Alternative”
- Next Steps

12:00 ADJOURN

NPS Objective	Factor
Protect Cultural & Natural Resources	1. Prevent Loss of Resources
	2. Improve Condition of Resources
Provide for Visitor Enjoyment	3. Provide Visitor Services, Education & Recreational Opportunities
	4. Protect Public Health, Safety & Welfare
Improve Efficiency of Park Operations	5. Improve operational efficiency & sustainability
	6. Protect Employee Health, Safety & Welfare
Provide Cost Effective, Environmentally Responsible & Otherwise Beneficial Development for the NPS	7. Provide other advantages to the NPS

Next Steps:

VA Report Generation	Due to NPS on 8/28/12
Revisions for 95% report based on preferred alternative	Due to NPS on 8/28/12
NPS Review (Park and MWRO)	8/29-10/1/12

Appendix B: Value Analysis Meeting Minutes

MEETING MINUTES

Date: July 25 & 26, 2012
Project: Truman Farm; VA Meeting
Participants: Bill Harlow, NPS MWRO
Marla McEnaney, NPS MWRO
Al O'Bright, NPS
Larry Villalva, NPS
Carol Dage, NPS
Mike Ryan, NPS
Greg Wolcott, NPS
Elizabeth Hallas, Anderson Hallas
Nan Anderson, Anderson Hallas
Tina Bishop, Mundus Bishop
Shelby Scharen, Mundus Bishop

Identification of Project Stakeholders:

- Grandview Chamber of Commerce
- Jackson County Historical Society/J.C. Parks/Rec.
- Grandview Historical Society
- City of Grandview/Schools
- Missouri State Parks
- Neighbors
- Utility easement
- Master Gardeners (8 to 18 every month)
- Eagle Scouts – could help w/ projects & site maintenance
- 4-H/FFA
- State Historical Society
- Missouri State Tourism

Maintenance:

- Storage for equipment
- Remove existing storage shed
- Year-round function = increased staffing need
- Adequate Staffing Needed; Requires 3 people, w/ visitor contact center

Interests

- Tourism; economic driver

- Multi-agency visitor center
- Mitigate empty storefront
- Educational opportunities for field trips/ junior ranger programs
- Activate the site
- Tours
- Paint store redevelopment
- Security/Appearance

Program

- Already have cell phone tour
- Opportunity to create additional printed media/create site bulletin
-

Goals & Objectives

- Truncated site and edges – doesn't look like a farm; how do we convey the site as a farm
- Continue development of partnerships
- Reflect museum collections/no additional collections wanted at the Farm
- Paint store has room for small monitors, no room for meeting space
- Opportunity for public/community engagement

Common to All Alternatives

- Need to add: Screen east end of site; Front door of site needs to be from west
- New gate at entrance road needs to be moved in (east) for safety

Comments on Alternatives:

- City will dislike tall grasses in south field (already receives complaints), will need to negotiate this with the City
- Proposed bike path/pedestrian path through site, part of City of Grandview's 2010 Trails Master Plan. Could provide access for crime (graffiti, vandalism)
- Add gate at back of 1950s road for security
- Compacted soil/dirt will track into the Farm Home
- Possibility of rebuilding granary?
- Paths- require winter maintenance
 - Alt 1 = 30,540sf paths
 - Alt 2 = 54,010sf paths
 - Alt 3a = 15,850sf paths
 - Alt 3b = 60,650sf paths

Appendix C: Class C Cost Estimate"

Uco g'Equ'Gu'ko cyg"cu'kpenw gf "kp"vj g"Vtwo cp"Hcto "ENTW UTIGC."Crr gpfkz""H"Rtghgttgf'Equ'Gu'ko cyg

"

"

**National Park Service
U.S. Department of the Interior**



**Harry S Truman National Historic Site – Truman Farm
Missouri**

HARRY S TRUMAN NATIONAL HISTORIC SITE TRUMAN FARM CULTURAL LANDSCAPE REPORT HISTORIC STRUCTURE REPORT ENVIRONMENTAL ASSESSMENT FINDING OF NO SIGNIFICANT IMPACT

BACKGROUND

The Harry S Truman National Historic Site (NHS or park) was authorized by an act of Congress on May 23, 1983 (Public Law 98-32). The Truman Farm is located in the Grandview Unit of the Harry S Truman National Historic Site and was authorized for acquisition by Congress on December 14, 1993. The Truman Farm is significant because of its association with Harry S Truman, President of the United States from 1945 to 1953. The NHS is administered and maintained by the National Park Service (NPS).

The NPS has completed the combined Harry S Truman National Historic Site Truman Farm Cultural Landscape Report, Historic Structure Report, and Environmental Assessment (CLR/HSR/EA), one purpose of which is to document the condition and development of the Truman Farm including its building, structures, and landscape, and to provide guidance on preserving those qualities that best convey the historical significance and association with President Truman. This includes developing a series of treatment (action and no action) Treatment Alternatives that provide guidance on integrating visitor, administrative, and maintenance facilities within the cultural landscape to provide a comprehensive and authentic experience.

The CLR/HSR/EA is needed to address deficiencies in the condition of the building, structures, and grounds of the Truman Farm; preserve the historically significant farmhouse, structures, and landscape features that convey its agrarian sense of place; and improve interpretation of the site to maximize the visitor experience.

The Harry S Truman National Historic Site General Management Plan (GMP) directed a limited restoration treatment for the Truman Farm, and the Long Range Interpretive Plan (LRIP) provides a vision for media and programs best suited for meeting visitor needs, achieving management goals, and telling the story of the Truman Farm. The CLR/HSR/EA

builds on the GMP and LRIP and provides recommendations on the repair, protection, and stewardship of the Truman Farm and its contributing features, including evaluating the physical opportunities and constraints of each Treatment Alternative. The CLR/HSR/EA includes a no-action Treatment Alternative and four action Treatment Alternatives: Treatment Alternative 1 – The Family Farm; Treatment Alternative 2 – Farm, City, Nation (selected Treatment Alternative); Treatment Alternative 3A – Restoration to 1917; and Treatment Alternative 3B – Restoration to 1957.

This finding of no significant impact (FONSI) and the CLR/HSR/EA constitute the record of the environmental impact analysis and decision-making process associated with selecting and implementing the selected Treatment Alternative, which defines treatment for the Truman Farm cultural landscape and historic buildings as well as provides recommendations for connectivity with future planned visitor and management facilities. The selected Treatment Alternative includes measures to protect cultural resources, improve visitor enjoyment, and provide long-term conditions necessary to sustain natural and cultural resources. The selected Treatment Alternative was selected after careful review of resource and visitor impacts and public comment.

This document records 1) a FONSI as required by the National Environmental Policy Act of 1969 (NEPA), and 2) a determination of no impairment as required by the NPS Organic Act of 1916.

TREATMENT ALTERNATIVES CONSIDERED

No Action Treatment Alternative

The no action Treatment Alternative provides a basis for comparison with the action Treatment Alternatives, including the selected Treatment Alternative, and with the respective environmental consequences.

Under the no action Treatment Alternative, the present level of use, management, interpretation, operations, and maintenance would continue. As identified in the 1999 Revised GMP, the no action Treatment Alternative would include removing nonhistoric features and developing the recently acquired building and land of Tract 3, a parcel that was part of the original Truman Farm lands.

As noted in the park's GMP, the building on Tract 3 would be converted for use for visitor facilities including restrooms and drinking fountains, and a sales area. Parking for visitors and park staff would be accommodated in an improved parking area on this site, and the existing drive and parking lot at the Truman Farm would be eliminated.

The Farmhouse would continue to accommodate the visitor program at its current level, including visitor orientation and sales. For the short term, the site would also continue to accommodate the administrative and maintenance program by continuing to use the

Farmhouse for administration, and the nonhistoric shed for storage and maintenance functions.

Administrative and maintenance facilities would continue to expand as needed. Stabilization and preservation of the Farmhouse, Garage, and Poultry House buildings would continue as part of the no action Treatment Alternative.

Action Treatment Alternatives

The action Treatment Alternatives have common goals and objectives and some common basic treatment recommendations. Because these aspects of the Treatment Alternatives do not differentiate between the Treatment Alternatives, the discussion of the action Treatment Alternatives is focused on general recommendations unique to each Treatment Alternative.

Treatment Alternative 1 – The Family Farm

Treatment Alternative 1 would convey the introspective story of the evolution of the Truman family farm from Solomon Young's original homestead through the time the Truman family lived, managed, or otherwise had a direct connection with the farm. A treatment approach of rehabilitation is proposed under this Treatment Alternative, and would focus on repairing extant contributing features and reestablishing the farm's historic character through acceptable preservation practices.

As a rehabilitation approach, Treatment Alternative 1 includes preservation of all extant contributing features (within the period of significance of 1906 to 1965), and the addition of new compatible features. With so many missing features and just a few additions, Treatment Alternative 1 provides an authentic experience, but does not fully convey vibrancy of farm life. In addition to repair of extant features, more interpretive media would be used to convey the full story.

Treatment Alternative 1 is compatible with the LRIP in that it conveys Primary Theme 1 as it conveys events of Harry S Truman's presidency, and Primary Theme 8 as reflective of President Truman's character learned from his time on the farm.

Treatment Alternative 2 – Farm, City, Nation (Selected Treatment Alternative)

Treatment Alternative 2 is the selected Treatment Alternative and recommended treatment for the Truman Farm. This Treatment Alternative follows a rehabilitation approach for the historic buildings and cultural landscape that will allow for compatible use and provide for restoration, repair, alteration, and additions to the Truman Farm while also preserving those features that convey the historical and cultural values of the historic site. This Treatment Alternative was selected as the selected Treatment Alternative during the Value Analysis/Choosing by Advantages process in July 2012.

In general, the selected Treatment Alternative recommends rehabilitation of the Truman Farm to provide a holistic visitor experience where extant contributing features are repaired, missing features are restored, and new compatible features are added. The rehabilitation approach is well suited to preserving the Truman Farm and its contributing features while ensuring the site offers the contemporary visitor a multitude of tactile, sensory, and kinetic experiences.

The selected Treatment Alternative is compatible with the period of significance of 1906 to 1967 as it recommends conveying the broad story of Harry S Truman—his character and the influence he had on agriculture, commerce, and politics—from his early years through his presidency and after he left office. The selected Treatment Alternative recommends telling this story through the rehabilitation of his family farm and through interpretation of the farm's immediate setting and broader surroundings as a place that was heavily influenced by President Truman's actions and decisions.

The selected Treatment Alternative is compatible with the 1999 Revised GMP. It is also compatible with the park's LRIP as it conveys Primary Theme 1 as being a product of the events of Harry S Truman's presidency, Primary Theme 7, and Primary Theme 8 as revealing President Truman's Character Learned from His Time on the Farm.

Treatment Alternative 3A – Restoration to 1917

Treatment Alternative 3A proposes to restore the Truman Farm to the appearance of the farm between the years of 1906 and 1917 when Harry S Truman lived on the farm and managed day-to-day operations.

A treatment approach of restoration is proposed with this Treatment Alternative, and would focus on restoring contributing features and the historic setting to reflect a date near the end of the time President Truman lived on the farm. As a restoration approach, Treatment Alternative 3A would preserve those features that contribute to the period from 1906 to 1917, including buildings and structures, and the restoration of missing features from this period. This approach would also include the removal of noncontributing features (outside of this period, including some that date to other times within the period of significance).

Historical documentation for the period from 1906 to 1917 is available to a certain extent through historic photographs; however, additional information would be required to authentically restore the Truman Farm to this period, including archeological investigations. Treatment Alternative 3A proposes to tell the story of life on the farm as it would have been when President Truman lived on the farm.

This Treatment Alternative is compatible with the LRIP in that it conveys Primary Theme 8 – Truman's Character Learned from His Time on the Farm.

Treatment Alternative 3B – Restoration to 1957

Treatment Alternative 3B proposes to restore the Truman Farm to resemble the family farm as it would have looked during President Truman's lifetime. A treatment approach of restoration is proposed with this Treatment Alternative and would focus on restoring contributing features and the historic setting to reflect a date near the end of the period of significance. Restoration to this date would convey the appearance of the farm as President Truman would have known it.

The site has the most contributing features and available historical documentation for 1957 and the farm retains the most integrity for 1957. As a restoration approach, Treatment Alternative 3B proposes preservation and restoration of all extant contributing features, and restoration of contributing features and historic setting to reflect a date near the end of the period of significance. This would include the original sugar maple grove (now modified) and the Solomon Young barn, both in existence in 1957. This approach would also include the removal of noncontributing features (outside of this period, including some that date to other times within the period of significance).

Treatment Alternative 3B is compatible with the LRIP in that it conveys Primary Theme 8 – Truman's Character Learned from His Time on the Farm, and Primary Theme 8 – Truman's Character Learned From His Time on the Farm.

ENVIRONMENTALLY PREFERABLE TREATMENT ALTERNATIVE

The NPS determined that the selected Treatment Alternative is also the environmentally preferable Treatment Alternative because the selected Treatment Alternative surpasses the no action Treatment Alternative and action Treatment Alternatives 1, 3A, and 3B by realizing the full range of national environmental policy goals as stated in section 101 of NEPA. The goals are to:

- (1) Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
- (2) Assure for all Americans safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
- (3) Attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;
- (4) Preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity and variety of individual choice;
- (5) Achieve a balance between population and resource use, which will permit high standards of living and a wide sharing of life's amenities; and

- (6) Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

Treatment Alternative 2, the selected Treatment Alternative, is similar to Treatment Alternative 1 but would include rehabilitating more structures and landscape features and would better improve visitor access, use, and understanding (goals 1, 2, 3, 4, and 5). Treatment Alternative 2 would meet many of the NEPA section 101 goals and would better protect, preserve, and enhance historic resources than the no action Treatment Alternative or other treatment Alternatives. Treatment Alternative 2 meets the provisions of NEPA section 101 goals for the reasons described below.

WHY THE SELECTED TREATMENT ALTERNATIVE WOULD NOT HAVE A SIGNIFICANT EFFECT ON THE HUMAN ENVIRONMENT

The intensity or severity of impacts resulting from implementing the selected Treatment Alternative is evaluated using the 10 criteria listed in 40 Code of Federal Regulations (CFR) § 1508.27. Key areas in which impacts were evaluated include historic structures and cultural landscapes, archeological resources, vegetation, visitor experience, park operations, and visual resources. As defined in 40 CFR § 1508.27, significance is determined by examining the following criteria.

Impacts that May be Both Beneficial and Adverse; a Significant Effect May Exist Even if the Park Service Believes that on Balance the Effect Would be Beneficial

The selected Treatment Alternative will result in both beneficial and adverse impacts. In general, the project provides long-term beneficial effects on historic structures and cultural landscapes, visitor experience, and park operations. The benefits to historic structures and cultural landscapes will result from rehabilitating the NHS buildings and associated landscape features. The benefits to visitor experience and park operations will result from conversion of the building on Tract 3 into new visitor and maintenance facilities that will increase interpretive opportunities, meet current building codes, and provide a safe environment for visitors and park staff.

Adverse impacts on archeological resources, cultural landscapes, vegetation, and visual resources will be short-term and minor and will result from the construction activities within the Truman Farm. Mitigation measures, as listed in table 1, will minimize adverse effects. A summary of resource effects is found in table 4 of the CLR/HSR/EA.

Degree of Effect on Public Health or Safety

Public health and safety will benefit from the construction of new visitor facilities by meeting current fire and electrical safety and building codes and complying with Occupational Safety and Health Administration workplace safety standards. The new visitor facility will meet

Americans with Disabilities Act standards for universal accessibility. The new visitor and maintenance facilities also will provide an improved work environment for park staff and is expected to have a positive effect on employee morale. In addition, a number of safety measures will be implemented during construction to protect visitors, park staff, and construction workers. Orange barricade fencing will be used to limit visitor access to construction areas. Staging and access areas will be located to avoid creating conflicts with ongoing park operations and visitor access. Maintaining a safe environment for park staff, contractors, and visitors during and after construction will be a primary objective.

Unique Characteristics of the Geographic Area such as Proximity to Historic or Cultural Resources, Monument Lands, Prime Farmlands, Wetlands, Wild and Scenic Rivers, or Ecologically Critical Areas

As described in the CLR/HSR/EA, the selected Treatment Alternative will not affect prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas. There may be minor adverse effects on archeological resources during activities associated with rehabilitating structures and landscape, which may expose previously unknown archeological resources. Monitoring for subsurface artifacts will be conducted during ground-disturbing activities in the park. The selected Treatment Alternative will also have short-term minor adverse effects on cultural landscapes during implementation of recommended treatments, and long-term minor adverse effects on vegetation from ground-disturbing activities and tree removal. The selected Treatment Alternative will have beneficial effects on historic structures, cultural landscapes, and visual resources.

Degree to Which Effects on the Quality of the Human Environment are Likely to be Highly Controversial

The selected Treatment Alternative is not highly controversial. No issues arose during the preparation of the CLR/HSR/EA from park staff and no issues were brought to the park's attention during the public review period that indicated a dispute with either the methods or results of the analysis of topics.

Degree to Which the Possible Effects on the Quality of the Human Environment are Highly Uncertain or Involve Unique or Unknown Risks

No highly uncertain, unique, or unknown risks were identified during the preparation of the CLR/HSR/EA or the public review period.

Degree to Which the Action may Establish a Precedent for Future Actions with Significant Effects or Represents a Decision in Principle about a Future Consideration

The selected Treatment Alternative will not have a significant effect and does not establish a precedent for future actions with significant effects. Furthermore, the level of development at

this site proposed by the selected Treatment Alternative is within the guidelines set by the GMP.

Whether the Action is Related to Other Actions with Individually Insignificant but Cumulatively Significant Impacts

The CLR/HSR/EA concluded that past, present, and future activities, when coupled with the selected Treatment Alternative, will have local long-term minor to major beneficial cumulative effects and local long-term minor to moderate adverse cumulative effects. No significant adverse cumulative effects were identified. Likely future actions taken individually or collectively under the GMP as currently written will result in no more than local moderate adverse cumulative impacts on the human or natural environment.

Degree to Which the Action may Adversely Affect Districts, Sites, Highways, Structures, or Objects Listed on the National Register of Historic Places; or May Cause Loss or Destruction of Significant Scientific, Cultural, or Historical Resources

The selected Treatment Alternative will have a moderate beneficial effect on historic structures and cultural landscapes resulting from implementing the treatment recommendations and will not diminish the overall integrity of the cultural landscape. The Park Service initiated consultation with the Missouri State Historic Preservation Office (SHPO) on September 4, 2012, with submittal of a letter notifying the SHPO that the Park Service was initiating the CLR/HSR/EA process. The SHPO was also notified of the availability of the completed CLR/HSR/EA for comment. On March 25, 2013, the SHPO concurred with the NPS determination that the project will not adversely affect any historic properties.

Degree to Which the Action May Adversely Affect an Endangered or Threatened Species or its Critical Habitat

No federally listed plant or animal species are known within the park boundaries. Park staff sent a section 7 coordination letter to the U.S. Fish and Wildlife Service on September 4, 2012, notifying the Fish and Wildlife Service that the Park Service had determined that no threatened or endangered species habitat is present at Truman Farm and requesting information on species from the Fish and Wildlife Service. The Fish and Wildlife Service responded in an October 16, 2013 letter to the Park Service that Fish and Wildlife Service should be contacted for further consultation if forested areas cannot be cleared during the hibernation period of Indiana bats (November 1 to March 31) or more than 10 acres of trees will be cleared. Because the Park Service will perform any needed tree and shrub removal between November 1 and March 31 and less than 10 acres of trees will be cleared, further consultation with Fish and Wildlife Service is not necessary.

Whether the Action Threatens a Violation of Federal, State, or Local Environmental Protection Law

The selected Treatment Alternative violates no federal, state, or local environmental protection law.

MITIGATION MEASURES

A number of mitigation measures and best management practices (BMPs) will be incorporated into the project design for the selected Treatment Alternative to minimize the degree and/or severity of adverse environmental impacts (table 1).

Table 1. Mitigation Measures

Resource Area	Mitigation
General Considerations	<p>Where necessary for resource or visitor protection, work areas will be identified with construction fence, silt fence, or some similar material prior to any activity. The fencing will define the work zone and confine activity to the minimum area required. All protection measures will be clearly stated in the construction specifications, and workers will be instructed to avoid conducting activities beyond the work zone. Disturbances will be limited to areas inside the designated construction limits. No machinery or equipment will access areas outside the work limits.</p> <p>Construction equipment staging will occur within previously disturbed areas as much as possible. All staging and stockpiling areas will be returned to preconstruction conditions following construction.</p> <p>Contractors will be required to properly maintain construction equipment (i.e., mufflers and brakes) to minimize noise.</p> <p>All tools, equipment, barricades, signs, surplus materials, and rubbish will be removed from the project work limits upon project completion.</p>
Vegetation and Wildlife	<p>All disturbed ground will be reclaimed using appropriate BMPs including planting native plants.</p> <p>Until the soil is stable and vegetation is established, erosion-control measures will be implemented to minimize erosion and prevent sediment from leaving the site.</p> <p>Temporary barriers will be provided to protect existing trees and shrubs that are not identified for removal.</p> <p>To comply with the Endangered Species Act and Migratory Bird Treaty Act, trees and shrubs will be removed during the Indiana bat hibernation and bird nonnesting season (generally between August 15 and March 31). If trees and shrubs will be removed at other times, the Park Service will coordinate with the Fish and Wildlife Service prior to removal to ensure the removal has no adverse effects on Indiana bats or migratory birds.</p>

Resource Area	Mitigation
Cultural Resources	<p>All activities will comply with the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation (48 Federal Register 44716, revised).</p> <p>Known archeological resources in the vicinity of project activities will be identified and delineated for avoidance prior to project work.</p> <p>The park will continue to coordinate with the SHPO throughout the course of the project to protect and mitigate cultural resources affected by the selected Treatment Alternative.</p> <p>Should any archeological resources be uncovered during construction, as appropriate, work will be halted in the area and the park archeologist, SHPO, and appropriate Native American tribes (if applicable) will be contacted for further consultation.</p> <p>Park cultural resource staff will be available during construction to advise or take appropriate actions should any archeological resources be uncovered during construction. In the unlikely event that human remains are discovered during construction, provisions outlined in the Native American Graves Protection and Repatriation Act (1990) will be followed.</p> <p>The Park Service will ensure that all contractors and subcontractors are informed of the penalties for illegally collecting artifacts or intentionally damaging archeological sites or historic properties. Contractors and subcontractors also will be instructed on procedures to follow in case previously unknown archeological resources are uncovered during construction.</p> <p>Equipment and material staging areas will avoid known archeological resources.</p>
Visitor Experience and Park Operations	<p>Visitors will be informed in advance of construction activities via the park website and visitor center.</p>

PUBLIC INVOLVEMENT

During preparation of the CLR/HSR/EA, the Park Service made efforts to involve the public in the planning process, including soliciting information and data from regulatory agencies. The CLR/HSR/EA was made available on the NPS Planning, Environment and Public Comment website for public review and comment between January 23, 2013 and February 23, 2013. The park did not receive any comments from the public that resulted in changes to the CLR/HSR/EA.

FINDING OF NO SIGNIFICANT IMPACT

Based on my review of the facts and analysis contained in the CLR/HSR/EA, which is incorporated herein, I conclude that the selected Treatment Alternative for the CLR/HSR/EA at the Truman Farm in the Grandview Unit of the Harry S Truman National Historic Site will not have a significant impact either by itself or in consideration of cumulative impacts. Accordingly, the requirements of NEPA, regulations promulgated by the President's Council on Environmental Quality, and provisions of NPS Director's Order-12 and Handbook (Conservation Planning and Environmental Impact Analysis and Decision-Making) have been fulfilled. Furthermore, the selected Treatment Alternative will not impair park resources or

values and will not violate the NPS Organic Act. The selected Treatment Alternative supports the enabling legislation establishing Harry S Truman National Historic Site under the NPS Organic Act with the intended purpose of preserving the scientific and public interests for future generations. An environmental impact statement is not required and will not be prepared for implementation of the selected Treatment Alternative.

Recommended:

Larry Villalva, Superintendent

Date

Approved:

Michael T. Reynolds, Regional Director

Date

RESPONSE TO COMMENTS ON THE ENVIRONMENTAL ASSESSMENT

The following contains responses to substantive comments received on the CLR/HSR /EA. No changes in the text of the CLR/HSR/EA were made as a result of these comments.

Comment (PEPC)

RE: Truman Farm Shopping Center – More appropriate siding on South side such as rough cedar for a more “farm like” look and/or row(s) of evergreens to hide.

RE: Truman Comers Shopping Center – Remove old Wards sign; plant shrubs on East Farm Home property line to be just high enough to hide current shopping center rooftops; Poplar trees (fast growing) on backside (West side) of the current Aarons store.

Longer Range Possile (sic) Proposals

RE: Truman Farm Shopping Center – Monitor occupancy for possible partial acquisition to enhance Farm Home site.

RE: Truman Comers Shopping Center – Should replacement of any current buildings be proposed, pursue design to leave the official “grand view” clear, or at least porpose (sic) low rooftops and signs unable to be seen from the Farm Home.

Response: Thank you for the comments, but the Truman Farm Shopping Center is not included in the CLR/HRS/EA.

Comment (PEPC)

REGARDING the FARM HOME SITE:

POULTRY HOUSE: (Educational Project sponsored by 4-H/University of MO Extension) Baby chicks in the spring, raised to butcher on-site for “Chicken Fry” fund raiser.

ORCHARD/GARDEN: (Extension & local clubs) for “fruit pie”/”fresh vegetable” fund raisers. Or even pie baking contests!

FARMYARD/BARN YARD: at least (during warm months) drafthorse(s) to pull the plow and hay rake for demonstrations. Possibly a contest to plow the straightest furrow during “Harry’s Hay Days!”

OTHER:

Urge more involvement with the MO Dept. of Tourism.

Tours: Round Trip Grandview-Blue Ridge-Independence (and reverse) including sites along the way, lunch, etc.

(Van, Trolley, eventually Train?)

Create Post cards similar to Butler, MO.

Urge “Tourism” sales space in local businesses (restaurants, drug stores, etc.)
Park-like informational trail from Home to shopping area.

Official (sic) historic landmark designation to the “Truman Comers” site sign.

Promote Postmaster Truman at current Post Office &/or original site with portrait, monument, etc.

Response: Thank you for the comments. Developing specific interpretive programming elements and outreach strategies are not part of the CLR/HSR/EA, but the comments are on record and may be considered during future relevant planning efforts.

Comment (PEPC)

This project appears fiscally and environmentally sound, well reasoned, and timely. The mission and goals are achievable and success will benefit the site and public appropriately. The proposed process steps should be approved and implemented.

Response: Thank you for the comment.

Comment (PEPC)

As a native of southern Jackson County, Missouri, and someone who is familiar with the Truman story and the National Park Service at HSTR, I am very pleased to see this Truman Farm Cultural Landscape Report, Historic Structures Report and Environmental Assessment moving toward completion. I fully support the preferred Treatment Alternative. As a historian, I value placing the Truman farm in the widest context that is possible, and thus am gratified that the report expands the period of significance to include the Truman family’s use and sale of the farm for suburbanization purposes into the 1960s. I am hopeful that park management in its interpretive programs will include an even more expansive period to include the pre-Truman era as well as the history of the area after Harry Truman’s involvement ended, for in microcosm the story of the Truman farm links to many, many themes in American history that are significant in their own right and that will allow the park to tell the wider Truman story in Jackson and Cass counties and forge partnerships with other sites and agencies in the area. Finally, I am particularly excited to see the report recommend restoration of landscape and vegetation features that will provide visitors with a much better idea of the site as the core of a functioning Missouri farmstead in the nineteenth and twentieth centuries, one that was not only focused on the practical aspects of farming but also recognized that rural folk appreciated and participated in ideas about beauty (rose arbors), the taming of nature; and the separation of human space from wild space.

Well done, everyone.

Response: Thank you for the comment.

APPENDIX A

HARRY S TRUMAN NATIONAL HISTORIC SITE TRUMAN FARM CULTURAL LANDSCAPE REPORT, HISTORIC STRUCTURE REPORT, AND ENVIRONMENTAL ASSESSMENT IMPAIRMENT DETERMINATION

In addition to determining the environmental consequences of Treatment Alternatives to proposed actions, National Park Service (NPS) *Management Policies 2006* and Director's Order (DO)-12 require an analysis of potential effects to determine if actions will impair park resources. Impairment is an impact that would, in the professional judgment of the responsible NPS manager, harm the integrity of park resources or values, including opportunities that will otherwise be present for the enjoyment of those resources or values. A determination of impairment is made for particular resource impact topics carried forward and analyzed in the environmental assessment for the preferred Treatment Alternative. The preferred Treatment Alternative for meeting the objectives established in the Harry S Truman National Historic Site (NHS or park) Truman Farm Cultural Landscape Report, Historic Structure Report, and Environmental Assessment (CLR/HSR/EA) is described in Chapter 4 of the CLR/HSR/EA. The CLR/HSR/EA also includes detailed information on existing conditions of resources (CLR/HSR/EA Chapter 5) and the effects the preferred Treatment Alternative will have on those resources (CLR/HSR/EA Chapter 5). Existing conditions and effects are briefly summarized in this impairment determination.

The description of park significance in Chapter 1 of the CLR/HSR/EA was used as a basis for determining if a resource is:

- Necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park, or
- key to the natural or cultural integrity of the park, or to opportunities for enjoyment of the park, or
- identified in the park's general management plan or other relevant NPS planning documents as being of significance.

Impairment determinations are not necessary for some impact topics such as visitor experience, socioeconomics, public health and safety, environmental justice, land use, and park operations because impairment findings relate back to park resources and values. These impact areas are not generally considered park resources or values according to the Organic Act and cannot be impaired the same way that an action can impair park resources and values. The impact topics relevant to this impairment determination are historic structures and cultural landscapes, archeological resources, vegetation, and visual resources.

This impairment determination is based on current NPS guidance on determining impairment of park resources and values. The impairment determination for each resource and value includes:

- a brief description of the condition of the resource;
- whether the resource is necessary to fulfill the purposes for which the park was established;
- whether the resource is key to the natural or cultural integrity of the park or to the opportunity for enjoyment of the park;
- whether the resource is identified as a significant resource in the park's planning documents; and
- a statement as to why the action will or will not result in impairment of the resource, including a discussion of the context, severity, duration, and timing of any impacts, and any mitigation measures, if applicable.

Based on the aforementioned guidelines and basis for determining impairment of park resources and values, a determination of impairment is made for each of the resource impact topics carried forward and analyzed in the environmental assessment for the preferred Treatment Alternative.

HISTORIC STRUCTURES AND CULTURAL LANDSCAPES

The Truman Farm has integrity in location and setting as it remains in its original location, and its contributing features remain in their original locations. The setting reflects the original characteristics of the farm as reflected in the extant historic residential area, farmyards, and agricultural fields. The residential area and farmyards are approximately 5 acres, and comprise the listing in the National Register of Historic Places district and National Historic Landmark. Contributing features including the Farmhouse, garage, sugar maple grove, barnyard, and foundations of the Solomon Young barn and granary; and small-scale features such as the stone posts remain in their original location and relationship to one another. However, the loss of historic structures such as the Solomon Young barn, granary, and other outbuildings, and fencing of farm spaces such as barnyard and garden has diminished the feeling of the farm as it is difficult to discern the three-dimensional qualities of the farm and its spaces. The removal and deposition of several stone posts has obscured the relationship between the original Farmhouse and adjacent agricultural lands (Vivian's Farm). Most contributing features retain original historic fabric and materials, and reflect the workmanship of the historic construction. The brick and stone Farmhouse foundation, and the stone foundation of the garage retain their original materials. The stone posts and stone threshold remain and are of original construction of native local stone often used in the area during the period of significance. The poultry house, concrete pad, and fence remain with their original materials, and reflect the workmanship of the period.

The park's historic structures and cultural landscapes are necessary to fulfill the purpose of the park, are key to the cultural integrity of the park, and are considered significant park resources.

The emphasis of the preferred Treatment Alternative is to repair, maintain, and interpret the three historic buildings within the NHS. The central south porch at the Farmhouse would be altered to be Architectural Barriers Act Accessibility Standard compatible. The visitor

orientation and sales would be relocated from the Truman Farm home to the new Truman center at the former paint store. Parking would also be moved to the former paint store. The Truman Farm home garage would be rehabilitated and opened to visitors. A new maintenance and administrative building would be constructed behind the visitor center. Rehabilitation of the farm would focus on reestablishing the historical arrangement of the farm as originally designed by the family. These activities would improve the historic structures and cultural landscape of the farm.

The proposed activities under the preferred Treatment Alternative will have a local long-term moderate beneficial effect on historic structures and cultural landscapes and will not impair the resource.

ARCHEOLOGICAL RESOURCES

Several known archeological features exist within the Truman Farm. These are primarily located to the east of the Farmhouse in areas historically used as barnyards. The archeological features that are evident in the landscape today and nonvisible remains include the Solomon Young barn, the small barn, and the original farmhouse. The original house foundation was found west of the current Farmhouse. A root cellar was identified south of the home, which could have belonged to either house. A buried stone foundation of a small barn exists 18 feet east of the Farmhouse. The foundation of the Solomon Young barn is in the northeast corner of the site and two unknown structures are present in the park. It is possible that prehistoric archeological artifacts are also present in the Truman Farm parcel. Extensive disturbance and cultivation of the farm makes it likely that any artifacts present would be isolated and not part of a historic property.

These known archeological resources are necessary to fulfill the purpose of the park, are key to the cultural integrity of the park, and are considered significant park resources.

Excavation will be required for removal of the parking lot and grading activities between Tracts 1 and 2, which may expose previously unknown archeological resources (most likely artifacts associated with the NHS). No known archeological sites will be disturbed by the preferred Treatment Alternative. The proposed pavilion around the granary could have a long-term minor beneficial effect on the structure by protecting it from disturbance.

To minimize potential adverse impacts, surveys for visible archeological resources will be conducted prior to ground-disturbing activities. Testing and monitoring for subsurface artifacts will be conducted during ground-disturbing activities at the site. In the event archeological resources are encountered, work will be stopped immediately and the park cultural resource specialist will be contacted. If necessary, the State Historic Preservation Office will be consulted on potential adverse impacts and additional mitigation measures.

The preferred Treatment Alternative will have local long-term minor adverse impacts on archeological resources. Because the effects will be local, long-term, and minor, the preferred Treatment Alternative will not impair archeological resources.

VEGETATION

Vegetation at the Truman Farm is typical of properties that have been continuously modified by human disturbance. Little, if any, of the vegetation is reflective of conditions present before agricultural use of the site. The vegetation surrounding the Farmhouse and parking lot consists of upland turfgrass dominated by fescue (*Festuca* sp.), Bermudagrass (*Cynodon dactylon*), bluegrass (*Poa* sp.), and foxtail (*Setaria glauca*). A large sugar maple grove is located between the west facade of the Farmhouse and Blue Ridge Boulevard. A thick row of trees marks the fence line to the east and south of the Farmhouse. The southern and eastern parcels past the fence lines are dominated by smooth brome (*Bromopsis inermis*), switchgrass (*Panicum virgatum*), fescue, and dropseed (*Sporobolus* sp.). A small clump of trees and shrubs is present in the southeast corner of the property. No sensitive or unusual vegetation communities or species are present in either the farm parcel or the recently acquired parcel to the south.

The existing vegetation patterns that contribute to the Truman Farm's historic character are necessary to fulfill the park's purpose of preserving and interpreting the Truman Farm and agrarian landscape, are key to the cultural integrity of the park, and are considered significant park resources.

The vegetation patterns that contribute to the Truman Farm's historic character will be preserved under the preferred Treatment Alternative. Many of the trees around the Farmhouse, including the maple grove, will be maintained and vegetation patterns will be reestablished that reinforce the historic special organization of the farm. Vegetation buffers will be established along the perimeter of the property to screen the adjacent commercial and residential development. Some vegetation will be removed to strengthen the historical vegetation patterns and eradicate invasive species, including all of the trees along the southern fence line. Construction activities will be confined to the smallest area necessary to complete the work, and all areas of temporarily disturbed vegetation will be restored with native or appropriate introduced/historic vegetation following construction. The preferred Treatment Alternative will result in local long-term minor adverse effects on vegetation; however, these effects will not impair the resource.

VISUAL RESOURCES

The Farmhouse is the most dominant feature of the Truman Farm. Views of the Farmhouse are apparent from Blue Ridge Boulevard, the entrance drive, and from many locations across the farm. Views from the Truman Farm include those from the Farmhouse, the eastern field, and across the property. Views to the site include those seen from Blue Ridge Boulevard and the entrance drive. The view of the Farmhouse from Blue Ridge Boulevard is somewhat obscured by the adjacent commercial properties north and south, and only when located directly west of the Farmhouse can it be clearly seen from the road. From the entrance drive, the Farmhouse dominates the view.

From the Farmhouse, views exist to the west, east, and south to the Farmhouse yard and lawn beyond. The west side of the Farmhouse offers views to the sugar maple grove, and the original entrance to the farm with its two stone posts on Grandview Road. The barnyard's open space provides views to the adjacent commercial development on the north, while views to the east and south end at the tree rows.

Visual resources are necessary to fulfill the park's purpose of preserving and interpreting the Truman Farm, are key to the cultural integrity of the park, and are part of the significant "Farm experience" of the Truman Farm.

The visual quality of the park will be improved under the preferred Treatment Alternative by removing nonhistoric landscape features from the park. This includes adding vegetation to screen views of the adjacent development from the Truman Farm home and other areas of the site and by removing trees to open the view in the Farmhouse. The removal of the trees between Tracts 1 and 2 will also open up internal views of the site between the Farmhouse and the open field to the south. The preferred Treatment Alternative will result in local long-term moderate beneficial effects on visual resources, with no impairment to the resource.