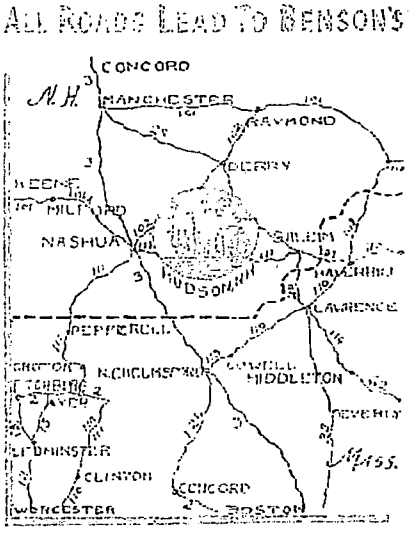
Jim Barnes

BENSON'S

Historic Structures Report

Benson's Property
Town of Hudson, New Hampshire
June 16, 2003 – 100% Submittal

Benson's Office and Kitchen



LCHIP
Investing in New Hampshire's Heritage
LAND & COMMUNITY HERITAGE INVESTMENT PROGRAM

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Benson's Office and Kitchen

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Table of Contents

List of Figures and Credits

Executive Summary

Purpose of the Report

This Historic Structures Report (HSR) has been prepared under Contract for the Town of Hudson, New Hampshire, with assistance from the New Hampshire Land and Community Heritage Investment Program (LCHIP), grant ID: 2002-R3-06. The purpose of the report is to provide guidance for the interim stabilization/preservation and long term rehabilitation of historic structures in the former Benson's Wild Animal Park, as an element of the implementation of the 2002 Benson's Property Master Plan. Although specific functional programs have not been finalized for the remaining historic structures, the buildings individually possess substantial significance and integrity, and are structurally well suited to a broad range of compatible adaptive reuse.

This study of the Benson's Office and Kitchen is undertaken to develop an understanding of the history and evolution of the structure through a careful investigation of the existing physical fabric. Combined with a limited review of historical documents associated with the building, and analysis of existing conditions preservation goals for the use and maintenance of this important structure can be created and implemented.

Research Methodology

The Historic Structures Report has been developed in the format established by the National Park Service in *NPS-28: Cultural Resources Management Guideline* (1993). Substantial documentary and archival research was completed in 1992 for the New Hampshire Division of Historical Resources Inventory. Archival research for this project was limited to a review of the holdings of the New Hampshire State Library, Hudson Town Library, Hudson Historical Society, and private collections as referenced. The principal focus of the investigation was on documentation of the individual structures, site assessment of existing conditions, and interpretation of evidence of physical evolution. Research goals were as follows:

- Existing conditions assessment
- Determination of structural condition
- Analysis of structural threats and causes of deterioration
- Identification of "character-defining features"
- Stabilization plan and cost estimate
- Development of rehabilitation guidelines and cost estimate
- ADA and code compliance assessment
- Projection of long-term maintenance needs and costs

Field research was conducted November, 2002 – May, 2003 to document the structure through measured drawings and photographs.

Significance

The Benson's Office and Kitchen were among the early permanent structures built by wild animal trainer, zoo operator, and entrepreneur John T. Benson after the opening of Benson's Wild Animal Park in Hudson, New Hampshire. The rustic style of the c. 1930 Office is in accord with the "naturalistic" principles of zoo design that Benson adopted from his mentor Carl Hagenbeck. It also reflects his likely exposure to the

Adirondack style of architecture in the period from 1910-1914 when his business pursuits included stocking the Adirondacks with large game. The Kitchen and no longer extant "Bavarian Beer Garden" are modeled directly on the Hagenbeck example. There are no other known sites or structures that exemplify his considerable influence on the development of the American amusement industry in the first half of the twentieth century. With the loss of most of the other Benson's structures, the Office and Kitchen are the only ones remaining that directly relate to John T. Benson's vision for the site.

Integrity

The exteriors of both the Office and Kitchen are relatively unchanged from their historic appearance. Demolition of the Benson era "Bavarian Beer Garden" has altered the functional layout of the Kitchen by removing the designed relationship of the open east wall to the covered outdoor seating area, and the raised balcony on the east elevation of the Office no longer exists. However, the overall form and materials of the buildings are intact. The building interiors also possess far more integrity than their current appearance suggests. Post-1950 features such as partitions, paneling, and food service equipment are largely superficial additions, and are in poor condition resulting from vandalism and neglect. Removal of these later elements would substantially return the interiors to their original appearance.

Major Issues Identified in the Scope of Work

The Office and Kitchen can be stabilized and some preservation work can be completed, but functional uses should be identified for the buildings before rehabilitation work begins. One issue that needs to be considered in developing ultimate treatment plans is how to enclose the opening at the east elevation of the Kitchen which formerly accessed the Bavarian Beer Garden. The Feature Inventory and Condition Assessment section of this report includes an option for restoring the original timber framed opening and constructing an entrance vestibule along the east wall. This is only one of many design possibilities and is included for general estimating purposes, rather than as a specific treatment recommendation.

Another important consideration in the long-term preservation of all the historic Benson's structures is the need for regular maintenance after repairs are completed. Development of a maintenance plan and checklist, and annual or semi-annual maintenance inspections are recommended.

Interim Treatment Recommendations

Stabilization is urgently needed for the Office and Kitchen, and the most critical component of that work is vegetation removal and site grading. Overgrown vegetation is damaging roof surfaces, retaining moisture in the building envelope, and causing the grade level to rise around the building perimeter, resulting in sill and siding decay. Another high priority is the need for an effective, low maintenance roof surface to protect the buildings until a rehabilitation program is finalized. Installation of asphalt impregnated roll roofing is recommended as a cost-effective interim solution.

Ventilated plywood closure panels should be installed in the window openings as detailed in the stabilization recommendations. The window closure panel system is designed to retard deterioration of the building by promoting ventilation, deterring vandalism, and facilitating periodic inspection of the interior. Doors should be secured with a hasp and padlock for access by authorized personnel.

Prioritized recommendations and cost estimates are listed in the Feature Inventory and Conditions Assessment section of this report. The estimated cost of the stabilization work is $30,380. This estimate includes selective demolition of non-historic interior partitions, paneling, carpeting, and equipment.

Ultimate Treatment Recommendations

While specific uses have not been identified for the Office and Kitchen, both buildings have the potential for a wide variety of compatible functions as office, meeting, or exhibit spaces. Although the buildings are connected by a passageway at the Office cellar level, they are basically two separate buildings, and should be regarded as such from the standpoint of operational efficiency and accessibility. Removal of existing partitions and equipment will return the Kitchen and the first floor of the Office to their historic appearance, and will provide maximum flexibility in accommodating future uses. The rehabilitation treatment recommendations in this report were developed to reflect a range of potential uses.

The Feature Inventory and Condition Assessment completed for this report details a complete, prioritized list of stabilization, preservation, and rehabilitation work developed to return the buildings to a sound, maintainable, and functional condition. Following stabilization, preservation and rehabilitation can be undertaken sequentially to support the goals that have been identified for development of the Benson's Property.

Total treatment costs by structure and treatment category:

	Benson's Office	Kitchen	Site	Treatment Net
Stabilization	$14,352.60	$11,762.45	$4,265.00	$30,380.05
Preservation	$20,642.88	$2,750.00		$23,392.88
Restoration				$0.00
Rehabilitation	$46,083.05	$73,639.54	$16,653.56	$136,376.15
Structure Net	$81,078.53	$88,151.99	$20,918.56	$190,149.08

Total Net Construction Cost	$190,149.08
General Conditions (15% Net)	$28,522.36
Design Costs (10% Net)	$19,014.91
Construction Contingency (15% Net)	$28,522.36
Total Rehabilitation Cost	**$266,208.71**

Recommendations for Additional Research

It is possible that additional photographs and historic documentation exist for the Benson's Office and Kitchen. Publicizing the preservation of the structures and the historic value of Benson's Wild Animal Park in Hudson and surrounding communities may provide an impetus for the location of other historic documentation.

Acknowledgments

Preparation of this report would not have been possible without the support and encouragement of all of the members of the Benson's Committee, past and present, and Sean Sullivan, Director of Community Development for the Town of Hudson. Betsy Hahn of the Nashua Regional Planning Commission kept the project on track as Project Manager for the LCHIP grant, and anticipated every liaison and coordination need.

Introduction

What is a Historic Structure Report?

The purpose of a historic structure report (HSR) is to develop an understanding of a building's physical history and condition, and provide specific, useable information for implementing a treatment plan. The New Hampshire Division of Historic Resources states that, "One of the first parts of a preservation project should be a historic structure report, which analyzes the physical evolution, condition, and potential of a historic building as documented by historical and architectural and technological evidence."[1] Buildings that are important in the history of a community have the potential to continue to serve that community in many ways after their original function is no longer viable. Like all cultural and natural resources, buildings have many levels of value – functional, economic, and other values that are intangible, but no less meaningful. A historic structure report is a tool for analyzing the multiple values that a building represents in a way that balances the relationship of meaning, use, and cost to realize maximum benefit to the community.

The decision to complete an HSR is part of a broader planning process, involving consultation from many sources and interest groups, leading to the conclusion that a historic resource should be preserved. The two major concepts that an HSR uses in assessing a building are *significance* and *integrity*. *Significance* considers the building's place in history through its context and associations. Is there a documented connection with a famous person or event? Is it a rare surviving example of a particular historic building type? Is it part of a story that illustrates an important theme in the history of a place or community? *Integrity* is the degree to which the ideas and values that make a building significant can be recognized in, and identified with its existing physical form, construction, and materials.

Documentation of a historic structure includes identifying the visual aspects and physical features that contribute to its distinctive architectural character. These *character-defining features* (CDFs) include the overall shape of the building, its materials, craftsmanship, decorative details, and interior spaces and features, as well as site and landscape elements. Character-defining features are those aspects of a building that define its particular aesthetic quality, and without which its architectural or historical integrity would be diminished or lost.

Finally, an HSR assesses the *condition* of the building to determine the extent and causes of deterioration and structural problems, and develop recommendations and cost estimates for treatment and future reuse. Resources available for the preservation of historic structures are typically extremely limited. Preservation is focused on means of finding compatible uses in the long term, and minimizing the loss of historic character in the short term.

Preservation Standards and Guidelines

Federal and state agencies use the *Secretary of the Interior's Standards for Treatment of Historic Properties* as the benchmark for reviewing proposed treatment of a historic structure (see Appendix I). The standards recognize four potential treatments for historic structures – preservation, restoration, rehabilitation, and reconstruction.

- *Preservation* focuses on the maintenance and repair of existing historic materials and retention of a property's form as it has evolved over time. (Protection and Stabilization have now been consolidated under this treatment.)

[1] "Alterations, Additions and Architects (Historic Resource Information)". New Hampshire Land and Community Heritage Investment Program website. Accessed November 27, 2002. <http://www.lchip.org/Alterations.%20Additions.%20&%20Architects.htm>

- *Rehabilitation* acknowledges the need to alter or add to a historic property to meet continuing or changing uses while retaining the property's historic character.
- *Restoration* depicts a property at a particular period of time in its history, while removing evidence of other periods.
- *Reconstruction* re-creates vanished or non-surviving portions of a property for interpretive purposes.

Rehabilitation is by far the most common treatment for structures that will be used for contemporary purposes. It is defined as *"the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values".*[2]

Although rehabilitation has been identified as the ultimate treatment for the Benson's historic structures, interim measures may be required to maintain them without additional loss of historic integrity until long term uses have been identified, and funding is available for rehabilitation. Stabilization consists of measures to slow or stop the process of deterioration by reestablishing a weather resistant enclosure, and providing temporary, reversible means of structural shoring or support where necessary.

The deed conveying the Benson's property to the Town of Hudson includes a preservation restriction on the historic property, which identifies the *Secretary of Interior's Standards for Rehabilitation and Guidelines for Rehabilitation of Historic Properties* as the principal standard for review. The preservation restrictions applied to the buildings and their settings require that, where possible, repair, replacement, alterations and additions should be made "in-kind", with forms, design, materials, and workmanship that match or complement and are compatible with the historic forms, design, and materials.

[2] Kay D. Weeks and Anne E. Grimmer, *The Secretary of the Interior's Standards for the Treatment of Historic Properties, with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* (Washington, DC: U.S. Department of the Interior, National Park Service, Cultural Resources Stewardship and Partnerships, Historic Preservation Services, 1995), p. 61.

Part 1: Development and Use

Historical Background and Context

Historic Hudson: 1761-1910

The area comprising the present 168-acre Benson's Property lies to the southeast of Hudson Center, bounded by Route 111, Kimball Road, Bush Hill Road, and Falling Rock Road. Census records indicate that the property was divided into several farms during the second half of the 19th century, producing corn, oats, peas, beans, potatoes, apples, butter, wood, and hay.

Interstate Fruit Farm: 1910-1924

Between 1910 and 1911, these farms were consolidated through purchase by the Interstate Hotel Corporation of Lexington, Massachusetts, which operated the property as the Interstate Fruit Farm. One unsuccessful aspect of the Interstate Fruit Farm tenure was the operation of a "health farm" for retired circus performers and animal trainers. In 1915, John T. Benson, President of the Interstate Hotel Corporation was appointed Manager of the Interstate Fruit Farm.

Benson's reputation as an animal trainer, adventurer, zoo curator, and entrepreneur was by this time firmly established. Born the son of a menagerie owner in Dewsbury, Yorkshire, England in 1871, Benson immigrated to the United States in the 1890s, where he quickly achieved recognition for importing wild animals from India, Africa, and Thailand for exhibit in zoos and circuses around the country. As a wild animal scout Benson is credited with capturing the first gorilla to be exhibited in captivity for the Ringling Brothers Circus. He participated in the development of a number of zoos including the Franklin Park Zoo in Boston where he served as curator. In 1914, Benson became the United States Manager for the world's largest wild animal training organization, Hagenbeck of Germany, importing exotic animals to a shipping depot in Hoboken, New Jersey, for sale to zoos and circuses. It is not known whether the Interstate Fruit Farm initially served as a staging area for the Hagenbeck organization during Benson's tenure as Manager, or whether this figured in the operation of the "health farm".

Benson's Wild Animal Farm: 1924-1943

In 1924, Benson purchased the Hudson property outright and renamed it Benson's Wild Animal Farm, using it as a quarantine station, training venue, and shipping base for animals imported from Hagenbeck in Germany. By 1926, use of the Hoboken, New Jersey terminal was discontinued, and animals were transported by rail from the port of Boston to the Rochester Railroad Station in Hudson Center, a short distance from the Benson's property.

Benson lived in the c.1880 farmhouse on the property (NHDHR Inventory #28.A). Two large existing barns, the "John T. Benson Barn" associated with the farmhouse (NHDHR Inventory #28.B) and the Haselton Barn (NHDHR Inventory #28.HH) were available to house animals to which those accommodations were suited. The Elephant House (NHDHR Inventory #28.D) was probably one of the earliest Benson's era structures, necessitated by the particular requirements of its inhabitants. Other pens, runs, and enclosures were undoubtedly constructed as needed. Another early Benson's structure was the rustic Office (NHDHR Inventory #28.C2). While Benson developed the infrastructure of the Wild Animal Park, he also assembled a cadre of animal trainers including: lion trainer, Joseph Arcaris; elephant trainer Carl Neuffer; horse trainer, Fred Pitkin; and chimpanzee trainer, George Marshall.

In 1927, Benson's Wild Animal Farm opened to the public for a small admission fee. Until his death in 1943, John T. Benson developed the property into a renowned regional attraction celebrated as "the strangest farm on earth". Adopting the model pioneered by his business associate Carl Hagenbeck with the creation of an "animal park" near Hamburg, Germany in 1907, Benson created a setting where exotic

animals appeared in a naturalistic landscape. Financed largely by Benson's success as an animal merchant, the facilities were constantly expanded during the 1930s. Attractions included: enclosures for the largest collection of monkeys ever exhibited at one time; bear and lion cages; gorilla house; pony and zebra houses; sea lion pool and shelter; snake and reptile exhibits; and caged enclosures for exotic birds. The grounds were extensively landscaped, and featured picturesque paths, water features, and rustic bridges. Regular performances displayed trained tigers, lions, ponies, dogs, seals, and elephants Rides on Betsey, the famous elephant were among the most popular of all the attractions at Benson's. In between animal acts, visitors enjoyed miniature golf, horse-shoes, lawn bowling, shuffleboard, and children's rides. Concession areas including a Bavarian style café and beer garden offered food and drink.

Lapham Era: 1944-1976

Following Benson's death, the Wild Animal Farm was sold in 1944 to a Boston investment group headed by Raymond W. Lapham. The Farm was closed during World War II. When it reopened in 1945, Benson's practice of selling animals to other zoos and circuses was discontinued. Under Lapham's management the number of animal species increased, and the Farm began to operate more along the lines of a traditional zoo operation. Additional amusement rides were also added. During the 1950s, Benson's was one of New Hampshire's top attractions, second only to Rockingham Race Track, with approximately 500,000 visitors annually. Raymond Lapham died in 1976, and Benson's was put up for sale again.

Provencher Period: 1979-1987

Arthur P. Provencher, a Nashua businessman, purchased the property in 1979, and began the process of expanding the operation to include additional amusement rides, as well as a petting zoo, and changes in the animal habitat areas. In 1980, 125 different species were exhibited at Benson's for a total of more than 400 animals. By 1982, the number of animals increased to nearly 800. Benson's employed approximately 250 summer workers, many of them high school students from Hudson and surrounding towns. When Circus World, an expanded amusement ride area opened in 1982, up to 10,000 people visited the park daily. In 1983, Provencher acquired the Hudson Railroad Depot and moved it from its Greeley Street location in Hudson Center to the Park and remodeled it as a residence.

Despite its continuing popularity, Benson's Wild Animal Park filed for reorganization under federal bankruptcy statutes in 1985. The Park operated on a scaled-down basis until 1987, when it closed to the public. The animals were sold to zoos and other federally sanctioned destinations. All of the amusement rides, fixtures, and memorabilia, along with many of the post-1950 landscape features were sold and removed.

New Hampshire Department of Transportation: 1992-2002

In 1992, the New Hampshire Department of Transportation (NHDOT) acquired the Benson's property for the purpose of creating a wetland mitigation site for wetland impacts caused by construction of the Nashua Circumferential Highway. The proposed mitigation activity consists of restoration and/or construction of up to 44-acres of wetlands on the Benson's site. The Department of Transportation took steps to stabilize some of the historic structures, and provide security fencing. In November 1992, an intensive historic structures survey was completed for the New Hampshire Division of Historic Resources (NHDHR) by Lynne Emerson Monroe of the Preservation Company, Kensington, NH. All existing structures were field checked, documented and a NHDHR Inventory Form was completed. Based on this survey NHDHR determined the Benson's property to be eligible as a district for the National Register of Historic Places with 25 contributing structures.

To be eligible for the National Register, structures or districts must be found to have significance under one or more of the following criteria.

A. That are associated with events that have made a significant contribution to the broad patterns of our history; or

B. That are associated with the lives of persons significant in our past; or

C. That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. That have yielded or may be likely to yield, information important in prehistory or history.[3]

The Benson's property was determined eligible as a district under Criteria A, B, and C, "for the information it conveys about the growing importance and evolution of naturalistic animal facilities/zoos inn the early half of the 20th century, for its association with John T. Benson, an animal trainer and showman of national, if not world-wide significance, and as a rare surviving collection of structures typifying modest zoos in the first half of the 20th century."[4] The Division of Historic Resources identified the principal period of significance as 1924-1947, the date of John T. Benson's ownership of the property. The Interstate Fruit Farm period, 1910-1924, was noted as a secondary period of significance.[5]

In 1997, the Benson's site was reviewed again by NHDHR, and found to be no longer eligible as a district for the National Register due to loss of integrity through physical decay, vandalism, and evidence of post-1947 alterations to contributing structures.[6] Removal of 16 structures and several animal pens was approved by NHDHR, and completed by the Department of Transportation. Additional architectural documentation was completed on the remaining structures by the Cultural Resource Group of Louis Berger and Associates, Inc. in 1998. Photographs and site sketches were completed by Richard M. Casella, Senior Architectural Historian at LBA. In 1998, the John T. Benson Barn, (NHDHR Inventory #28.B) was destroyed in an arson fire. Ironically, the barn was lost just as a structural assessment was being completed by Arron Sturgis of Preservation Timber Framing, Inc.

Use of the Benson's property as a passive recreation area has been determined to be compatible with the wetland mitigation plan. Based on this finding, NHDOT negotiated the sale of the property to the Town of Hudson. The Town of Hudson, through the Board of Selectmen, appointed a citizen committee to study options for the use of the property. A Conceptual Master Plan for the development of the Benson's Property was completed in March 2002, by Vanesse Hangen Brustlin, Inc. Sale of the property to the Town of Hudson, under conservation and preservation easements is pending.

The Benson's Committee established by the Hudson Board of Selectmen on May 7, 2001 was charged with "the responsibility of recommending a site plan with proposed uses for the Benson's property." The Committee worked actively with consultant Vannasse Hangen Brustlin Inc. (VHB) during the development of the Benson's Property Master Plan. The Committee also solicited public input during the planning process and met regularly with NHDOT, the Town Planner, and representatives of the Nashua Regional Planning Commission. The Committee received significant input on proposed alternatives from local citizens through public informational sessions and questionnaires.

The 2002 Benson's Property Master Plan by VHB covers the proposed development of the entire 168-acre Benson's Property as a passive recreation area and local/regional park in a manner compatible with the NHDOT wetland mitigation plan. The Master Plan summarized the development program for the site as follows:

> Proposed plan improvements are generally geared toward creating a pastoral park setting, with restoration of contributing historic structures, redevelopment of open field areas into multi-purpose

[3] "How to Apply the National Register Criteria for Evaluation". U.S. Department of the Interior, National Register website. Accessed January 20, 2003. < http://www.cr.nps.gov/nr/publications/bulletins/nrb15/nrb15_2.htm>
[4] New Hampshire Division of Historical Resources – Area Form, A-28. Benson's Wild Animal Farm, Hudson, NH. November, 1992. Sheet 13 of 77.
[5] NHDHR Determination of Eligibility (DOE), with annotations. January 6, 1993. NHDHR files.
[6] Nancy C. Muller, Director, NH State Historic Preservation Officer to William Hauser, Bureau of Environment, NH Department of Transportation. October 17, 1997. Correspondence, NHDHR files.

play areas, building a system of trails that accommodates a variety of non-motorized activities, provision for vehicle access and parking for approximately 250 cars, development of new structures for picnicking, restrooms/concessions, an amphitheater with seating for approximately 500 people, and a warming house for winter ice skating and cross country skiing.[7]

The Master Plan emphasizes that identifying and implementing a successful reuse proposal for the remaining historic structures is "key to the long term success of the master plan".[8] The main limitation on reuse of the historic structures is a site-wide prohibition on commercial activity under the Memorandum of Agreement between NHDOT and the Town of Hudson. Another issue addressed by the VHB Report is need for the Town of Hudson to establish an adequately staffed and equipped Parks and Recreation Department to manage and maintain the Benson's grounds and buildings.

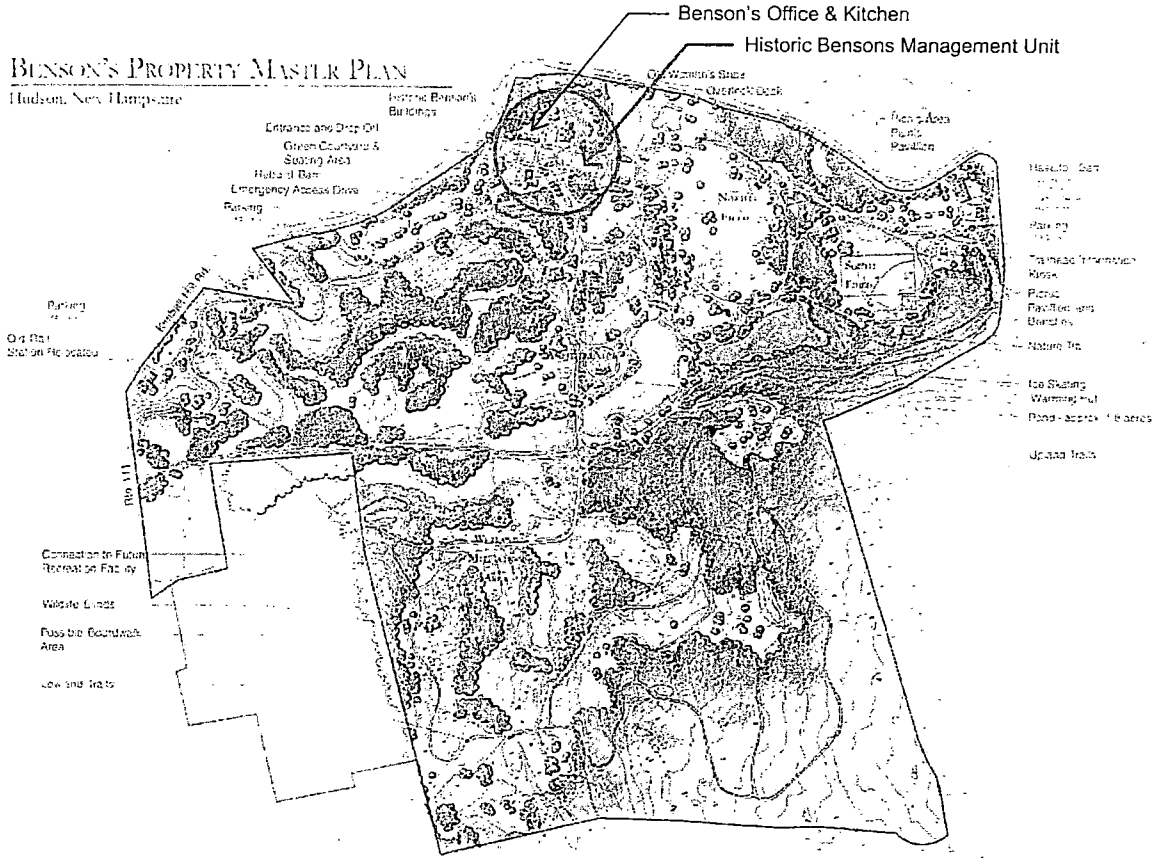

Figure 1. Benson's Property Master Plan showing Historic Bensons Management Unit. (VHB, 2002).

[7] *Benson's Property Master Plan.* Vanasse Hangen Brustlin, Inc. Bedford, New Hampshire. March, 2002. p. 11.
[8] *Benson's Property Master Plan.* p. 13.

Figure 2. Benson's Office from the southwest. Date unknown. Used with permission of Robert J. Goldsack.

Architectural Description: Office

Design

The Office is believed to have been built c. 1930 by John T. Benson, although no documentation has been located to support an exact date of construction. The building retains its original form, materials, and massing. The architectural character of the building is an interesting combination of parts evidently designed to produce a different impression from different approaches to the building. From within the main gates of the Wild Animal Park, the principle view of the building is the rustic D-log siding and massive stone chimney. The north elevation of the building, visible from Kimball Hill Road is a simple Greek revival gable front with clapboard siding, similar to the road front appearance of most buildings in the area. The shingle sided east elevation is the least public exposure and probably served as more of a utility and service space for the Bavarian Beer Garden.

The Office lacks external ornamentation except for the simple ogee profile moulding of the east cornice. The log rafter ends are square cut at 90-degrees. The limited photographic evidence available does not indicate whether the enameled steel awning over the west entrance was present during the John T. Benson period, but it appears to be a relatively early feature.

Foundation

The building is located on a steeply pitched site, sloping from the northwest to southeast corner, exposing the fully height of the stone foundation wall along much of the east elevation. The random rubble stone wall is laid on a poured concrete footing. In the northwest corner of the structure the footing is poured against granite ledge, which appears within the basement. The basement has a full concrete floor slab.

Walls

The structure is a rectangular frame building with a footprint of 18'x36'. The west and south elevations are sheathed with 2"x6" Northern White Cedar "D-log" siding. The south façade is dominated by a large field stone chimney. The east wall is covered with cedar shingles. The north wall is finished with 1"x 8" Northeastern White Pine, tongue & groove double clapboard siding , below contemporary metal siding to the limits of the removed contemporary First Aid structure.

Above the random rubble stone foundation wall, the exterior bearing walls of the structure are standard 2x4 construction The interior wall faces are covered with varnished D-log siding. The first floor is framed with 2x10 joists at 2'- 0" o.c. There were no original partition walls in the Office building. The north room and bathroom partitions were added in the 1970s by Arthur Provencher.

Porches and Decks

Due to the change in elevation on between the east and west sides of the structure, the west door is at grade level, while the east door is a full story above grade. The shadow of the removed exterior deck terminates well to the south of the existing east door location. Areas of replaced shingle siding below the door may cover evidence of an exterior stairway to grade level, or a continuation of the earlier deck.

Doorways

Two original entrances are placed opposite each other on the east and west walls. A boarded up door located on the north elevation formerly accessed the First Aid building. This door location appears to be original to the construction of the building. A cutout in the clapboard sheathing above the door indicates that there was originally a small project gable roof sheltering the door.

The basement had one exterior door in the masonry foundation wall at the southeast corner of the building. The passageway between the Office and Kitchen was open to the Bavarian Beer Garden at the south, and a single door opening in the masonry wall of the south elevation was located west of the chimney at the basement level.

Windows

The Office building contains a mix of fixed, casement, and double-hung wood sash windows. The west façade contains a pair of large fixed 24-lite wood windows, each approximately 5'- 8" x 4'- 8", and one 6-lite single-hung window in what is presently the bathroom. This window may have served as a cashier's window for the office since there is an 8" wide shelf at the base of the window on the building exterior.

The north elevation originally had a large window centered immediately under the roof ridge. The opening measures 37"x 56". The window and casing has been removed, and any exterior evidence of the opening is hidden by the contemporary metal siding. The dimensions and construction of the north elevation suggest that this opening was filled with a double-hung wood window, possibly 2/2 or 4/4. There is a single window opening at the first floor level approximately 31"x 45". A 20"x 30" window opening in the basement is completely obscured by the raise in grade level. The sash is missing from this window and the opening infilled with plywood.

The east elevation contains three windows at the first floor level. Two casement windows have diamond-shaped divided lights with 7 full panes, and 10 half-panes. These windows measure 24"x 36" each. The remaining first floor window is approximately 30"x 38" with 2, 6-lite wood casement sash. The basement level has one 40"x 58" window opening, and one 24"x 36" opening. The window sash has been removed from both openings, and no evidence remains of the former window configuration. Two single, 6-lite wood casement windows approximately 24" square flank the stone chimney on the south elevation.

Roof

The steeply pitched (12:12) roof is covered with cedar shingles over rough sawn board sheathing with irregular (waney) edges with the bark on, apparently meant to be seen from below for rustic effect. The roof framing is composed of approximately 6" diameter unpeeled pine log rafters, 2'- 0" on center, flattened on the top surface. The east roof face carries a shed roofed dormer with three casement windows and a smaller gable roofed dormer with a single window. The dormers are framed with unpeeled pine logs on 2x4 framed cheek walls clad with beaded tongue & groove paneling. The exterior faces of the dormers are clad with red cedar shingles.

Finishes

All exterior wood work on the Office is painted. The earlier paint coat on window frames and trim is dark green. All wall surfaces including the D-log siding, clapboards, and cedar shingles are painted barn red.

Utilities

The heating, plumbing, and electrical systems of the Office Building appear to have been upgraded in the 1970s by Arthur Provencher, and replaced the earlier heating and electrical systems present in the building. Anecdotal evidence suggests that there was not originally a bathroom in the Office building.

Interior Spaces: Basement

The Basement occupies the full footprint of the Office building. The basement is accessed from the main floor of the office by a stair in the north end of the building, through a floor hatch. There are two entrances at grade level, through one doorway in the southwest corner at the connecting passageway, and one doorway on the east elevation below the former deck. There is a concrete floor slab throughout.

Originally a single undivided space, the basement is bisected by a walk-in cooler room, 8'- 6" x 16'- 0". The cooler was constructed of 2x6 stud walls sheathed in plywood, with fiberglass batt insulation, and accessed by a single door on the south side which communicates with the Kitchen through the passageway and a 14'-6" x 16'-0" storage room. The walls, ceiling, and wood beams of the storage room are covered with composition board (Homosote) panels with narrow wood battens at the board joints. The walls and ceiling are painted white. The north end of the basement contains the furnace, hot water heater, sump pump, and electrical panels for the Office.

Interior Spaces: First Floor

All of the original finish materials of the original Office remain intact under the applied finishes and additions. The first floor of the Office consisted of one large undivided space with an open ceiling and D-log wall paneling. The stone chimney is the principal interior feature of the space. The bathroom and small room at the north end of the building were added during the Provencher period.

Architectural Description: Kitchen

Design

The Kitchen and Office were originally built as two separate structures. The Kitchen is a single story 18' x 37' brick structure with a low-pitched clay tile roof. The covered passageway connecting the basement of the Office with the Kitchen is a later addition. The framing of the passageway roof indicates that the Office originally had an elevated walkway entered at grade from the southwest corner which continued around to the east elevation of the Office as a raised deck. The architectural evidence does not indicate whether the Office or Kitchen was built first, although both structures are believed to have been constructed c. 1930.

The design of the Kitchen is distinctly different from that of the Office Building. The relatively light-weight construction and rustic appearance of the Office contrasts with the solidity of the brick masonry walls, tile roof, and timber trusses of the Kitchen. The Kitchen is partially built into grade on the west side, and the brilliantly colored tiles of the roof are its dominant visual aspect from the Wild Animal Park entrance. The low profile of the building continues at the south elevation, and formerly led into the large gable roofed structure that housed the Bavarian Beer Garden. From within the Beer Garden the open east elevation of the Kitchen was characterized by braced timber post and beam construction. The Kitchen interior was originally open to the timber roof structure. The interior of the Kitchen received a substantial amount of natural light from large windows on the west and south elevations.

Foundation and Walls

The brick walls of the Kitchen and connecting passage are 12-inch, 3-wythe brick laid in common bond on a concrete footing. The site is pitched from west to east, with the west wall functioning as a retaining wall, sloping to grade level on the east side. On the west elevation a concrete stem wall is poured to approximately the level of the exterior grade. There is a 24" square chimney on the south elevation. The north and south elevations of the brick wall are continuous up to the gable ridge. On the north elevation, a dimension lumber ledger is lagged into the brick to carry the framing for the roof of the connecting passage.

Doorways and Openings

As originally designed the entire east wall of the Kitchen was open to the seating area of the timber framed pavilion which served as the Bavarian Beer Garden. The Beer Garden was 48' long by 36' wide with the gable roof oriented perpendicular to the Kitchen. As shown in the photograph opposite, the Beer Garden was originally open sided. The 1992 NHDHR photographs taken prior to demolition of the Beer Garden show that the walls were later fully enclosed.

The opening in the east wall of the Kitchen takes up most of the elevation, measuring 31' wide x 9'- 4" high. At the open east wall, the 6"x 8" plate is carried on a discontinuous 7"x 8" beam which formerly spanned the opening on two braced posts at the truss locations. Pegs in the beam show the former location of the mortise for the knee braces. The discontinuous beam on the east end contains a piece of circular sawn material, scored with an axe in an attempt to duplicate hand hewn material. When the two braced posts were removed from the opening at the east elevation, an 8"x 2-1/2"L x 1/4" steel I-beam was put in place to span the 31' opening, with a single steel pipe column at mid-span. The ends of the steel I-beam were crudely let into the brick end walls at the bearing points. The only other access into the Kitchen was through two doorways in the north elevation at the connecting passageway.

Windows

The Kitchen has four window opening. Two windows are spaced evenly on the west elevation, at grade level. The openings are 4'- 0" wide x 42" high, and contain a pair of 12-lite wood casement sash. There are two windows on the south gable end of the building flanking the chimney. The window to the right of the chimney is the larger of the two with an opening of 6'- 2" x 5' -6". It is closed on both the inside and outside with painted plywood. The window to the left of the chimney has an opening size of 6'- 6" x 4'- 8" with 2 wood, 12-lite casement sash. The 1992 NHDHR photographs show both window openings enclosed with painted plywood, apparently installed during the operational period of the Bavarian Beer Garden to close off the view of the food preparation area. The window to the east of the chimney is not accessible, but is assumed to also contain a pair of wood casement sash.

Roof

The Kitchen roof structure is the most significant character-defining feature of the original interior space. Although concealed by a later dropped ceiling, it was originally open to view, and was designed to be seen

as part of the rustic appeal of the Bavarian Beer Garden, when it functioned as a food service area. Installation of the ceiling and interior partition took place after changes in the food service operation post-1950.

The roof structure is composed of 10 pairs of 8"x 8" hand hewn rafters on 3' - 6" centers, and two king post trusses, each located 12 feet in from the gable end walls. The roof system carries a double layer of 7/8" x 3-1/2" tongue and groove sheathing for the clay tile roof. The trusses are fixed through the king post and into the rafters with 2-1/2" wide x 3' - 0" x 3/4 iron straps, each side, through bolted with 3 square headed bolts. The bottom chord is fixed to the king post with a 19" long iron stirrup. The rafter ends bear on 6"x 8" hand hewn plates on the eave walls. At the open east wall, the 6"x 8" plate is carried on a discontinuous 7"x 8" beam which formerly spanned the opening on two braced posts at the truss locations. Pegs in the beam show the former location of the mortise for the knee brace. The rafters, trusses, and plates are fabricated from re-used timbers salvaged from an early timber framed building as shown by non-contextual mortises in the sill plate and rafters, some of which have been patched.

The discontinuous beam on the east end contains a piece of circular sawn material, scored with an axe in an attempt to duplicate hand hewn material. When the two braced posts were removed from the opening at the east elevation, an 8"x 2-1/2"L x 1/4" steel I-beam was put in place to span the 31 foot opening, with a single steel pipe column at mid-span. The ends of the steel I-beam were crudely let into the brick end walls at the bearing points. The roof structure and underside of the roof sheathing is painted yellow. The brick gable walls in the attic space are painted red in what is evidently the earliest paint scheme for the Kitchen interior.

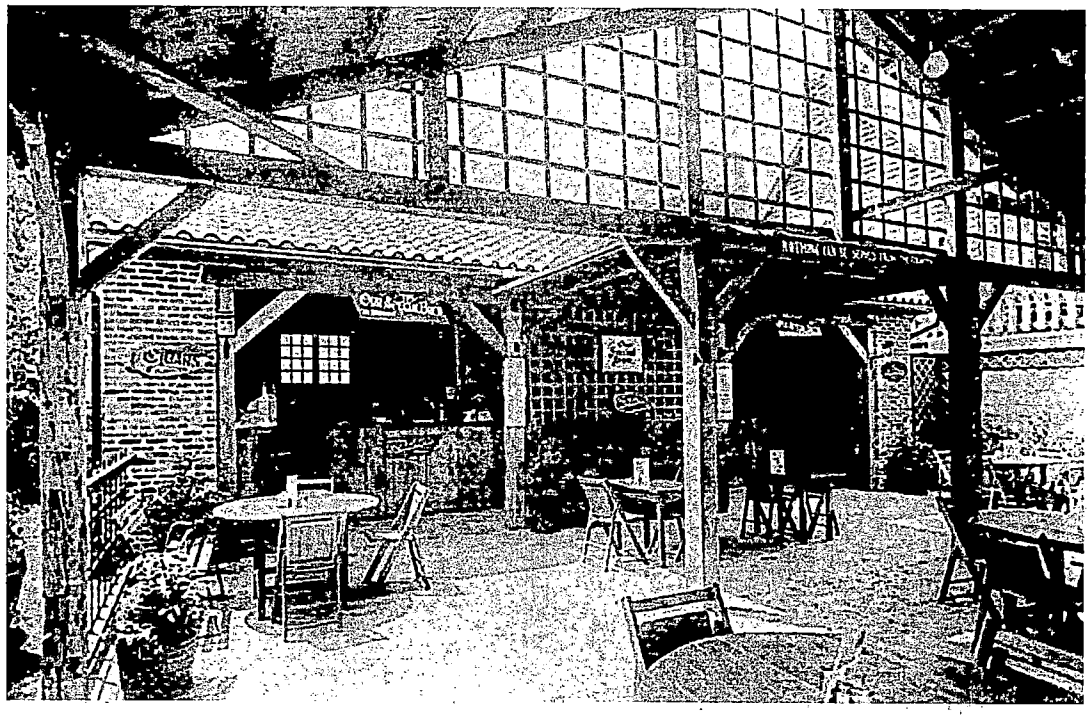

Figure 3. Interior of Bavarian Beer Garden. Photograph courtesy of Robert J. Goldsack. Date unknown.

The tile roof is an original feature of the Kitchen. The roof tiles are fabricated by the Ludowici Roof Tile Company of New Lexington, OH, which has been in continuous production in the United States since 1888. Ludowici tile roofs are a feature of many important historic buildings including those at Ellis Island.

The roof is made up of 13-1/4" x 9-3/4" Spanish tiles with a 10" exposure. Tile fittings include the distinctive ribbed ridge units, left and right-handed detached gable rakes, and top and eave-closure fittings.

Finishes

All interior finish surfaces including brick and concrete walls, wood roof sheathing and the roof structure were originally painted. The earliest color layer on the brick walls is red. The roof framing and sheathing shows the original yellow paint color in the attic space.

Utilities

Electrical service enters the Kitchen below exterior grade through the wall in the northwest corner. There is a large electrical panel on the interior of the north wall of the kitchen and a distribution box in the attic space above. A large exhaust fan and ductwork in the attic space served a commercial exhaust hood above the grilling station in the food service area.

Interior Spaces

The Kitchen interior is presently configured for the food service operation of the Arthur Provencher period. All interior finishes, fixtures, and appliance are post-1950. The entire structure was originally open.

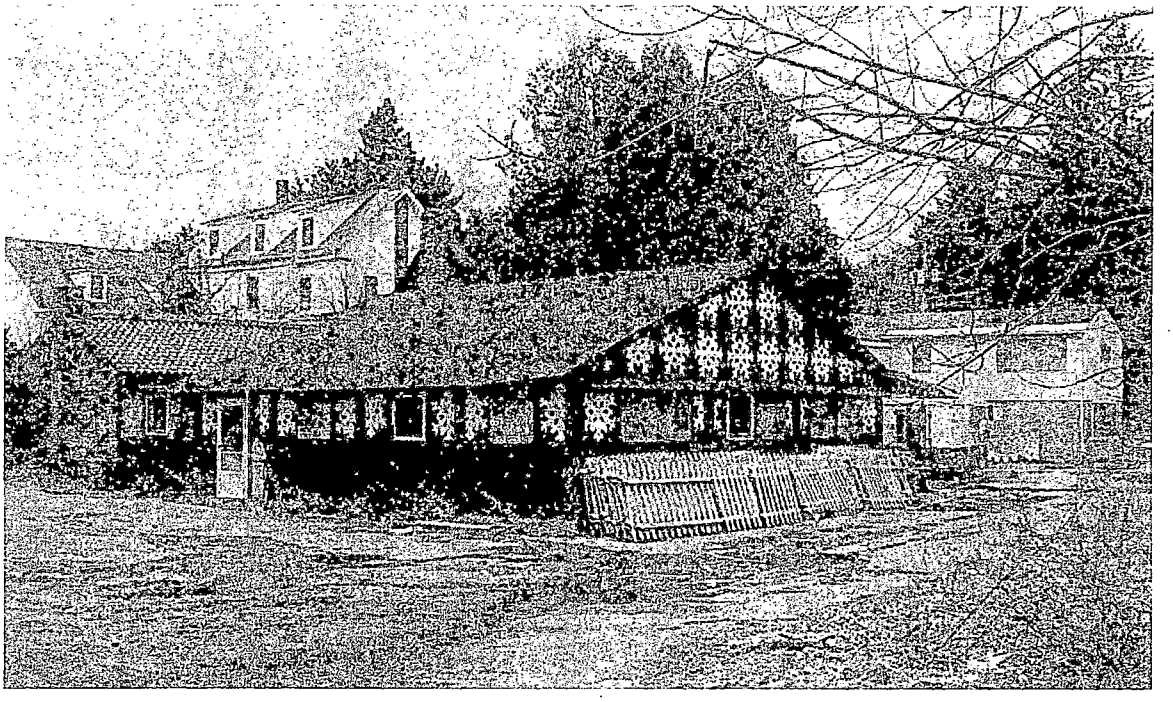

Figure 4. Exterior of Bavarian Beer Garden. New Hampshire Division of Historic Resources. 1992.

Existing Conditions

A detailed analysis of the individual elements of the building, their evolution, and existing condition is contained in the Feature Inventory and Condition Assessment appended to this report. Recommended treatments fall into two basic categories:

- Measures to stabilize and preserve the buildings.
- Ultimate restoration and rehabilitation recommendations.

Figure 5. 1998 aerial view of Benson's historic structures. Nashua Regional Planning Commission.

Part 2: Treatment and Use

Character-Defining Features and Recommendations

Introduction

The proposed treatment for the Benson's Office and Kitchen is rehabilitation. The Secretary of Interior's Standards for the Treatment of Historic Properties define rehabilitation as:

> . . . the act of process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values.[9]

The "portions or features" to be preserved are known as character-defining features (CDFs), elements of a building which responsible for the particular visual and aesthetic qualities that cause a structure to be valued as a historic resource. CDFs may by architectural features and details, materials, craftsmanship, surface finishes, interior spaces, or architectural context.

Many of the Secretary of the Interior's Standards for Rehabilitation specifically address the retention of character-defining features.[10] These include the following:

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.

2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.

3. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.

4. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a property shall be preserved.

7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.

9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.

10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

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[9] Kay D. Weeks and Anne E. Grimmer, *The Secretary of the Interior's Standards for the Treatment of Historic Properties, with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings* (Washington, DC: U.S. Department of the Interior, National Park Service, Cultural Resources Stewardship and Partnerships, Historic Preservation Services, 1995), p. 61.
[10] Weeks and Grimmer, p. 62.

A primary goal of an HSR is to define a buildings CDFs to insure that they are protected from alteration of demolition during the rehabilitation process. CDFs may also be missing or removed elements that were important to the historical character of a structure. The Secretary of Interior's guidelines states that:

> ". . . where an important architectural feature is missing, its replacement is always recommended . . . if adequate historical, pictorial, and physical documentation exists so that the feature may be accurately reproduced.[11]

Exterior Elements

- Form and massing of buildings. Accommodation of buildings to a sloped site, with entrances at different grade levels.
- Mix of wood window sizes, types, and glazing patterns including; casement, double hung, and fixed lite sash.
- Random rubble stone foundation wall and massive field stone chimney on Office. Common bond brick walls of Kitchen.
- Timber framed opening in the east elevation wall of the Kitchen.
- Mix of exterior siding materials on the Office including D-log rustic siding, wood shingles, and clapboards.
- Gable roof forms: 12:12 pitch wood shingle roof on Office with shed roof and gabled dormers, 5-1/2:12 pitch glazed clay tile roof on Kitchen. Distinctive profile of Mission tiles and ridge profile.
- Decorative elements; ogee profile cornice with return on north elevation of Office, exposed log rafter tails on Office, hewn rafter ends on Kitchen.

Interior Elements

- Room space and layout in Office and Kitchen consisting of single undivided spaces with open roof structures; unpeeled log rafters and exposed roof sheathing in the Office with natural light from dormer windows, and open hand hewn roof framing in the Kitchen.
- Interior finish materials; stained and varnished D-log siding, painted brick walls.

[11] Weeks and Grimmer, p. 65.

Interim Treatment and Use: Stabilization

Stabilization is urgently needed for the Office and Kitchen, and the most critical component of that work is vegetation removal and site grading. Overgrown vegetation is damaging roof surfaces, retaining moisture in the building envelope, and causing the grade level to rise around the building perimeter, resulting in sill and siding decay. Another high priority is the need for an effective, low maintenance roof surface to protect the buildings until a rehabilitation program is finalized. Installation of asphalt impregnated roll roofing is recommended as a cost-effective interim solution.

Ventilated plywood closure panels should be installed in the windows, and east elevation openings as detailed in the stabilization recommendations. The window closure panel system is designed to retard deterioration of the building by promoting ventilation, deterring vandalism, and facilitating periodic inspection of the interior. It also provides a visual indication that the building is protected and valued by the community. Doors should be secured with a hasp and padlock for access by authorized personnel.

Prioritized recommendations and cost estimates are listed in the Feature Inventory and Conditions Assessment section of this report. The estimated cost of the stabilization work is $30,380. This estimate includes selective demolition of non-historic interior partitions, paneling, carpeting, and equipment.

With proper planning and direction, some stabilization work can be completed by a well-organized volunteer effort. Certain activities should only be performed by preservation specialists such salvaging the existing clay tiles on the Kitchen roof, which needs to be done with great care and understanding of the handling requirements of the material. Selective demolition of the interiors also needs to be performed under the guidance of a preservation specialist to avoid removal of significant historic material, or unintended damage.

Priority Stabilization Recommendations: Cost Summary

Office and Kitchen Site	
Remove trees and vegetation	$3,625
Re-grade around foundation	$640
Office	
Debris removal and selective demolition	$9,391
Install ventilated window closure panels	$3,024
Install temporary roll roofing	$1,788
Stabilize projecting wood beams on east elevation	$150
Kitchen	
Debris removal and selective demolition	$5,421
Remove clay roof tiles and preserve for reuse	$2,250
Install temporary roll roofing	$1,490
Install ventilated window closure panels	$567
Install temporary infill and access wall at east elevation	$1,734
Install temporary infill panel at east passage opening	$300
Total Stabilization Cost	**$30,380**

Alternatives for Ultimate Treatment and Use

Benson's Office and Kitchen

Based on the Benson's Property Master Plan completed by VHB in March 2002, the Benson's Committee identified 16 Management Units and associated management categories for development of the site. The Benson's Office and Kitchen fall within the 6.5-acre Historic Benson's Management Unit. The Historic Unit is identified as the main entrance and focus of activity for Benson Park, and is intended to be accessed from the Primary Parking Unit immediately to the north off of Kimball Hill Road.

The Master Plan and the Benson Park Management Site Unit Descriptions have identified the following potential alternative uses for the rehabilitated Benson's Office and Kitchen:

- Office space for Parks and Recreation Department staff
- Police Department substation
- Caretaker's apartment
- Display space for Benson's Wild Animal Park artifacts and memorabilia
- Public restroom facilities

Each of these alternatives has been developed within the context of an ambitious long-range development program for the entire Management Unit and Benson Park. Unit and Park development needs fall into the following general categories:

- Public safety, and protection of the site and structures
- Conservation of natural and cultural resource values
- Visitor orientation and education
- Infrastructure development and maintenance
- Public services (restrooms, community meeting and event space, etc.)

None of these needs are inherently incompatible, and all are essential to the successful long-term revitalization of the site. Because implementation of the Park Management Plan is anticipated to be a long-term process, treatment of the historic structures will likely take place in a number of phases, in concert with mitigation work, passive recreation enhancement activities, and development of organized recreation facilities. Needs assessment, goals, and the economic climate may change as well. Therefore it is important to insure that treatment of the historic structures is implemented in a way that allows for flexibility in dealing with future changes of program and function without impairing the historic qualities of the structures.

The Benson's Office and Kitchen are probably the most vulnerable of the remaining historic structures to adverse impacts from rehabilitation activities because of the lack of a specific vision for their ultimate use. However, interim stabilization and preservation of the structures will preserve them for a period of 3-5 years without significant additional deterioration, and allow consideration of the full range of alternatives. The Office and Kitchen are an extremely significant link between the past and the future of the Benson's Property and have great potential to be a focal point in the ultimate development of the site.

Part 3: Technical Data

Appendix I: Secretary of the Interior's Standards for Rehabilitation

The Secretary of the Interior is responsible for establishing standards for all programs under Departmental authority and for advising Federal agencies on the preservation of historic properties listed in or eligible for listing in the National Register of Historic Places.

The Standards for Rehabilitation (codified in 36 CFR 67 for use in the Federal Historic Preservation Tax Incentives program) address the most prevalent treatment. "Rehabilitation" is defined as "the process of returning a property to a state of utility, through repair or alteration, which makes possible an efficient contemporary use while preserving those portions and features of the property which are significant to its historic, architectural, and cultural values."

Initially developed by the Secretary of the Interior to determine the appropriateness of proposed project work on registered properties within the Historic Preservation Fund grant-in-aid program, the Standards for Rehabilitation have been widely used over the years--particularly to determine if a rehabilitation qualifies as a Certified Rehabilitation for Federal tax purposes. In addition, the Standards have guided Federal agencies in carrying out their historic preservation responsibilities for properties in Federal ownership or control; and State and local officials in reviewing both Federal and nonfederal rehabilitation proposals. They have also been adopted by historic district and planning commissions across the country.

The intent of the Standards is to assist the long-term preservation of a property's significance through the preservation of historic materials and features. The Standards pertain to historic buildings of all materials, construction types, sizes, and occupancy and encompass the exterior and interior of the buildings. They also encompass related landscape features and the building's site and environment, as well as attached, adjacent, or related new construction. To be certified for Federal tax purposes, a rehabilitation project must be determined by the Secretary to be consistent with the historic character of the structure(s), and where applicable, the district in which it is located.

As stated in the definition, the treatment "rehabilitation" assumes that at least some repair or alteration of the historic building will be needed in order to provide for an efficient contemporary use; however, these repairs and alterations must not damage or destroy materials, features or finishes that are important in defining the building's historic character. For example, certain treatments – if improperly applied – may cause or accelerate physical deterioration of the historic building. This can include using improper repointing or exterior masonry cleaning techniques, or introducing insulation that damages historic fabric. In almost all of these situations, use of these materials and treatments will result in a project that does not meet the Standards. Similarly, exterior additions that duplicate the form, material, and detailing of the structure to the extent that they compromise the historic character of the structure will fail to meet the Standards.

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.

2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.

3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.

4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.

5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a property shall be preserved.

6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.

7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.

8. Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.

9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.

10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

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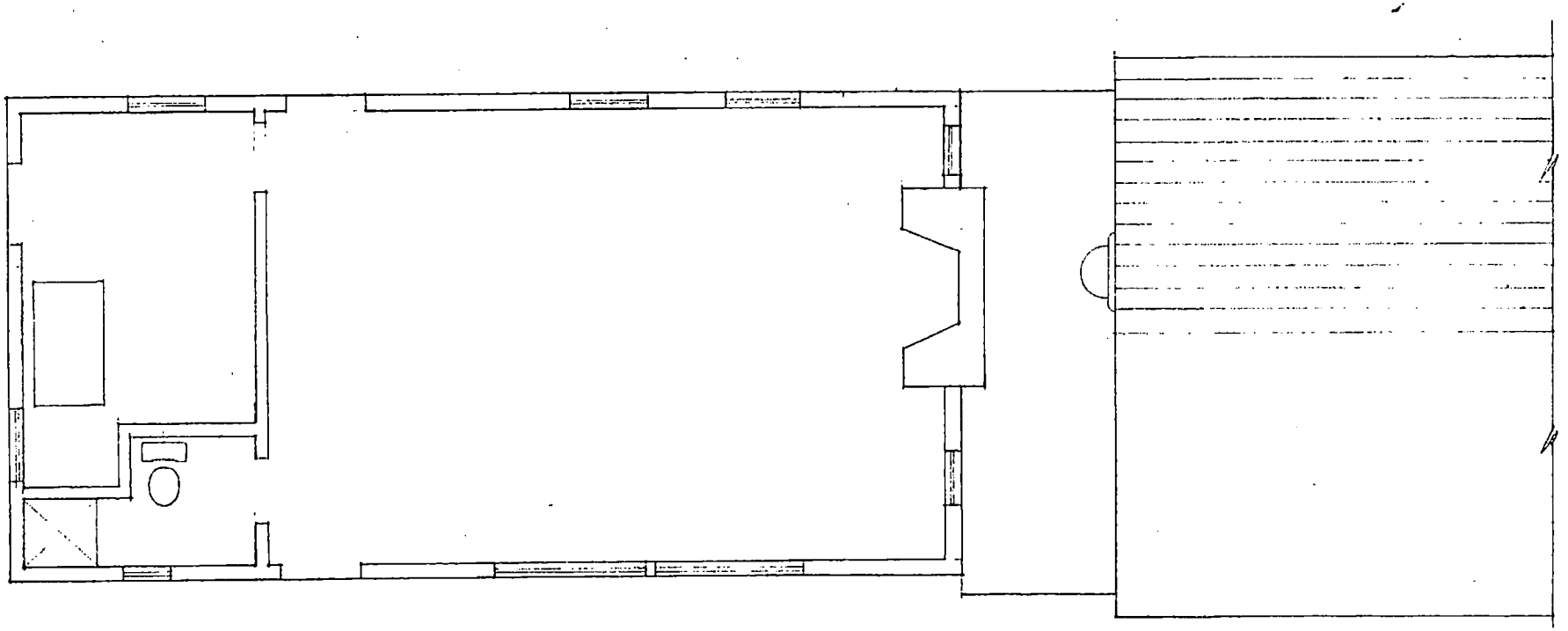
Architectural Drawings

Office First Floor Plan
Office Basement Plan
Office Section
Office North Elevation
Kitchen/Office South Elevation
Kitchen Floor Plan
Kitchen Roof Framing Plan
Kitchen Section

Office First Floor Plan

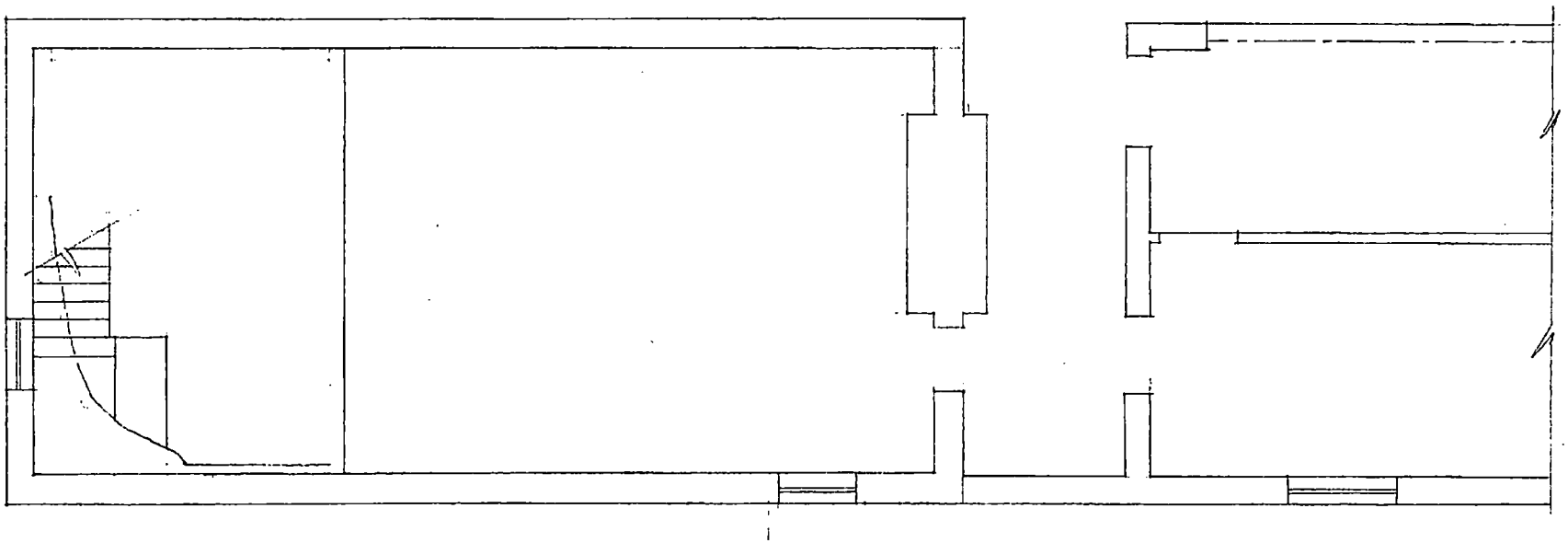


OFFICE FIRST FLOOR PLAN

NOTE: Schematic drawing for annotation purposes, not reproduced to scale.

NORTH

Office Basement Plan



OFFICE BASEMENT PLAN

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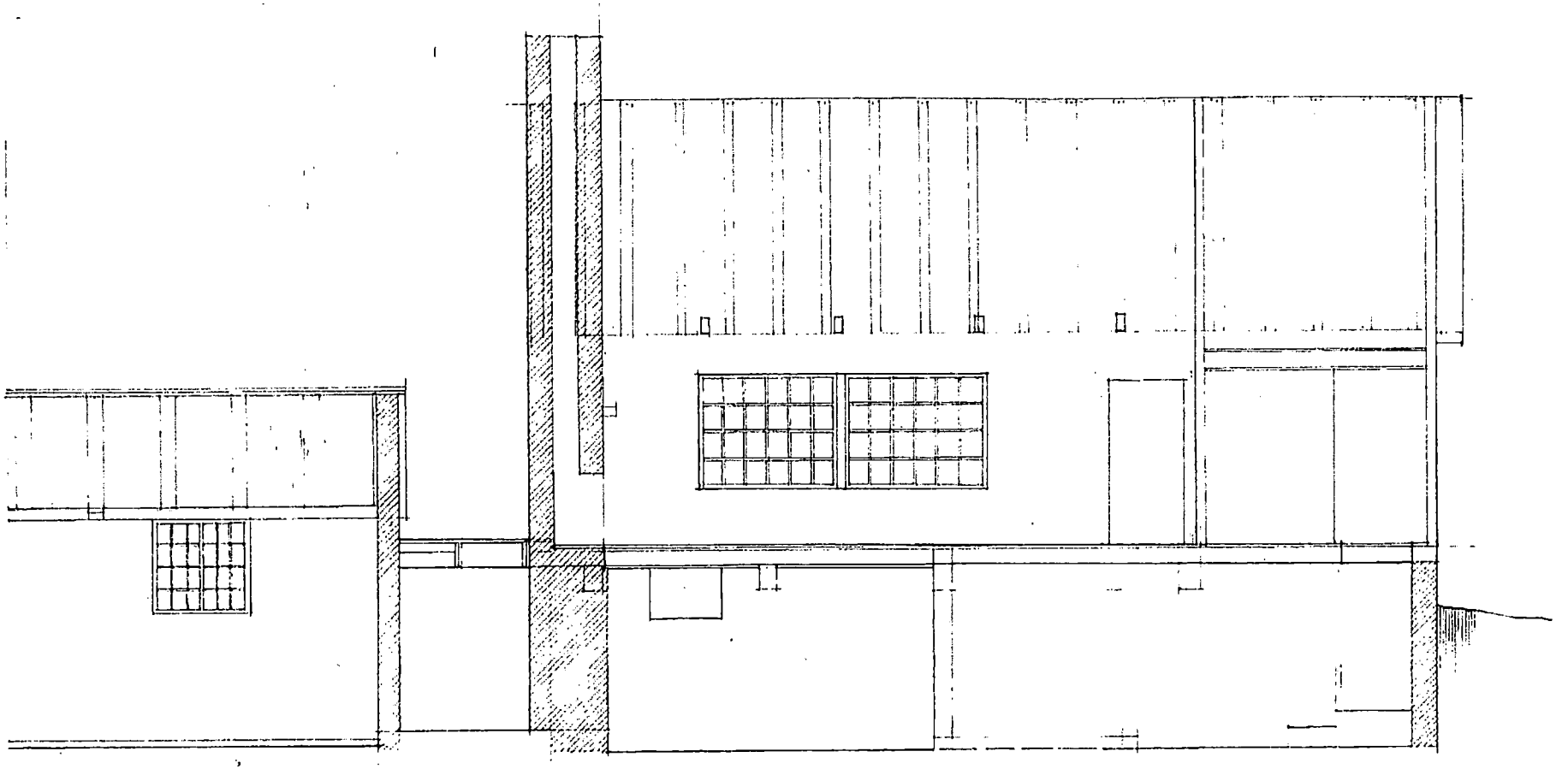
Office Section



OFFICE SECTION

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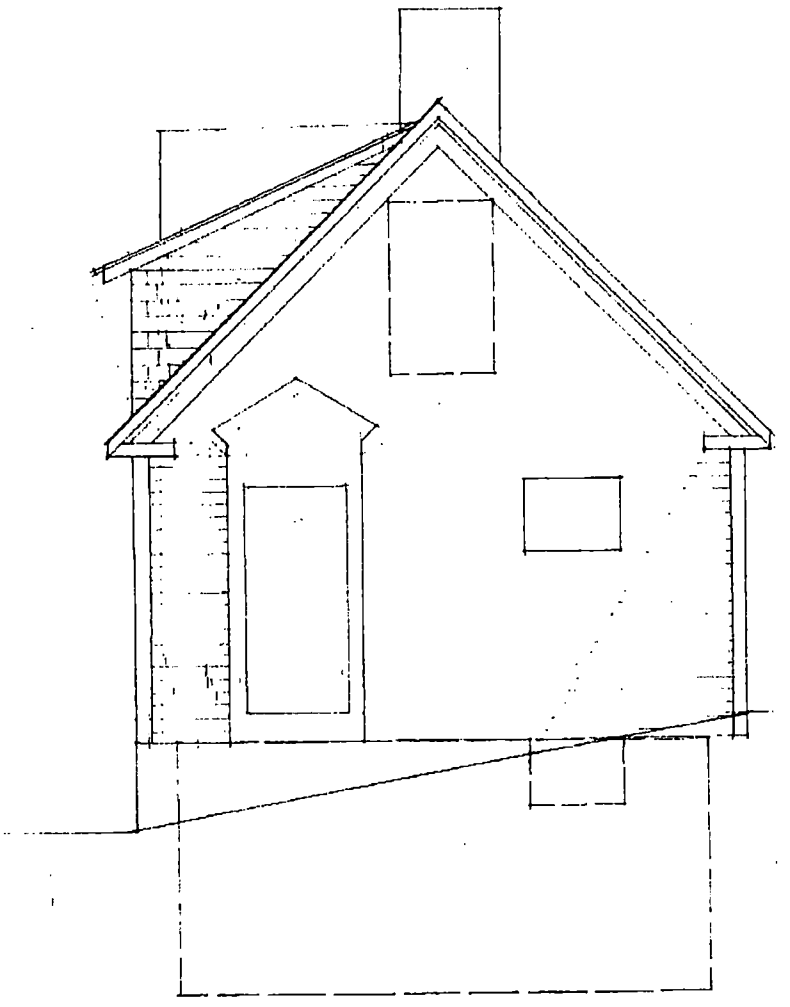
North Elevation



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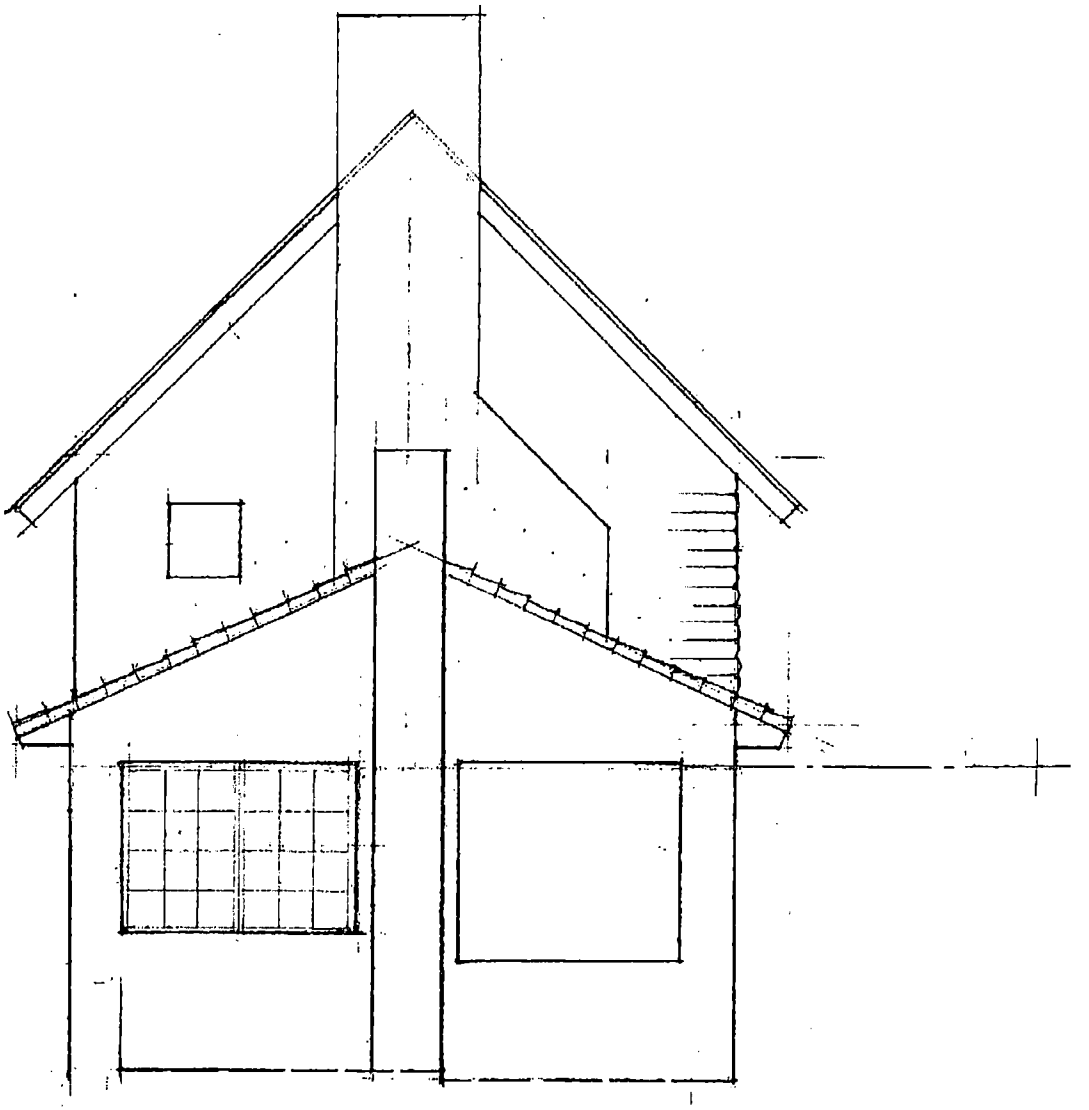
OFFICE NORTH ELEVATION

Kitchen/Office South Elevation



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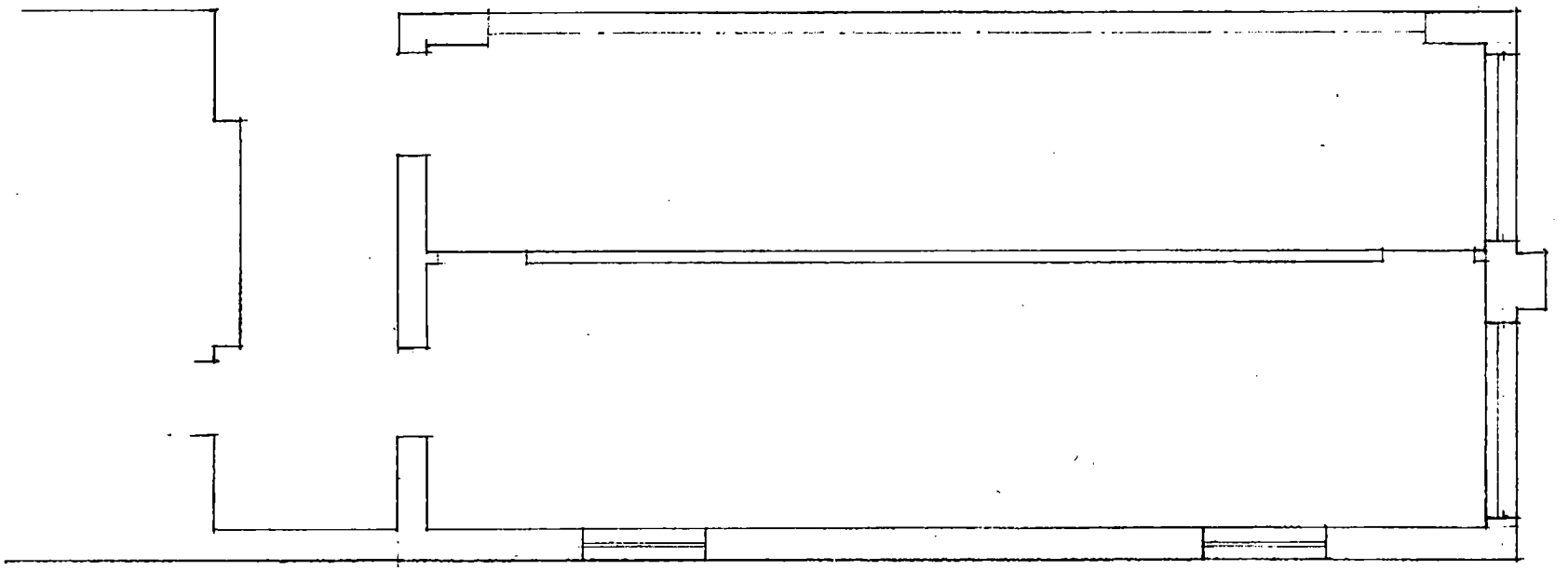
KITCHEN/OFFICE SOUTH ELEVATION

Kitchen Floor Plan

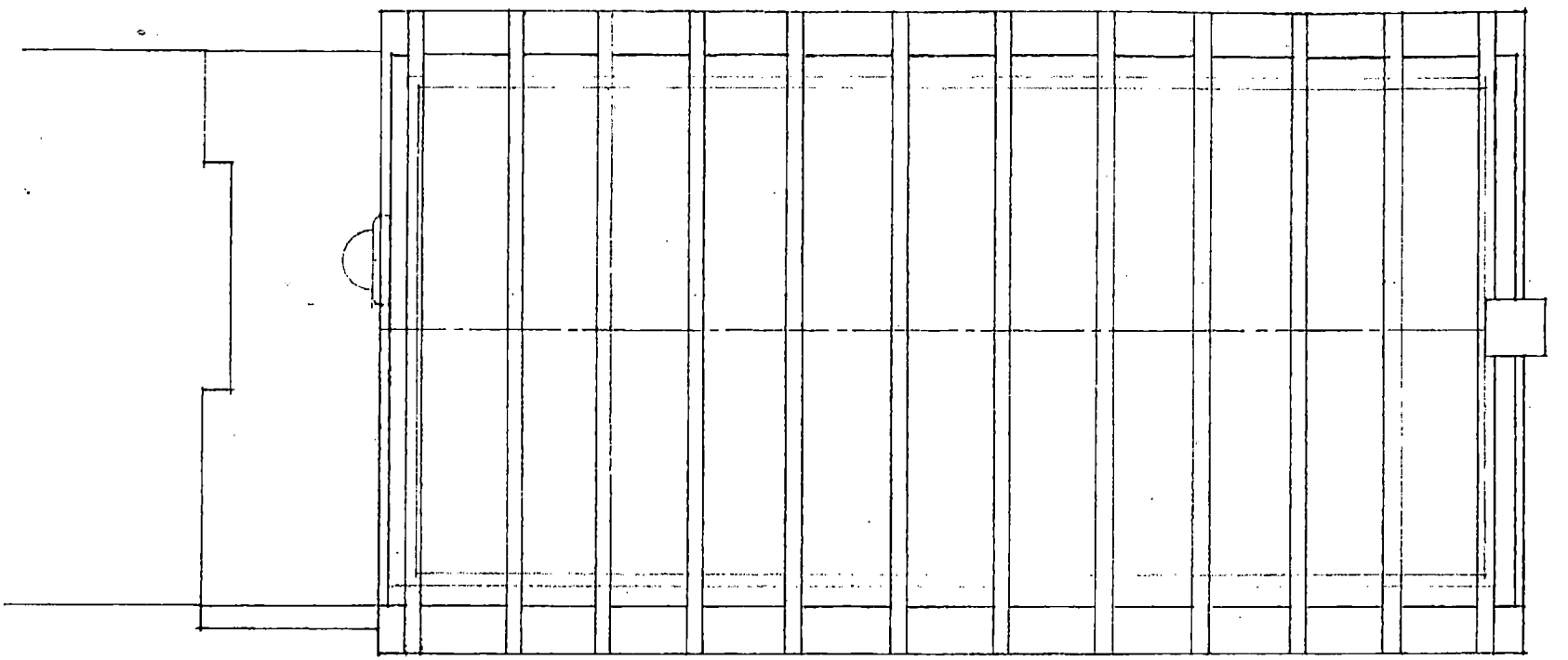


KITCHEN FLOOR PLAN

NOTE: Schematic drawing for annotation purposes, not reproduced to scale.

NORTH

Kitchen Roof Framing Plan



KITCHEN ROOF FRAMING PLAN

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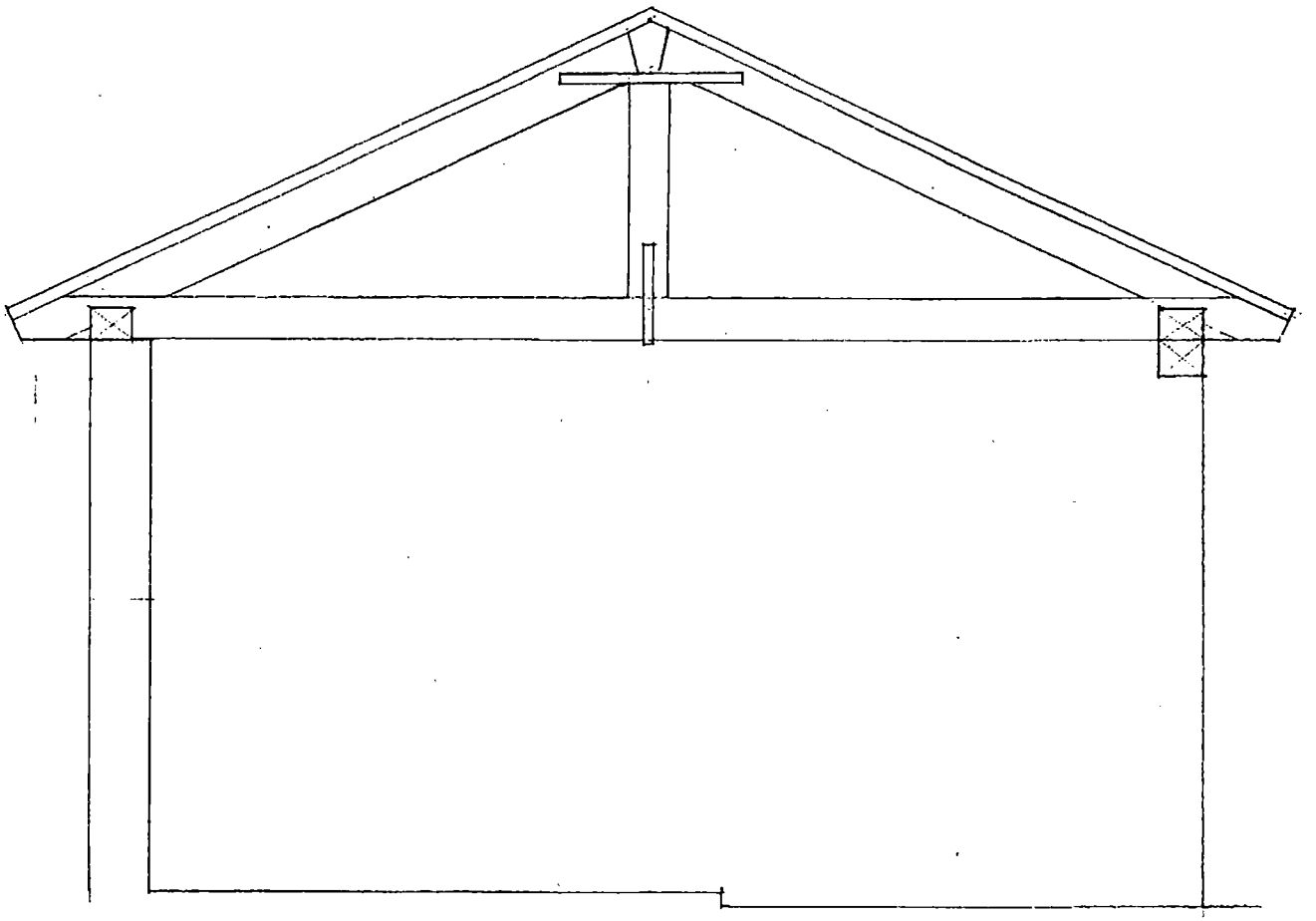
NORTH

Kitchen Section



KITCHEN SECTION

NOTE: Schematic drawing for annotation purposes, not reproduced to scale.

Treatment Cost Summary: Benson's Office

Treatment Type: Preservation

Priority	Feature Name	Treatment Description	Quantity	Unit Cost	Total Cost
High	Exterior Openings: Windows	Repair historic windows in-kind	15 Ea	$250.00	$3,750.00
High	Exterior: Finishes	Paint exterior siding	1,638 SF	$2.25	$3,685.50
High	Exterior: Finishes	Paint exterior architectural trim	450 SF	$2.25	$1,012.50
High	Exterior: Novelty Log Siding	Replace missing/deteriorated siding	150 SF	$5.50	$825.00
High	Exterior: Shiplap Siding	Remove vinyl siding and cornice	180 SF	$0.58	$104.40
High	Exterior: Shiplap Siding	Replace missing/damaged siding	25 SF	$3.32	$83.00
High	Exterior: Shiplap Siding	Replace missing section of wood cornice	6 LF	$25.00	$150.00
High	Exterior: Stone Chimney	Fabricate and install chimney cap	1 Ea	$195.00	$195.00
High	Exterior: Stone Chimney	Caulk joint between masonry and D-log siding	32 LF	$2.89	$92.48
High	Exterior: Wood Shingle Siding	Replace wood shingle siding and SE corner board	345 SF	$3.30	$1,138.50
High	Foundation: Stone	Install subsurface foundation drainage	50 LF	$25.00	$1,250.00
High	Foundation: Stone	Minor repointing of existing stone masonry	150 SF	$15.00	$2,250.00
High	Structure: Wall Framing	Replace deteriorated sill on west elevation	15 LF	$115.00	$1,725.00
				Total High Priority Preservation Treatment Costs:	$16,261.38

Total Preservation Treatment Cost: $16,261.38

Treatment Cost Summary: Benson's Office

Treatment Type: Rehabilitation

Priority	Feature Name	Treatment Description	Quantity	Unit Cost	Total Cost
High	Exterior: Doors	Frame and install 2 new cellar doors	2 Ea	$500.00	$1,000.00
High	Exterior: Doors	Rehabilitate north elevation door	1 LS	$650.00	$650.00
High	Exterior: Doors	Install deck and stair at east door	1 LS	$1,200.00	$1,200.00
High	Exterior: Wood Shingle Roof	Install roof insulation	1,200 SF	$3.65	$4,380.00
High	Exterior: Wood Shingle Roof	Install new cedar shingle roof	1,200 SF	$16.00	$19,200.00
High	Interior Finishes	Refinish original floors	595 SF	$1.87	$1,112.65
High	Interior Finishes	Clean and refinish interior wall panelling	650 SF	$2.25	$1,462.50
High	Structure: Floor Framing	Construct new cellar stair	1 LS	$125.00	$125.00
High	Structure: Wall Framing	Install blown in cellulose insulation in walls	650 SF	$1.54	$1,001.00
High	Utilities: Mechanical, Electrical, and Power	Install new gas-fired hot air heating system	600	$5.78	$3,468.00
High	Utilities: Mechanical, Electrical, and Power	New electrical service, distribution, and wiring	600 SF	$9.23	$5,538.00
High	Utilities: Mechanical, Electrical, and Power	Install fire alarm system	600 SF	$3.79	$2,274.00
High	Utilities: Mechanical, Electrical, and Power	Install hot water heater	1 LS	$605.00	$605.00
High	Utilities: Mechanical, Electrical, and Power	Install unisex bathroom	1 LS	$3,516.90	$3,516.90
			Total High Priority Rehabilitation Treatment Costs:		$45,533.05

Total Rehabilitation Treatment Cost: $45,533.05

Treatment Cost Summary: Benson's Office

Treatment Type: Stabilization

Priority	Feature Name	Treatment Description	Quantity	Unit Cost	Total Cost
High	Building Interior	Debris removal and selective demolition	1,332 SF	$7.05	$9,390.60
High	Exterior Openings: Windows	Install temporary ventilated window closure panels	16 Ea	$189.00	$3,024.00
High	Exterior: Wood Shingle Roof	Install temporary roll roofing	12 SQ	$149.00	$1,788.00
High	Structure: Floor Framing	Treat projecting wood beam with wood preservative	3 Ea	$25.00	$75.00
			Total High Priority Stabilization Treatment Costs:		$14,277.60

Total Stabilization Treatment Cost: $14,277.60

Total Net Cost: Benson's Office $76,072.03

Treatment Cost Summary: Kitchen

Treatment Type:

Priority	Feature Name	Treatment Description	Quantity	Unit Cost	Total Cost
	Building Interior	Install new concrete slab for radiant heating	688 SF	$6.96	$4,788.48
			Total Priority Treatment Costs:		$4,788.48

Total Treatment Cost: $4,788.48

Treatment Type: Preservation

Priority	Feature Name	Treatment Description	Quantity	Unit Cost	Total Cost
High	Exterior Openings: Windows	Repair historic windows in-kind	3 Ea	$500.00	$1,500.00
High	Foundation Wall: Brick	Install subsurface foundation drainage	50 LF	$25.00	$1,250.00
			Total High Priority Preservation Treatment Costs:		$2,750.00

Total Preservation Treatment Cost: $2,750.00

Treatment Type: Rehabilitation

Priority	Feature Name	Treatment Description	Quantity	Unit Cost	Total Cost
High	Building Interior	Demolition of concrete floor slab	769 SF	$10.00	$7,690.00
High	Exterior Opening: East Elevation	Construct door and frame at passage opening	1 LS	$500.00	$500.00
High	Exterior Opening: East Elevation	Remove steel I-beam, replace braced timber posts	30 LF	$175.00	$5,250.00
High	Foundation Wall: Brick	Remove ventilator and replace brick in-kind	9 SF	$45.00	$405.00

Treatment Cost Summary: Kitchen

Treatment Type: Rehabilitation

Priority	Feature Name	Treatment Description	Quantity	Unit Cost	Total Cost
High	Interior: Finishes	Install new resiliant flooring	688 SF	$1.58	$1,087.04
High	Interior: Finishes	Interior surface preparation and painting.	2,400 SF	$2.25	$5,400.00
High	Roof: Clay Tile Roof	Install new tile roof (40% replacement)	10 SQ	$650.00	$6,500.00
High	Structure: Connecting Passage Roof	Install new passage roof	108 SF	$1.96	$211.68
High	Utilities: Mechanical, Electrical, and Power	New electrical service, distribution, and wiring	688 SF	$9.23	$6,350.24
High	Utilities: Mechanical, Electrical, and Power	Radiant heating system in new concrete floor	688 SF	$7.56	$5,201.28
High	Utilities: Mechanical, Electrical, and Power	Install fire alarm system	688 SF	$3.79	$2,607.52
High	Utilities: Mechanical, Electrical, and Power	Install unisex restroom	1 LS	$3,516.90	$3,516.90
High	Utilities: Mechanical, Electrical, and Power	Install hot water heater	1 LS	$605.00	$605.00
			Total High Priority Rehabilitation Treatment Costs:		$45,324.66
Medium	Exterior Opening: East Elevation	Construct new entrance vestibule	256 SF	$91.90	$23,526.40
			Total Medium Priority Rehabilitation Treatment Costs:		$23,526.40

Total Rehabilitation Treatment Cost: $68,851.06

Treatment Type: Stabilization

Priority	Feature Name	Treatment Description	Quantity	Unit Cost	Total Cost
High	Building Interior	Debris removal and selective demolition	769 SF	$7.05	$5,421.45

Treatment Cost Summary: Kitchen

Treatment Type: Stabilization

Priority	Feature Name	Treatment Description	Quantity	Unit Cost	Total Cost
High	Exterior Opening: East Elevation	Temporary infill at east passage opening	50 SF	$6.00	$300.00
High	Exterior Opening: East Elevation	Install temporary infill and access wall	289 SF	$6.00	$1,734.00
High	Exterior Openings: Windows	Install temporary ventilated window closure panels	3 Ea	$189.00	$567.00
High	Roof: Clay Tile Roof	Remove tiles and preserve for reuse	10 SQ	$225.00	$2,250.00
High	Roof: Clay Tile Roof	Apply temporary roll roofing	10 SQ	$149.00	$1,490.00
			Total High Priority Stabilization Treatment Costs:		$11,762.45

Total Stabilization Treatment Cost: $11,762.45

Total Net Cost: Kitchen $88,151.99

Treatment Cost Summary: Office & Kitchen Site

Treatment Type: Rehabilitation

Priority	Feature Name	Treatment Description	Quantity	Unit Cost	Total Cost
High	Site: Utilities	Site utilites (lump sum allowance)	1 LS	$15,000.00	$15,000.00
		Total High Priority Rehabilitation Treatment Costs:			$15,000.00
Medium	Site: Vegetation and Grading	Repair stone wall at SE corner of Kitchen	15 SF	$45.00	$675.00
Medium	Site: Vegetation and Grading	Remove existing asphalt paving	1,200 SF	$0.46	$552.00
Medium	Site: Vegetation and Grading	Install new concrete pad at east elevation	496 SF	$0.86	$426.56
		Total Medium Priority Rehabilitation Treatment Costs:			$1,653.56
Total Rehabilitation Treatment Cost:		$16,653.56			

Treatment Type: Stabilization

Priority	Feature Name	Treatment Description	Quantity	Unit Cost	Total Cost
Critical	Site: Vegetation and Grading	Re-grade around foundation	800 SF	$0.80	$640.00
Critical	Site: Vegetation and Grading	Remove trees and vegetation	1 LS	$3,625.00	$3,625.00
		Total Critical Priority Stabilization Treatment Costs:			$4,265.00
Total Stabilization Treatment Cost:		$4,265.00			
		Total Net Cost: Office & Kitchen Site			$20,918.56

Total Net Construction Cost:	$185,142.58
General Conditions (15% Net):	$27,771.39
Design Costs (10% Net):	$18,514.26
Construction Contingency (15% Net):	$27,771.39
Total Rehabilitation Cost:	**$259,199.61**

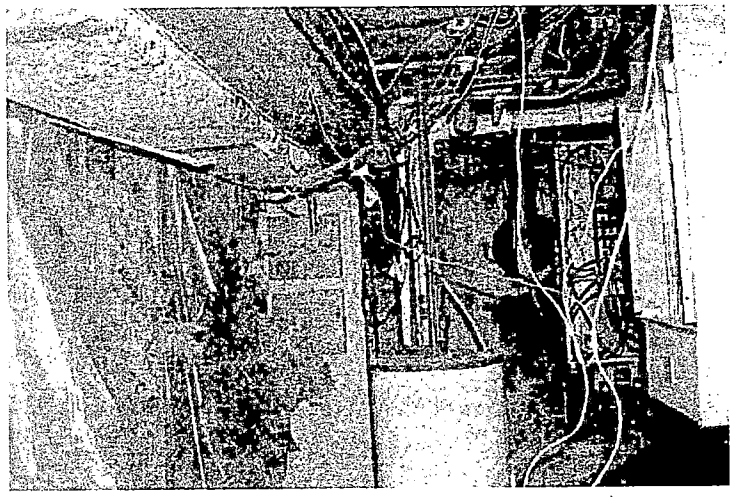
Historic Structures Report

Benson's Property
Town of Hudson, New Hampshire
June 16, 2003 – 100% Submittal

Benson's Office and Kitchen

Feature Inventory and Condition Assessment

Building Interior



Feature Description:

The interior of the Office was originally one undivided space with a high open ceiling. It has since been subdivided into three rooms with the addition of a full height partition wall to create a bathroom and another small room on the north end of the building. The space above the 8' ceiling of the new rooms is an unfinished loft space accessed by a hatch in the bathroom ceiling. The large room has built in cabinets along most of the length of the east wall. Floors are carpeted. The ceiling of the large room has been finished with v-groove T&G siding to conceal the unpeeled log rafters and rustic, rough sawn board roof sheathing. Four 6"x 8" rough sawn beams span the width of the room at rafter plate height. These beams appear to have been added at the same time the ceiling was cased in. The top surfaces of the beams have small wooden dowels set into their top surfaces at regular intervals, with smaller diameter dowels let into the verticals, running the length of the beams. The function of the dowels is uncertain. The gable roofed dormer is completely blocked by the ceiling paneling, and the shed roofed dormer is concealed in the loft space above the dropped ceiling. Some fixtures remain including a ceiling fan and track lighting in the large room.

The cellar occupies the entire building footprint. It also was originally a single open space, accessed by a hatch and stairs along the north wall. It was later subdivided into three space with the construction of a walk in cooler of insulated stud wall and plywood construction on a raised wood floor. The room to the north of the walk in freezer is unfinished with exposed concrete and stone walls and houses the mechanical systems, electrical panels, hot water heater, and sump pump. The room to the south of the walk in cooler is finished with homosote wall paneling and ceiling on wood furring. This room apparently served as a pantry for the food service operation. The cellar has a poured concrete floor throughout.

Quantity:	Measurement unit:	Condition Rating:
1	LS	Poor

Feature Condition:

The Office interior has been suffered considerable damage from neglect and vandalism. Bathroom fixtures have been removed or damaged. The mechanical and electrical systems in the cellar are a composite of different periods and ad hoc repairs and additions, most of which served functions that no longer exist, such as alarm panels for the Park. Many of the mechanical and electric systems do not meet code. All have deteriorated during the period of abandonment. In order to rehabilitate the building for a contemporary function, all post 1950 mechanical and electrical systems should be removed, along with later partitions and construction such as the walk in cooler.

Building Interior

Treatment Type: Stabilization

Priority: High

Treatment Description: Debris removal and selective demolition

Remove non-historic interior partitions, cabinets, fixtures, paneling, equipment, ductwork, wiring, and plumbing. Comple all demolition work to insure that underlying substrates and historic materials and finishes are not damaged.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
1332 SF	$7.05 SF	$9,390.60

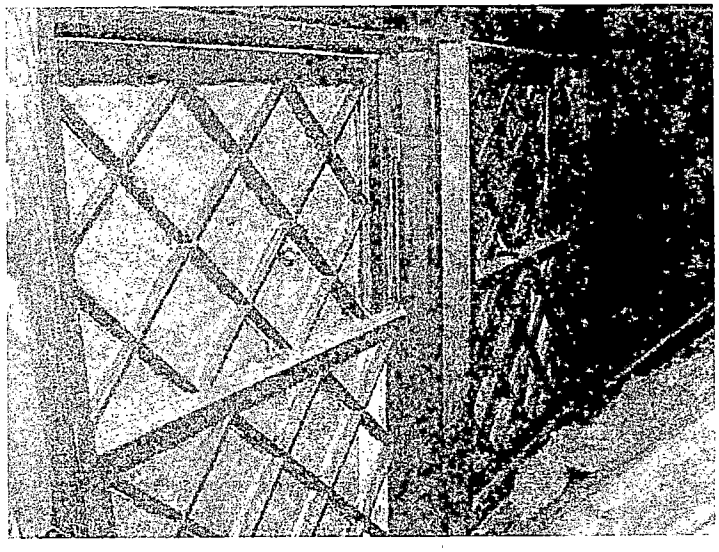
Treatment Reference: **CSI Division:** Division 1- General Requirements

2003 RS Means Building Construction Cost Data, page. 40. Section 02225-1020.

Stabilization Treatment Cost Total: $9,390.60

References:

Exterior Openings: Windows



Feature Description:

The Office contains a mix of fixed, casement, and double-hung wood sash windows. The west façade contains a pair of large fixed 24-lite wood windows, each approximately 5'- 8" x 4'- 8", and one 6-lite, single-hung window in what is presently the bathroom. This window may have served as a cashier's window for the office since there is an 8" wide shelf at the base of the window on the building exterior.

The north elevation originally had a large window centered immediately under the roof ridge. The opening measures 37"x 56". The window and casing has been removed, and any exterior evidence of the opening is hidden by the contemporary vinyl siding. The dimensions and construction of the north elevation suggest that this opening was filled with a double-hung wood window, possibly 2/2 or 4/4. There is a single window opening at the first floor level approximately 31"x 45". A 20"x 30" window opening in the basement is completely obscured by the raise in grade level. The sash is missing from this window and the opening infilled with plywood.
The east elevation contains three windows at the first floor level. Two casement windows have diamond-shaped divided lights with 7 full panes, and 10 half-panes. These windows measure 24"x 36" each. The remaining first floor window is approximately 30"x 38" with 2, 6-lite wood casement sash. The basement level has one 40"x 58" window opening, and one 24"x 36" opening. The window sash has been removed from both openings, and no evidence remains of the former window configuration. Two single, 6-lite wood casement windows approximately 24" square flank the stone chimney on the south elevation.

Quantity:	Measurement unit:	Condition Rating:
16	Ea	Poor

Feature Condition:

Many of the windows are missing or seriously damaged by vandalism. The plywood panels that have been nailed or screw to the building exterior are causing ongoing damage to the structure due to lack of building ventilation. They also hinder attempts to inspect or work on the building, and present a derelict uncared for appearance. Temporary, ventilation plywood window closure panels are urgently needed to allow proper building ventilation until final rehabilitation work is completed. All existing windows should be repaired or replaced in-kind.

Exterior Openings: Windows

Treatment Type: Preservation

Priority: High

Treatment Description: Repair historic windows in-kind

Salvage all existing window sash units and components including sash weights and hardware. Fabricate missing or damaged sections of stile, rails and muntins to match historic profiles using No. 1 Northeastern White Pine. Reassemble windows using the original joinery methods. Brush apply two coats of oil-based primer, such as California brand "Trouble Shooter" to window sash.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
15 Ea	$250.00 Ea	$3,750.00

Treatment Reference: **CSI Division:** Division 8 - Doors and Windows

See Preservation Brief #9: The Repair of Historic Wood Windows. <http://www2.cr.nps.gov/tps/briefs/presbhom.htm>

Preservation Treatment Cost Total: $3,750.00

Treatment Type: Stabilization

Priority: High

Treatment Description: Install temporary ventilated window closure panels

Construct temporary window closure panels using 1/2" CDX plywood with 12" square lexan vision panels and prefabricated louvered ventilation screens. Bring the upper and lower sash of the double hung unit to the mid-point of the opening and install pre-cut plywood panels using long carriage bolts anchored into horizontal wooden bracing, or strong backs, on the inside face of the window. Do not screw or nail panels into window sash or casings. Paint the exterior of the plywood panels to retard delamination of the plywood. See Preservation Brief #31: Mothballing Historic Buildings <http://www2.cr.nps.gov/tps/briefs/brief31.htm>

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
16 Ea	$189.00 Ea	$3,024.00

Treatment Reference: **CSI Division:** Division 7 - Thermal and Moisture Protection

Cost based on caparable material and labor costs for similar stabilization projects. Louvered panels available from McMaster Carr Supply Company: <http://www.mcmaster.com> Use 12"x 18" natural aluminum, Part No. 2038K62.

Stabilization Treatment Cost Total: $3,024.00

References:

Photograph shows interior of North Dormer Windows. Lisa Sasser (November, 2002)

Exterior: Clapboard Siding

Feature Description:

The North elevation is covered with tongue & groove double Clapboards. Tine lumber planed 4 sides with tongue and groove edges with two bevels on one side giving the appearance of two rows of clapboards. For use as exterior siding.

Quantity:	Measurement unit:	Condition Rating:
300	SF	Fair

Feature Condition:

The existing clapboard siding is in good condition.

Treatment Type: Preservation

Priority: High

Treatment Description: Remove vinyl siding and cornice

Remove vinyl siding and cornice. Coordinate work with roof replacement and repair of wood cornice.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
180 SF	$0.58 SF	$104.40

Treatment Reference: **CSI Division:** Division 7 - Thermal and Moisture Protection

2003 National Repair and Remodeling Estimator, p. 72

Exterior: Clapboard Siding

Treatment Description: Replace missing/damaged siding

Replace missing or damaged sections of siding with #4, 1"x 8" Eastern White Pine, double clapboard siding. Note: this is not a commonly available siding pattern. It can be ordered from specialty lumber supply companies.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
25 SF	$3.32 · SF	$83.00

Treatment Reference: **CSI Division:** Division 7 - Thermal and Moisture Protection

Source for #4, 1"x8" double clapboard T&G siding: Rand Lumber Company. 511 Wallis Road. Rye, NH 03870. 800-43: 4494. http://www.randlumber.com. Labor estimate 2002 National Repair and Remodeling Estimator, p. 229

Treatment Description: Replace missing section of wood cornice

Match existing cornice projection and profile, and return.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
6 LF	$25.00 LF	$150.00

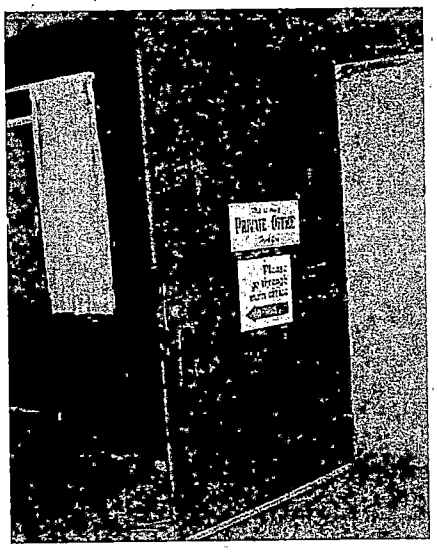
Treatment Reference: **CSI Division:** Division 6 - Wood and Plastics

2003 RS Means Repair and Remodeling Data, Section 06200, 500-2200, p. 131. Three piece built-up pine exterior molding.

Preservation Treatment Cost Total: $337.40

References:

Exterior: Doors



Feature Description:

Of the three first floor doors to the Office, only one the one on the west elevation is presently operable. The east elevation door opened on to a deck which no longer exists. Two original entrances are placed opposite each other on the east and west walls. A boarded up door located on the north elevation formerly accessed the First Aid building. This door location appears to be original to the construction of the building. A cutout in the clapboard sheathing above the door indicates that there was originally a small projected gable roof sheltering the door. The basement had one exterior door in the masonry foundation wall at the southeast corner of the building. The passageway between the Office and Kitchen had a single door opening in the masonry wall of the south elevation west of the chimney.

Quantity:	Measurement unit:	Condition Rating:
5	Ea	Fair

Feature Condition:

The east and west elevation doors in the first floor are in good condition, although the east door cannot be used due to the demolition of the exterior deck. The north elevation door exists, but is boarded up on the exterior. Both of the cellar doors are missing.

Treatment Type: Rehabilitation

Priority: High

Treatment Description: Install deck and stair at east door

Construct new pressure treated wood stairs and landing to serve the first floor east elevation door.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
1 LS	$1,200.00 LS	$1,200.00

Treatment Reference: **CSI Division:** Division 6 - Wood and Plastics

Comparable project costs

Exterior: Doors

Treatment Description: Rehabilitate north elevation door

Install new wood four panel door, steps, and projected gable roof.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
1 LS	$1,200.00 LS	$1,200.00
Treatment Reference:	**CSI Division:**	Division 8 - Doors and Windows
Comparable project costs		

Treatment Description: Frame and install 2 new cellar doors

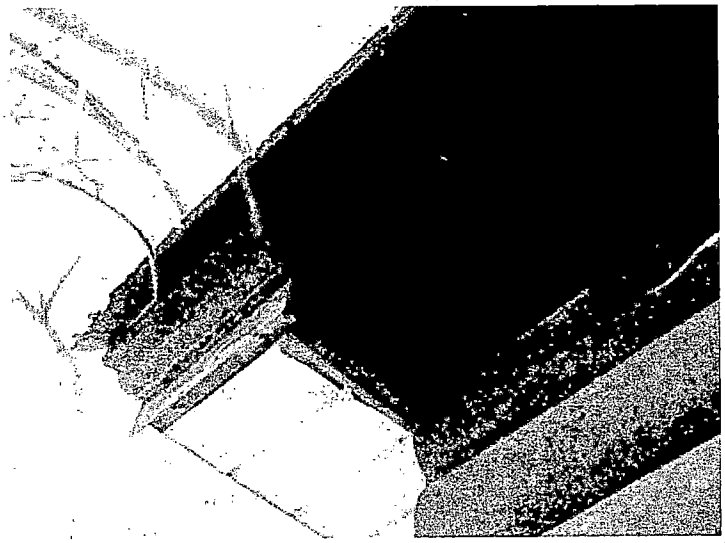
Rough in, frame and install new wood cellar doors, including hardware and locksets.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
2 Ea	$500.00 Ea	$1,000.00
Treatment Reference:	**CSI Division:**	Division 8 - Doors and Windows
Comparable project costs		

Rehabilitation Treatment Cost Total: $3,400.00

References:

Exterior: Finishes



Feature Description:

All exterior wood work on the Benson's Office was painted. The earliest paint layer on window and architectural trim is green. The paint on the exterior surfaces of the original deck encapsulated in the later enclosure of the passageway between the Office and Kitchen is the same green as the earliest paint layer on the architectural trim. Since the deck was original to the construction of the Office, the green trim is the original paint color. All exterior siding, log rafter tails, and dormer cheeks and faces, were painted brown.

Quantity:	Measurement unit:	Condition Rating:
1,638	SF	Poor

Feature Condition:

All exterior paint surfaces have either failed completely, exposing the underlying wood substrate, or display extensive peeling, cracking, and alligatoring.

Treatment Type: Preservation

Priority: High

Treatment Description: Paint exterior architectural trim

Wash, scrape, sand, prime, caulk, and paint the exterior of the Office. Apply finish material when temperature is 50 degrees F or above. Do not apply exterior materials in damp, rainy weather. Brushwork only. One coat alkyd primer, tw coats, exterior oil-based paint.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
450 SF	$2.25 SF	$1,012.50
Treatment Reference:	**CSI Division:**	Division 9 - Finishes

Exterior: Finishes

Treatment Description: Paint exterior siding

Wash, scrape, sand, prime, caulk, and paint the exterior of the Office. Apply finish material when temperature is 50 degrees F or above. Do not apply exterior materials in damp, rainy weather. Brushwork only. One coat alkyd primer, tw coats, exterior oil-based paint.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
1638 SF	$2.25 SF	$3,685.50
Treatment Reference:	**CSI Division:**	Division 9 - Finishes
2003 RS Means Repair and Remodeling Data		
	Preservation Treatment Cost Total:	$4,698.00

References:

Photograph of northwest corner of Office shows under layer of green paint on cornice and architectural trim, below brown coat. Exterior siding, rafter tails, and wall surfaces are brown.

Exterior: Novelty Log Siding

Feature Description:

The west and south elevations of the Benson's office are covered with 2"x 6" (5-inch exp.) Northern White Cedar, D-log siding. The log siding is original to the construction of the Benson's office, and is a significant character-defining feature, giving the building much of it's rustic character. The corner joints are covered with 3/4" quarter round moulding.

Quantity:	Measurement unit:	Condition Rating:
1	LS	Fair

Feature Condition:

The log siding is in generally fair condition. There is an area of missing siding on the south elevation. The two base courses on the west elevation are severely deteriorated as a result of raised grade and sustained earth contact.

Treatment Type: Preservation

Priority: High

Treatment Description: Replace missing/deteriorated siding

Replace in-kind with Northern White Cedar D-log siding. White cedar should be used for replacement materials in preference to NE White Pine because of its decay resistance. Replace missing quarter round corner trim.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
150 SF	$5.50 SF	$825.00

Treatment Reference: **CSI Division:** Division 7 - Thermal and Moisture Protection

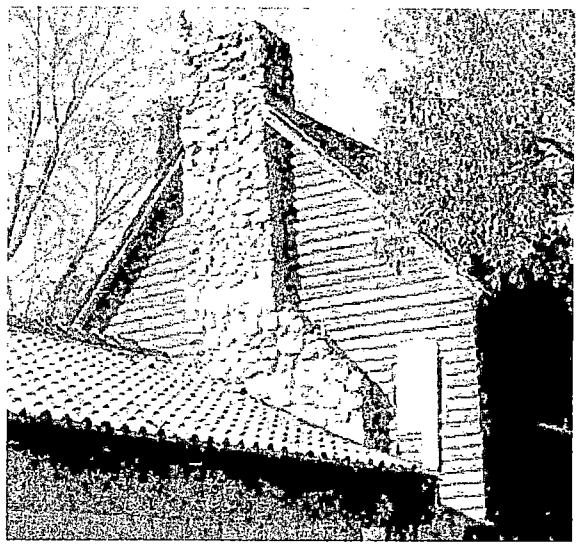
Materials source: B&H Log Homes. 65 Nottingham Drive. Fredericksburg, VA 22406. 540-752-4106. http://www.cedar-log-homes.com. Material costs $4.48 sf .

Preservation Treatment Cost Total: $825.00

References:

Labor cost data from 2003 RS Means Repair & Remodeling Cost Data, 24th Edition: Commercial/Residential.

Exterior: Stone Chimney



Feature Description:

The chimney is constructed of random rubble field stone, laid up in gray Portland cement mortar. It is original to the construction of the Office Building and is a significant character-defining feature. The chimney is constructed on a concrete foundation.

Quantity:	Measurement unit:	Condition Rating:
1	Ea	Good

Feature Condition:

The chimney is in good condition and shows no signs of settlement or cracking. Replace sheet metal flashing at the wood shingle roof and lower level connector roof (see specific treatment recommendations associated with these features). There is no chimney cap which may allow some moisture penetration into the building interior. Shrinkage of the D-log siding adjacent to the chimney may be allowing some moisture into the building interior.

Treatment Type: Preservation

Priority: High

Treatment Description: Caulk joint between masonry and D-log siding

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
32 LF	$2.89 LF	$92.48

Treatment Reference: **CSI Division:** Division 7 - Thermal and Moisture Protection

Treatment Description: Fabricate and install chimney cap

Fabricate and install galvanized steel chimney cap. Do not use ferrous metal fasteners to secure the chimney cap to the chimney.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
1 Ea	$195.00 Ea	$195.00

Treatment Reference: **CSI Division:** Division 5 - Metals

2003 RS Means Repair and Remodeling Data, Section 103100-0050, p. 247. Galv. Chimney screen, 24"x24" flue.

Exterior: Stone Chimney

Preservation Treatment Cost Total: $287.48

References:

Exterior: Wood Shingle Roof

Feature Description:

The roof of the Benson's Office is covered with cedar shingles at 5-1/2" exposure. Wood shingles are original to the construction of the Office. It has not been determined if this is the original roof. The wood shingled roof contributes significantly to the architectural character of the Office, and should be replaced in-kind.

Quantity:	Measurement unit:	Condition Rating:
12	SQ	Poor

Feature Condition:

The roof covering is nearing the end of its useful life. Although there is minimal evidence of active leaks, the roof surface has suffered mechanical damage and ultraviolet breakdown. There are areas of cracked, missing, and broken shingles. Much of the ridge is missing or damaged. With best quality materials and installation practices, wood shingle roofs have a potential lifespan of 20+ years. If lesser quality materials are used, or installation recommendations are not carefully followed, wood shingle roofs can fail within 7-10 years. Investing in the highest quality materials and selecting an experienced installer are critical to achieving satisfactory performance.

The Office does not appear to have had any original insulation. The open roof system of unpeeled log rafters and exposed 1" board sheathing would have had very poor insulation qualities. If the interior of the Office is to be restored to its original open appearance, consideration should be given to installing a layer of rigid foam insulation between the existing board sheathing and new plywood roof. The new insulation layer will add to the apparent thickness of the roof, and require the installation of a wood trim piece at the eaves. This minor alteration of the historic period appearance may be an acceptable trade-off for added energy efficiency for year-round use. Similar insulated roof systems have been used to retrofit historic structures such as the Burlingham Barn at Weir Farm National Historic Site in Wilton, CT.

Exterior: Wood Shingle Roof

Treatment Type: Rehabilitation

Priority: High

Treatment Description: Install roof insulation

Install rigid insulation over existing wood roof sheathing, with continuous 2"x 4" nailers spaced at 2'-0". 1/2" plywood nailing surface, and breathable nailing surface for installation of wood shingle roof. Add new wood trim at eaves, and paint to match building trim color.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
1200 SF	$3.65 SF	$4,380.00

Treatment Reference: **CSI Division:** Division 7 - Thermal and Moisture Protection

Comparable SF cost for a similar project at Weir Farm National Historic Site, Wilton, CT, 2002.

Treatment Description: Install new cedar shingle roof

18" Perfections at 5-1/2" exposure. See Cedar Shake and Shingle Bureau Design and Application Manual for Exterior and Interior Walls. Includes tear-off, misc flashing repair/replacement, and accessories.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
1200 SF	$16.00 SF	$19,200.00

Treatment Reference: **CSI Division:** Division 7 - Thermal and Moisture Protection

2003 National Construction Estimator, and comparable costs for similar projects.

Rehabilitation Treatment Cost Total: $23,580.00

Treatment Type: Stabilization

Priority: High

Treatment Description: Install temporary roll roofing

Install temporary roll roofing as an interim stablization measure until funding is available for rehabilitation

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
12 SQ	$149.00 SQ	$1,788.00

Treatment Reference: **CSI Division:** Division 7 - Thermal and Moisture Protection

Stabilization Treatment Cost Total: $1,788.00

References:

Photograph source: 1992 DOT survey

Exterior: Wood Shingle Siding

Feature Description:

The east elevation is covered with red cedar shingles at 5" exposure. Patching has taken place adjacent to, and below the door, probably to cover a former stair location. Metal flashing and roof tar define the former deck location. The corners are covered with 1"x4" boards.

Quantity:	Measurement unit:	Condition Rating:
3	SQ	Fair

Feature Condition:

Wood shingles are in fair condition. The removed deck is allowing moisture penetration and deterioration of the wood sill and projected beams.

Treatment Type: Preservation

Priority: High

Treatment Description: Replace wood shingle siding and SE corner board

Replace wood shingle siding with Certi-Grade, No. 1 Blue Label, 16" cedar shingles at 5" exposure to match existing, following the installation specifications of the Cedar Shingle and Shake Bureau. Reflash window and door openings with 16 oz. Lead coated copper (http://architecture.copper.org).

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
345 SF	$16.00 SF	$5,520.00

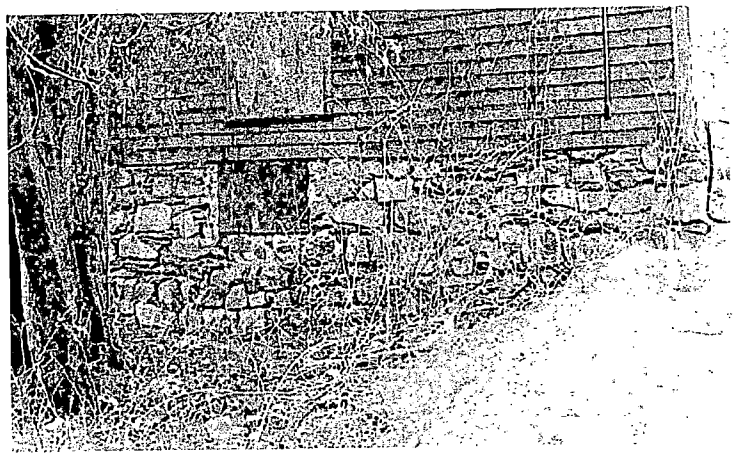
Treatment Reference: **CSI Division:** Division 7 - Thermal and Moisture Protection

Cedar Shingle and Shake Bureau: http://www.cedarbureau.org/. Cost data from 2003 National Construction Estimator, and comparable costs for similar projects.

Preservation Treatment Cost Total: $5,520.00

References:

Foundation: Stone



Feature Description:

The building is located on a steeply pitched site, sloping from the northwest to southeast corner, exposing the fully height of the stone foundation wall along much of the east elevation. The random rubble stone wall is laid on a poured concrete footing. In the northwest corner of the structure the footing is poured against granite ledge, which appears within the basement. The basement has a full concrete floor slab.

Quantity:	Measurement unit:	Condition Rating:
1	LS	Good

Feature Condition:

The stone foundation is generally in good condition although there are a few areas that need repointing.

Treatment Type: Preservation

Priority: High

Treatment Description: Minor repointing of existing stone masonry

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
150 SF	$15.00 SF	$2,250.00
Treatment Reference:	**CSI Division:**	Division 4 - Masonry

Comparable project costs

Treatment Description: Install subsurface foundation drainage

Trench along the foundation wall to a depth of 24" and install perforated schedule 40 PVC pipe, wrapped in filter fabric, bedded in crushed stone. Conduct pipe to a daylight exit well removed from the structure.

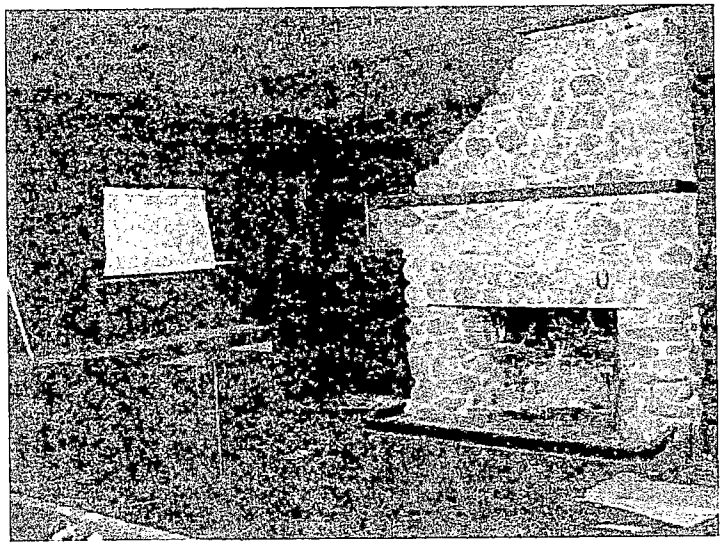
Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
50 LF	$25.00 LF	$1,250.00
Treatment Reference:	**CSI Division:**	Division 2 - Sitework

Preservation Treatment Cost Total: $3,500.00

Foundation: Stone

References:

Interior Finishes



Feature Description:

All of the original finish materials of the original Office remain intact under the applied finishes and additions. The first floor of the Office consisted of one large undivided space with an open ceiling and D-log wall paneling. The stone chimney is the principal interior feature of the space.

Quantity:	Measurement unit:	Condition Rating:
1	Ea	Fair

Feature Condition:

The interior D-log wall siding is in relatively good condition. The original floor surface is hidden below the existing carpet and plywood, but was probably wood. After removal of the existing floor covering a determination can be made whether to restore the existing flooring or add a new floor surface. The stone chimney is in good condition and should be retained along with the stone hearth, railroad track hearth railing, log mantel, and mule shoe hardware. The originally roof system of unpeeled log rafters and rough sawn board sheathing is anticipated to be in good condition after removal of the applied finish materials

Treatment Type: Rehabilitation

Priority: High

Treatment Description: Clean and refinish interior wall panelling

Clean and varnish interior wall panelling. Include spot sanding and staining of damaged finishes to match.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
650 SF	$2.25 SF	$1,462.50
Treatment Reference:	**CSI Division:**	Division 6 - Wood and Plastics

Interior Finishes

Treatment Description: Refinish original floors

Sand and finish with 2 coats polyurethane.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
595 SF	$1.87 SF	$1,112.65

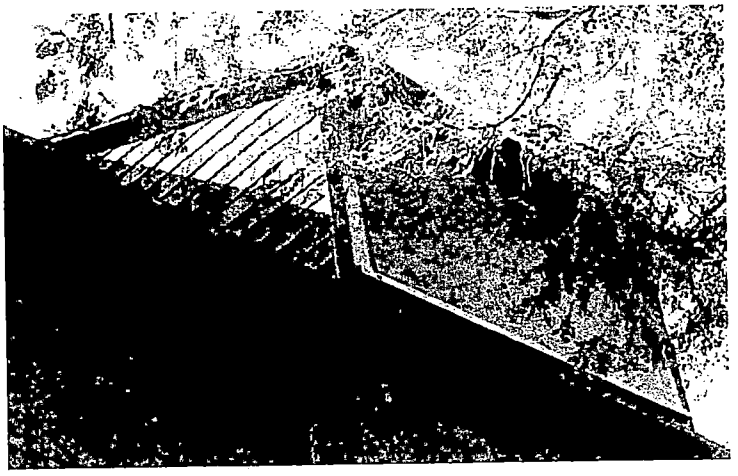
Treatment Reference: **CSI Division:** Division 6 - Wood and Plastics

2003 RS Means Repair and Remodeling Cost Data, page 225. Section 09648-7800.

Rehabilitation Treatment Cost Total: $2,575.15

References:

Roof: North Dormer



Feature Description:

The north dormer is original to the construction of the office. It is a shed type dormer at a 5:12 pitch, framed with unpeeled pine log rafters spaced at 2'-0" o.c., on 2" x4" framed cheek walls. The rafters are approximately 5" in diameter, with the top face flattened. The cheek wall sheathing is composed of beaded 6" tongue & groove paneling clad with red cedar shingles. The roof is sheathed in rough sawn pine boards with waney edges. The dormer roof is clad with red cedar shingles. The east face of the dormer contains three double-hung wood sash windows with diamond pattern 7-full and 10-half lites each. The sash are counter-balanced with iron weights, and were intended to be operable. The windows originally provided light to the open main office interior. Construction of a separate room partition and ceiling in the 1970's removed the windows as a source of natural light to the interior, and the dormer was sealed and insulated with fiberglass batt insulation.

Quantity:	Measurement unit:	Condition Rating:
1	Ea	Fair

Feature Condition:

The dormer roof framing and cheek walls are in good condition. The wood shingled dormer roof is poor condition, similar to the main roof surface, and needs to be replaced. The shingle siding of the dormer cheek walls, and all metal flashing should be replaced at the same time. The window sash is intact, but requires reglazing and painting. Application of new wood shingles to the dormer roof and cheek wall is covered under replacement of the wood shingle roof. Repair of the window opening is covered under the exterior window feature

References:

Roof: South Dormer

Feature Description:

The south dormer is original to the construction of the office. It is a gable roof dormer, framed with unpeeled pine log rafters spaced at 2'-0" o.c., on 2" x4" framed cheek walls. The rafters are approximately 5" in diameter, with the top face flattened. The cheek wall sheathing is composed of beaded 6" tongue & groove paneling clad with red cedar shingles. The roof is sheathed in rough sawn pine boards with waney edges. The dormer roof is clad with red cedar shingles. The east face of the dormer contains one window opening. The window originally provided light to the open main office interior. Installation of v-grooved paneling on the ceiling surface blocked access to the dormer from the building interior

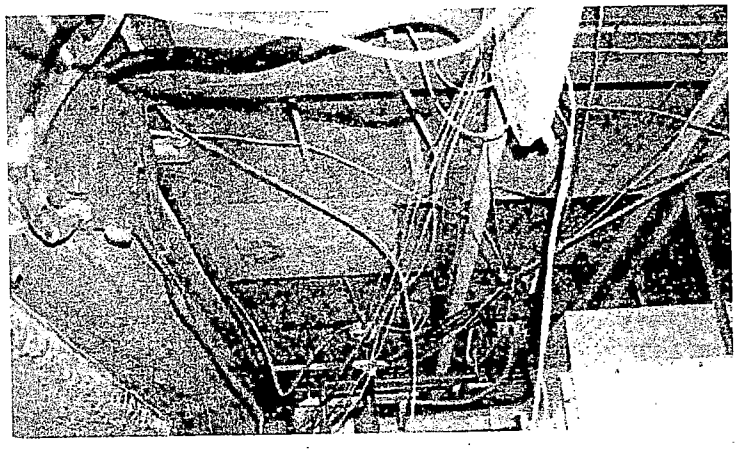
Quantity:	Measurement unit:	Condition Rating:
1	Ea	Good

Feature Condition:

Application of new wood shingles to the dormer roof and cheek wall is covered under replacement of the wood shingle roof. Repair of the window opening is covered under the exterior: window feature.

References:

Structure: Floor Framing



Feature Description:

Where visible in the north third of the cellar, the floors are framed with 2"x 8"s on 24 inch centers running north to south. Four large dimension (10" x 10" or 8" x 12") beams span the cellar east to west, and carry the floor joists. Three of the beams originally projected beyond the east wall to carry a wood framed deck at the location of the east elevation first floor door. No documentation has been located on the appearance of the deck with the exception of framing members on the south elevation where the connecting passage between the Office and Kitchen is now located. A remnant concrete footing is located 8'- 0" beyond the face of the building, which probably was the edge of the paved porch below the deck.

Quantity:	Measurement unit:	Condition Rating:
1	LS	Good

Feature Condition:

Internally the floor framing of the Office is in good condition. However, the cut off ends of the three projecting beams on the east elevation (2-10"x 10", 1-8"x 10") are vulnerable to moisture damage and rot. One of the three beams has rotted to a point within its bearing area in the masonry foundation wall.

Treatment Type: Rehabilitation

Priority: High

Treatment Description: Construct new cellar stair

Remove existing deteriorated cellar stair and fabricate new to match.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
1 LS	$125.00 LS	$125.00
Treatment Reference:	**CSI Division:**	Division 6 - Wood and Plastics
	Rehabilitation Treatment Cost Total:	$125.00

Treatment Type: Stabilization

Priority: High

Structure: Floor Framing

Treatment Description: Stabilize projecting wood beams

Cut project beam ends back flush with the wall face. Treat exposed beam ends with Bora-Care nontoxic, water soluable wood preservative. Install lead coated copper flashing and painted 1" wood cover over face of beam pockets.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
3 Ea	$50.00 Ea	$150.00

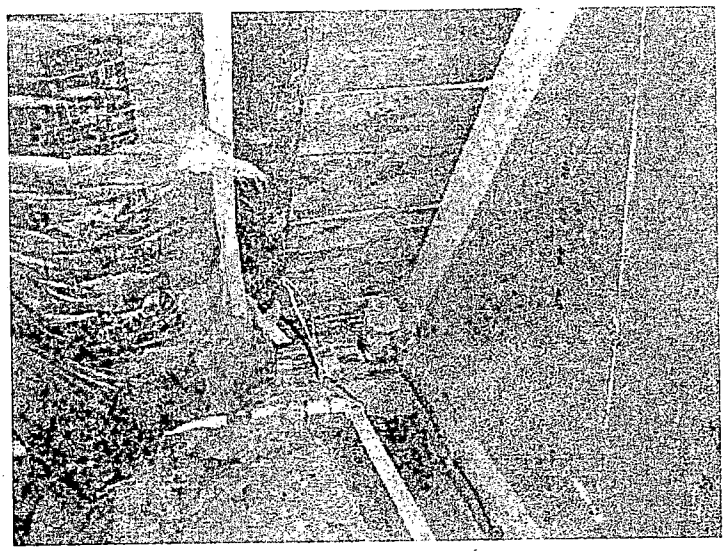
Treatment Reference: **CSI Division:** Division 7 - Thermal and Moisture Protection

Bora-Care products are available through the Preservation Resources Group Inc., Rockville, MD. 301-309-2222. <http://www.prginc.com>

Stabilization Treatment Cost Total: $150.00

References:

Structure: Roof Framing



Feature Description:

The Office roof is framed with unpeeled pine logs on 24" centers. The logs are flattened on the top bearing surface for an effective depth of approximately 5". The rafters are paired with no ridge. The log rafters are sistered with new 2"x 4"s. The roof is sheathed with 1"x 10" rough sawn boards with waney (bark on) edges. The north gable wall has a 1/2 log trim piece at rafter plate height. The log rafters and roof sheathing were designed to be visible. V-notch tongue and groove paneling was installed as a finish ceiling in the south room. In the attic space created by construction of the partition wall, fiberglass insulation was added, concealing the roof sheathing and rafters. At the corners of the north elevation wall, the rafters are cut off as exterior decorative elements only.

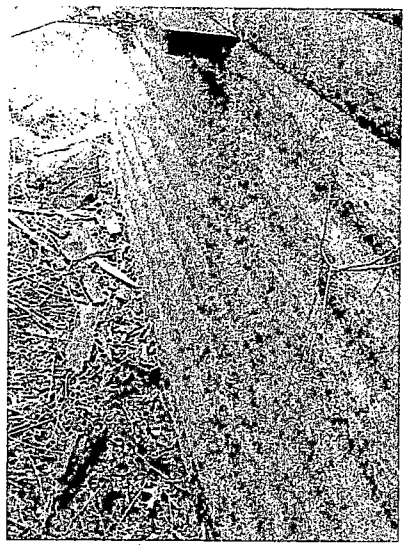
Quantity:	Measurement unit:	Condition Rating:
1	LS	Good

Feature Condition:

Although mostly concealed by the finish ceiling and insulation, the roof framing appears to be in good condition. There is no evident sagging, or deflection of the roof ridge. The condition of the roof sheathing should be inspected when the roof is replaced. There is minor evidence of roof leaks at the northwest corner of the building.

References:

Structure: Wall Framing



Feature Description:

The Office wall framing is conventional 2"x 4" stud wall construction.

Quantity:	Measurement unit:	Condition Rating:
1	LS	Fair

Feature Condition:

The raised grade level on the west elevation has caused extensive deterioration of the lower 2 courses of D-log siding. Some deterioration of the sill plate along this elevation is probable. Some sections of the sill may need to be replaced

Treatment Type: Preservation

Priority: High

Treatment Description: Replace deteriorated sill on west elevation

When deteriorated exterior siding is removed for replacement, inspect the condition of the sill and replace where necessary. Support the wall studs with external bracing and needling, cut out damaged sections of sill and stud ends where required. Replace sill with pressure treated dimension lumber and sister lower ends of walls studs.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
15 LF	$115.00 LF	$1,725.00
Treatment Reference:	**CSI Division:**	Division 6 - Wood and Plastics

Comparable project costs.

Preservation Treatment Cost Total: $1,725.00

Treatment Type: Rehabilitation

Priority: High

Structure: Wall Framing

Treatment Description: Install blown in cellulose insulation in walls

Install blown in cellulose insulation in wall cavities

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
650 SF	$1.54 SF	$1,001.00

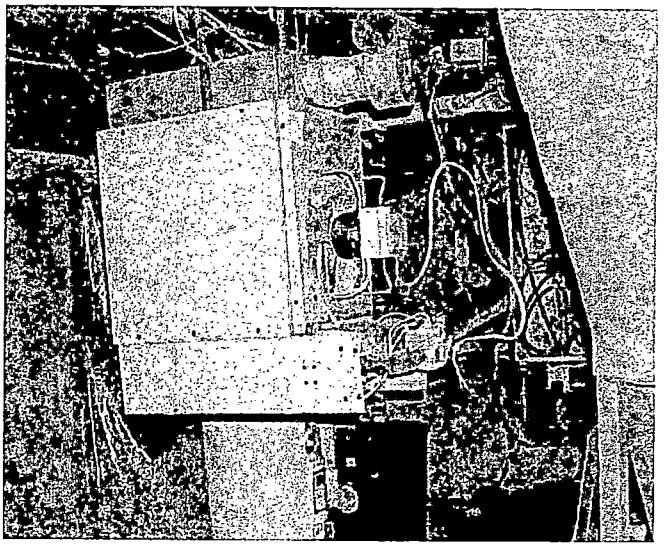
Treatment Reference: **CSI Division:** Division 7 - Thermal and Moisture Protection

2003 RS Means Repair and Remodeling Cost Data, page 145. Section 07200-2800.

Rehabilitation Treatment Cost Total: $1,001.00

References:

Utilities: Mechanical, Electrical, and Power



Feature Description:

Existing mechanical, electrical, and power features in the office are an ad hoc collection of parts and systems, many of which do not meet code. 200 amp/240 Volt electrical service enters the cellar below grade through a window in the north wall and a cast-in-place service chase in the west wall. Water lines also enter through the west wall service chase. An electrical panel and shut off are mounted on the cellar walls. Panels for phones and security systems are also located in the north room of the cellar. Another electrical panel containing fuses marked "Arthur's office" and "walk in cooler" is located on the north wall of the south room of the cellar. A gas-fired furnace and system of ducts provide hot air to registers in the first floor of the building. A gas fired unit heater is suspended from the attic floor framing, in a location that does not meet code required clearances. The condenser unit for the walk in cooler remains in place in the cellar interior. A 49 gallon water heater and 115 Volt sewage/sump pump complete the building MEP systems.

A single bathroom with toilet, shower, and sink was constructed on the first floor. The fixtures are missing or damaged.

Quantity:	Measurement unit:	Condition Rating:
1	LS	Poor

Feature Condition:

Most of the systems present in the building apparently date to the late 1970s or early 1980s. In many instances, electrical wiring and unit installations do not meet code, or standards of efficiency and safety required for reuse. All MEP systems should be replaced as part of the overall rehabilitation strategy. A single unisex bathroom should be installed in the first floor.

Utilities: Mechanical, Electrical, and Power

Treatment Type: Rehabilitation

Priority: High

Treatment Description: Install unisex bathroom

Rough in and install fixtures as follows to provide a complete unisex public restroom:
Provide domestic hot & cold water supply, vent & waste piping
Water closet
Lavatory, 20"x 18" porcelain enamel on cast iron with accessories
Mirror, 18"x 24", with stainless steel shelf
Soap dispenser, chrome, surface mounted
Toilet tissue dispenser, surface mounted, stainless steel
Towel dispenser, surface mounted, stainless steel

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
1 LS	$3,516.90 LS	$3,516.90

Treatment Reference: **CSI Division:** Division 15 - Mechanical

2003 RS Means Repair and Remodeling Cost Data, page 445. Americans with Disabilities Act Accessibilty Guidelines fo Buildings and Facilities: <http://www.access-board.gov/adaag/html/adaag.htm>

Treatment Description: Install hot water heater

Install 40 gallon gas fired hot water heater

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
1 LS	$605.00 LS	$605.00

Treatment Reference: **CSI Division:** Division 15 - Mechanical

2003 RS Means Repair and Remodeling Cost Data, page 326.

Treatment Description: Install fire alarm system

Install fire detection and alarm system

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
600 SF	$3.79 SF	$2,274.00

Treatment Reference: **CSI Division:** Division 16 - Electrical

Cost data source: National Park Service, Denver Service Center, Class "C" Estimating Guideline (2001).

Treatment Description: New electrical service, distribution, and wiring

Install commercial electrical service including service breakers, metering, 120/208 Volt, 3 phase, 4 wire, feeder and panel board in the cellar. Do not surface mount meter on the face of the building. Install new wiring throughout the building.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
600 SF	$9.23 SF	$5,538.00

Treatment Reference: **CSI Division:** Division 16 - Electrical

Cost data source: National Park Service, Denver Service Center, Class "C" Estimating Guideline (2001).

Utilities: Mechanical, Electrical, and Power

Treatment Description: Install new gas-fired hot air heating system

Install AFA certified gas furnace with gas piping, 44MBH with galvanized steel ducts with blanket type insulation. Provide 6" diameter flexible round ducts, 12"x 6" registers, and 38"x 18" return and damper.

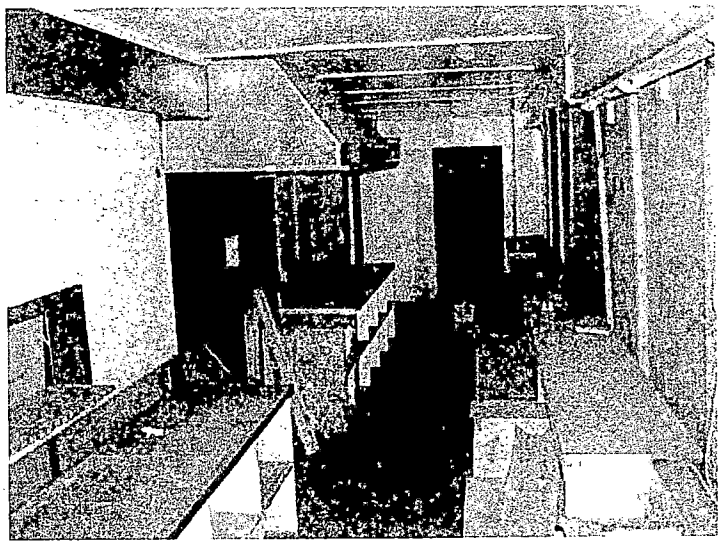
Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
600	$5.78	$3,468.00
Treatment Reference:	**CSI Division:**	Division 15 - Mechanical

2003 RS Means Repair and Remodeling Cost Data, page 461.

Rehabilitation Treatment Cost Total: $15,401.90

References:

Building Interior



Feature Description:

The Kitchen interior is configured for the food service operation of the Arthur Provencher period. All interior finishes, fixtures, and appliance are post-1950.

Quantity:	Measurement unit:	Condition Rating:
1	LS	Fair

Feature Condition:

The existing partitions, dropped ceiling, and food service equipment have no functional use in the rehabilitation of the Kitchen. The interior has been heavily vandalized.

Treatment Type: Rehabilitation

Priority: High

Treatment Description: Demolition of concrete floor slab

Remove concrete floor slab for structure rehabilitation (total includes passageway).

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
769 SF	$10.00 SF	$7,690.00
Treatment Reference:	**CSI Division:**	Division 4 - Masonry

2003 RS Means Building Construction Cost Data, page38. Section 0225-0250.

Treatment Description: Install new concrete slab for radiant heating

Install new 6" concrete slab, 3000 PSI concrete for installation of radiant flooring system.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
688 SF	$6.96 SF	$4,788.48
Treatment Reference:	**CSI Division:**	Division 3 - Concrete

Comparable project costs for a similar project at Weir Farm National Historic Site, Wilton, CT.

Rehabilitation Treatment Cost Total: $12,478.48

Building Interior

Treatment Type: Stabilization

Priority: High

Treatment Description: Debris removal and selective demolition

Remove all existing food service equipment, partitions and dropped ceiling.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
769 SF	$7.05 SF	$5,421.45

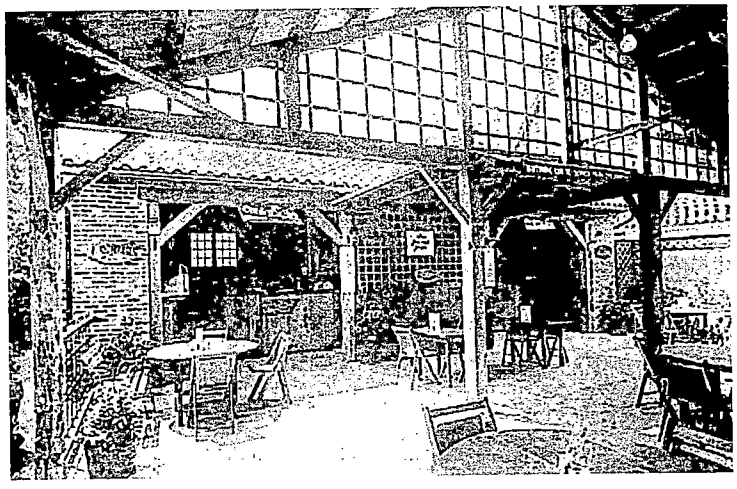
Treatment Reference: **CSI Division:** Division 1- General Requirements

2003 RS Means Building Construction Cost Data, page. 40. Section 02225-1020.

Stabilization Treatment Cost Total: $5,421.45

References:

Exterior Opening: East Elevation



Feature Description:

As originally designed the entire east wall of the Kitchen was open to the seating area of the timber framed pavilion which served as the Bavarian Beer Garden. The Beer Garden was 48' long by 36' wide with the gable roof oriented perpendicular to the Kitchen. As shown in the photograph opposite, the Beer Garden was originally open sided. The 1992 NHDHR photographs taken prior to demolition of the Beer Garden show that the walls were later fully enclosed.

The opening in the east wall of the Kitchen takes up most of the elevation, measuring 31' wide x 9'- 4" high. At the open east wall, the 6"x 8" plate is carried on a discontinuous 7"x 8" beam which formerly spanned the opening on two braced posts at the truss locations. Pegs in the beam show the former location of the mortise for the knee braces. The discontinuous beam on the east end contains a piece of circular sawn material, scored with an axe in an attempt to duplicate hand hewn material. When the two braced posts were removed from the opening at the east elevation, an 8"x 2-1/2"L x 1/4" steel I-beam was put in place to span the 31' opening, with a single steel pipe column at mid-span. The ends of the steel I-beam were crudely let into the brick end walls at the bearing points.

Historically the open wall of the Kitchen was a significant component of the functional and aesthetic qualities of the building. With the removal of the Beer Garden structure, the open wall is no longer functionally viable. Adaptive reuse of the Kitchen requires a permanent means of enclosing the east wall and the open east end of the passage between the Kitchen and Office. Specific design of the wall enclosure will depend in large part on the specific functional purpose identified for the Kitchen. It is possible to remove the steel I-beam installed to span the opening after removal of the braced posts, and restore the timber framing. The wall could then be framed in, or a new exterior vestibule with a flat roof constructed to serve as an entrance. Windows and doors could be fixed for year round use, or removable for seasonal use.

Quantity:	Measurement unit:	Condition Rating:
289	SF	Missing/unsalvageable

Feature Condition:

The opening is haphazardly covered with poorly fit plywood, conveying an appearance of neglect. The structure interior is not easily accessible for maintenance and inspection.

Exterior Opening: East Elevation

Treatment Type: Rehabilitation

Priority: High

Treatment Description: Construct door and frame at passage opening

Construct new frame and install wood door at opening to passageway.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
1 LS	$500.00 LS	$500.00

Treatment Reference: **CSI Division:** Division 8 - Doors and Windows

Comparable project costs

Treatment Description: Remove steel I-beam, replace braced timber posts

Remove existing steel I-beam, supporting the existing wood beam as necessary with cribbing and needle beams. Fabricate 4 new 8"x 8" x 9"- 4" hand hewn softwood posts. Fabricate 6 new 8" x8" hand hewn softwood braces to lengths determined by mortise locations on the underside of the wood beam and photographic evidence. Excavate for new poured concrete footings and raise post and brace assemblies into position in the existing mortises. Brace posts in place, and pour concrete footings.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
30 LF	$175.00 LF	$5,250.00

Treatment Reference: **CSI Division:** Division 6 - Wood and Plastics

Costs similar to sill replacement estimates for Haselton Barn.

Rehabilitation Treatment Cost Total: $5,750.00

Priority: Medium

Treatment Description: Construct new entrance vestibule

Construct new 8' x 32' entrance vestibule with flat roof, ADA accessible doorway, and appropriate fenestration. Frame construction and concrete slab on new poured footings, EPDM roof surface, brick facing to match existing brick. New wood windows and doors.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
256 SF	$91.90 SF	$23,526.40

Treatment Reference: **CSI Division:**

Cost data source: National Park Service, Denver Service Center Class "C" Estimating Guideline (2001). Comparable SF cost for new construction.

Rehabilitation Treatment Cost Total: $23,526.40

Treatment Type: Stabilization

Priority: High

Exterior Opening: East Elevation

Treatment Description: Install temporary infill and access wall

Remove existing plywood panels and construct a 2"x 4" framed stud partition covered on the exterior face with 1/2" CDX plywood with lexan vision lights and access door. Secure door with a hasp and padlock for access by authorized personn

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
289 SF	$6.00 SF	$1,734.00
Treatment Reference:	**CSI Division:**	Division 7 - Thermal and Moisture Protection

Treatment Description: Temporary infill at east passage opening

Remove existing plywood panels and construct a 2"x 4" framed stud partition covered on the exterior face with 1/2" CDX plywood with lexan vision lights and access door. Secure door with a hasp and padlock for access by authorized personn

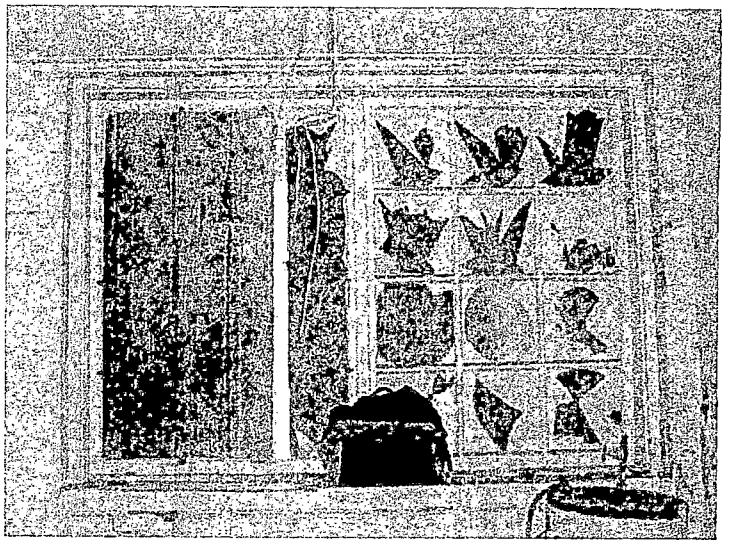
Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
50 SF	$6.00 SF	$300.00
Treatment Reference:	**CSI Division:**	Division 7 - Thermal and Moisture Protection

Stabilization Treatment Cost Total: $2,034.00

References:

Photograph courtesy of Robert J. Goldsack. Reproduced from Remembering Benson's Wild Animal Farm, Nashua, New Hampshire 1927-1987. Midway Museum Productions. Nashua, NH. 1988, page 19. (date of photograph unknown.)

Exterior Openings: Windows



Feature Description:

The Kitchen has four window opening. Two windows are spaced evenly on the west elevation, at grade level. The openings are 4'- 0" wide x 42" high, and contain a pair of 12-lite wood casement sash. There are two windows on the south gable end of the building flanking the chimney. The window to the right of the chimney is the larger of the two with an opening of 6'- 2" x 5' -6". It is closed on both the inside and outside with painted plywood. The window to the left of the chimney has an opening size of 6'- 6" x 4'- 8" with 2 wood, 12-lite casement sash. The 1992 NHDHR photographs show both window openings enclosed with painted plywood, apparently installed during the operational period of the Bavarian Beer Garden to close off the view of the food preparation area. The window to the east of the chimney is not accessible, but is assumed to also contain a pair of wood casement sash.

Quantity:	Measurement unit:	Condition Rating:
4	Ea	Poor

Feature Condition:

The 3 visible windows in the Kitchen have been damaged by vandals, and will require in-kind repair. The largest of the four windows is boarded up and may have escaped damage.

Treatment Type: Preservation

Priority: High

Treatment Description: Repair historic windows in-kind

Salvage all existing window sash units and components including sash weights and hardware. Fabricate missing or damaged sections of stile, rails and muntins to match historic profiles using No. 1 Northeastern White Pine. Reassemble windows using the original joinery methods. Brush apply two coats of oil-based primer, such as California brand "Trouble Shooter" to window sash.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
3 Ea	$500.00 Ea	$1,500.00

Treatment Reference: **CSI Division:** Division 8 - Doors and Windows

See Preservation Brief #9: The Repair of Historic Wood Windows. <http://www2.cr.nps.gov/tps/briefs/presbhom.htm>

Preservation Treatment Cost Total: $1,500.00

Exterior Openings: Windows

Treatment Type: Stabilization

Priority: High

Treatment Description: Install temporary ventilated window closure panels

Construct temporary window closure panels using 1/2" CDX plywood with 12" square lexan vision panels and prefabricated louvered ventilation screens. Bring the upper and lower sash of the double hung unit to the mid-point of the opening and install pre-cut plywood panels using long carriage bolts anchored into horizontal wooden bracing, or strong backs, on the inside face of the window. Do not screw or nail panels into window sash or casings. Paint the exterior of th plywood panels to retard delamination of the plywood. See Preservation Brief #31: Mothballing Historic Buildings <http://www2.cr.nps.gov/tps/briefs/brief31.htm>

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
3 Ea	$189.00 Ea	$567.00

Treatment Reference: **CSI Division:** Division 7 - Thermal and Moisture Protection

Cost based on caparable material and labor costs for similar stabilization projects. Louvered panels available from McMaster Carr Supply Company: <http://www.mcmaster.com> Use 12"x 18" natural aluminum, Part No. 2038K62.

Stabilization Treatment Cost Total: $567.00

References:

Exterior: Brick Chimney

Feature Description:

The 24" square brick chimney is centered on the ridge line of the gable roof, and extends 12 courses above the low point of the roof line.

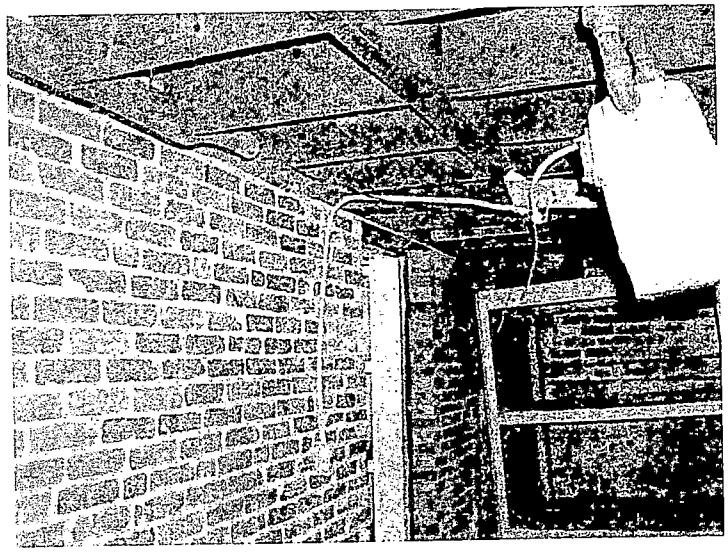
Quantity:	Measurement unit:	Condition Rating:
1	Ea	Good

Feature Condition:

The chimney is in good condition but will require new flashing when the clay tile roof in re-installed (covered under Clay Tile Roof Feature).

References:

Foundation Wall: Brick



Feature Description:

The brick walls of the Kitchen and connecting passage are 12-inch, 3-wythe brick laid in common bond on a concrete footing. The site is pitched from west to east, with the west wall functioning as a retaining wall, sloping to grade level on the east side. On the west elevation a concrete stem wall is poured to approximately the level of the exterior grade. There is a 24" square chimney on the south elevation. The north and south elevations of the brick wall are continuous up to the gable ridge. On the north elevation, a dimension lumber ledger is lagged into the brick to carry the framing for the roof of the connecting passage.

Quantity:	Measurement unit:	Condition Rating:
1	Ea	Good

Feature Condition:

The brick foundation wall is in remarkably good condition, and does not require major work. Installation of a subsurface drainage system is recommended along the entire west elevation.

Treatment Type: Preservation

Priority: High

Treatment Description: Install subsurface foundation drainage

Trench along the foundation wall to a depth of 24" and install perforated schedule 40 PVC pipe, wrapped in filter fabric, bedded in crushed stone. Conduct pipe to a daylight exit well removed from the structure.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
50 LF	$25.00 LF	$1,250.00
Treatment Reference:	**CSI Division:**	Division 2 - Sitework
	Preservation Treatment Cost Total:	$1,250.00

Treatment Type: Rehabilitation

Priority: High

Foundation Wall: Brick

Treatment Description: Remove ventilator and replace brick in-kind

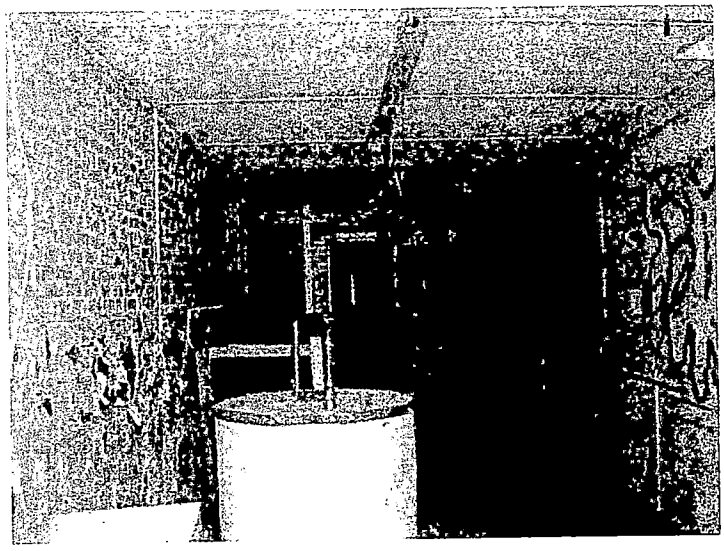
Remove the large exterior ventilation fan from the north elevation of the Kitchen exterior and replace brick in-kind matching brick size, color, texture, mortar color and joint tooling.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
9 SF	$45.00 SF	$405.00
Treatment Reference:	**CSI Division:**	Division 6 - Wood and Plastics
Comparable project costs		

Rehabilitation Treatment Cost Total: $405.00

References:

Interior: Finishes



Feature Description:

All interior finish surfaces including brick and concrete walls, wood roof sheathing and the roof structure were originally painted. The earliest color layer on the brick walls is red. The roof framing and sheathing shows the original yellow paint color in the attic space.

Quantity:	Measurement unit:	Condition Rating:
1	LS	Poor

Feature Condition:

Interior finishes are in poor condition and will require extensive surface preparation prior to repainting. Other non-period paint colors may be selected depending on the projected use of the space.

Treatment Type: Rehabilitation

Priority: High

Treatment Description: Install new resiliant flooring

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
688 SF	$1.58 SF	$1,087.04
Treatment Reference:	**CSI Division:**	Division 9 - Finishes

2003 RS Means Repair and Remodeling Cost Data, page 226. Section 09600-7000.

Treatment Description: Interior surface preparation and painting.

Was, scrape and paint interior wall surfaces, undeside of roof deck and roof framing.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
2400 SF	$2.25 SF	$5,400.00
Treatment Reference:	**CSI Division:**	Division 9 - Finishes

Comparable project costs.

Rehabilitation Treatment Cost Total: $6,487.04

Interior: Finishes

References:

Roof: Clay Tile Roof

Feature Description:

The tile roof is an original feature of the Kitchen, and is one of the most significant character-defining features of the structure. The roof tiles are fabricated by the Ludowici Roof Tile Company of New Lexington, OH, which has been in continuous production in the United States since 1888. Ludowici tile roofs are a feature of many important historic buildings including those at Ellis Island. The roof is made up of 13-1/4" x 9-3/4" Spanish tiles with a 10" exposure. Tile fittings include the distinctive ribbed ridge units, left and right-handed detached gable rakes, and top and eave-closure fittings.

Quantity:	Measurement unit:	Condition Rating:
8	SQ	Poor

Feature Condition:

The tile roof has been subjected to major damage from vandalism and overhanging trees and vegetation. Approximately 30% of the tile are missing or damaged beyond reuse. The remaining tiles and fittings are in salvageable and reusable condition. Because of the extremely high level of significance of this feature, every effort should be made to restore the tile roof, using all salvageable materials. The tiles and fittings are standard shapes and sizes, still manufactured by the Ludowici Company.

The roof should not be left in its present condition pending total structure rehabilitation. After removal and storage of the existing roofing tiles, installation of a temporary roll roof is recommended as an interim stabilization measure.

Treatment Type: Rehabilitation

Priority: High

Roof: Clay Tile Roof

Treatment Description: Install new tile roof (40% replacement)

Install Spanish tile roof using salvaged tiles and (40%) replacement tiles. Price includes an allowance for custom color matching and purchase of new tiles and accessories, new chimney flashings, and underlayerment.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
10 SQ	$650.00 SQ	$6,500.00

Treatment Reference: **CSI Division:** Division 7 - Thermal and Moisture Protection

See Preservation Brief #30: The Preservation and Repair of Historic Clay Tile Roofs.

Rehabilitation Treatment Cost Total: $6,500.00

Treatment Type: Stabilization

Priority: High

Treatment Description: Apply temporary roll roofing

Install 1 ply #15 organic felt, mineral selvage roofing, lap 19" nailed and mopped Installation of rolled roofing is a temporary stabilization measure to protect the structure for a period of 3-5 years pending general rehabilitation of the structure and re-installation of the clay tile roof.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
10 SQ	$149.00 SQ	$1,490.00

Treatment Reference: **CSI Division:** Division 7 - Thermal and Moisture Protection

2003 RS Means Repair and Remodeling Cost Data, page. 159. Section 07580-0200.

Treatment Description: Remove tiles and preserve for reuse

Remove all existing roof tiles and fittings using the greatest possible care to avoid additional damage or breakeage. Store salvaged tiles in banded wood crates, sorted by tile or fitting type, with number and type of contents clearly labelled on th crate in an indelible medium. Separate tile layers with building paper to avoid abrasion and damage. The tiles should be stored in a secure indoor space to avoid future damage or loss. Due to the high cost of replacement materials it is imperative that the dismantling and crating by executed by skilled preservation technicians to minimize breakage. Maintai sufficient samples of broken or damaged tiles to submit to Ludowicci for color and finish matching to facilitate ordering of replacement tiles and fittings.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
10 SQ	$225.00 SQ	$2,250.00

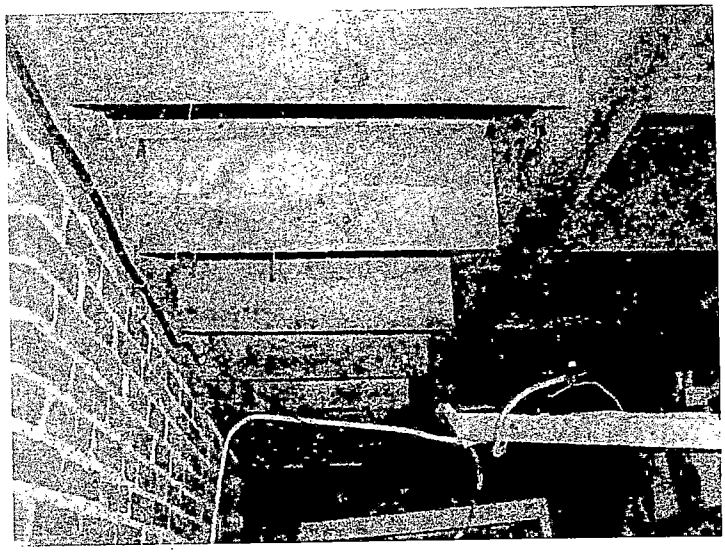
Treatment Reference: **CSI Division:** Division 7 - Thermal and Moisture Protection

See "The Shipping, Loading and Stacking of Roofing Tile" by Colonel Charles L. McGee.
<http://www.thetileman.com/art3.html>

Stabilization Treatment Cost Total: $3,740.00

References:

Structure: Connecting Passage Roof



Feature Description:

The covered passageway connecting the basement of the Office with the Kitchen is not original. The framing of the passageway roof indicates that the Office originally had an elevated walkway entered at grade from the southwest corner which continued around to the east elevation of the Office as a raised deck. The architectural evidence docs not indicate whether the Office or Kitchen was built first, although both structures are believed to have been constructed c.1930. The brick wall at the west end of the passage appears to be a later infill. There is no wall on the east elevation of the passage.

The deck was 36" wide at the outside face of the chimney, and framed with 2"x 8" joists on 24" centers. Original green paint, outlines of original post locations, and weathering indicate that this was an exterior walkway. The newer 2"x 8" joists that close off the passageway are shimmed on top, indicating that the walkway was slightly pitched away from the building to drain water.

Quantity:	Measurement unit:	Condition Rating:
108	SF	Good

Feature Condition:

The framing of the connecting passage roof is in good condition. However, the membrane roof surface above, and wall flashing needs to be replaced.

Treatment Type: Rehabilitation

Priority: High

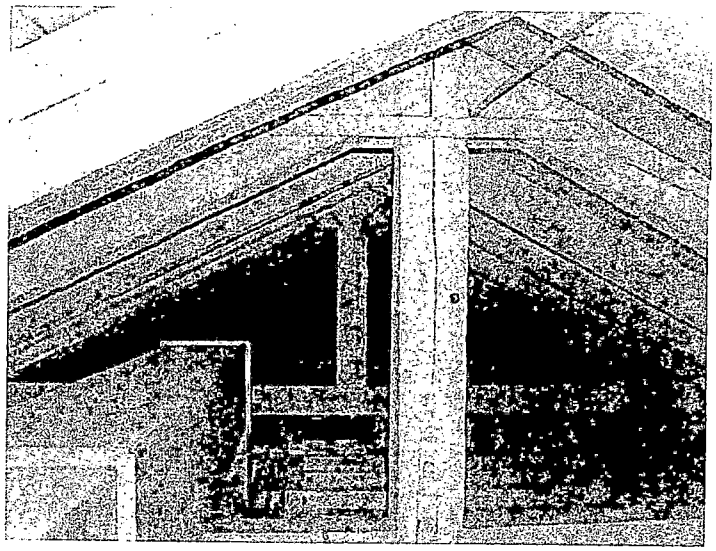
Treatment Description: Install new passage roof

4-ply #15 asphalt felt, mopped with gravel surface

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
108 SF	$1.96 SF	$211.68
Treatment Reference:	**CSI Division:**	Division 7 - Thermal and Moisture Protection
	Rehabilitation Treatment Cost Total:	$211.68

References:

Structure: Roof Framing



Feature Description:

The Kitchen roof structure is the most significant character-defining feature of the original interior space. Although concealed by a later dropped ceiling, it was originally open to view, and was designed to be seen as part of the rustic appeal of the Bavarian Beer Garden, when it functioned as a food service area. Installation of the ceiling and interior partition took place after changes in the food service operation post-1950.

The roof structure is composed of 10 pairs of 8"x 8" hand hewn rafters on 3' - 6" centers, and two king post trusses, each located 12 feet in from the gable end walls. The roof system carries a double layer of 7/8" x 3-1/2" tongue and groove sheathing for the clay tile roof. The trusses are fixed through the king post and into the rafters with 2-1/2" wide x 3'- 0" x 3/4 iron straps, each side, through bolted with 3 square headed bolts. The bottom chord is fixed to the king post with a 19" long iron stirrup. The rafter ends bear on 6"x 8" hand hewn plates on the eave walls. At the open east wall, the 6"x 8" plate is carried on a discontinuous 7"x 8" beam which formerly spanned the opening on two braced posts at the truss locations. Pegs in the beam show the former location of the mortise for the knee brace. The rafters, trusses, and plates are fabricated from re-used timbers salvaged from an early timber framed building as shown by non-contextual mortises in the sill plate and rafters, some of which have been patched.

The discontinuous beam on the east end contains a piece of circular sawn material, scored with an axe in an attempt to duplicate hand hewn material. When the two braced posts were removed from the opening at the east elevation, an 8"x 2-1/2"L x 1/4" steel I-beam was put in place to span the 31 foot opening, with a single steel pipe column at mid-span. The ends of the steel I-beam were crudely let into the brick end walls at the bearing points. The roof structure and underside of the roof sheathing is painted yellow. The brick gable walls in the attic space are painted red in what is evidently the earliest paint scheme for the Kitchen interior.

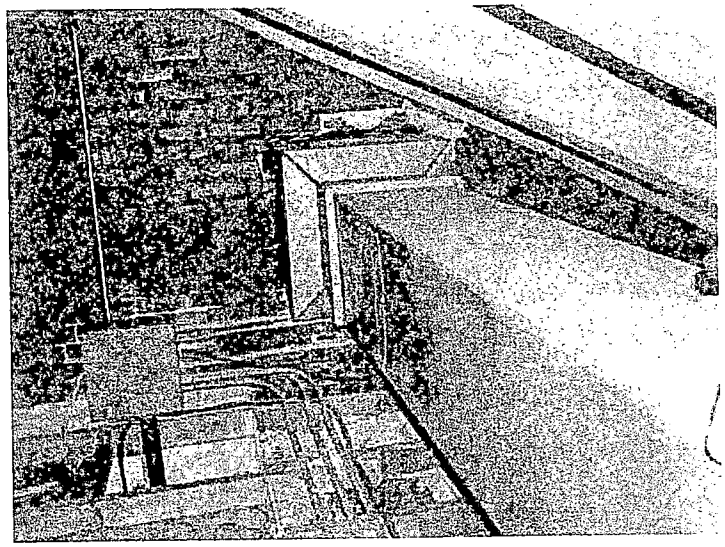
Quantity:	Measurement unit:	Condition Rating:
1	Ea	Good

Feature Condition:

The timber roof system is in good condition. The selective demolition treatment recommendation covers removal of the ceiling, ductwork, and other non-historic features.

References:

Utilities: Mechanical, Electrical, and Power



Feature Description:

Electrical service enters the Kitchen below exterior grade through the wall in the northwest corner. There is a large electrical panel on the interior of the north wall of the kitchen and a distribution box in the attic space above. A large exhaust fan and ductwork in the attic space served a commercial exhaust hood above the grilling station in the food service area.

Quantity:	Measurement unit:	Condition Rating:
1	Ea	Poor

Feature Condition:

Mechanical, electrical and power service and fixtures in the Kitchen are not appropriate for the anticipated uses of the Kitchen space and need to be removed for rehabilitation to take place. The recommended treatment for selective demolition covers removal of electrical and mechanical systems and appurtenances.

Treatment Type: Rehabilitation

Priority: High

Treatment Description: Install unisex restroom

Rough in and install fixtures as follows to provide a complete unisex public restroom:
Provide domestic hot & cold water supply, vent & waste piping
Water closet and rough in waste and vent for water closet
Lavatory, 20"x 18" porcelain enamel on cast iron with accessories
Mirror, 18"x 24", with stainless steel shelf
Soap dispenser, chrome, surface mounted
Toilet tissue dispenser, surface mounted, stainless steel
Towel dispenser, surface mounted, stainless steel

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
1 LS	$3,516.90 LS	$3,516.90

Treatment Reference: **CSI Division:** Division 15 - Mechanical

2003 RS Means Repair and Remodeling Cost Data, page 445. Americans with Disabilities Act Accessibilty Guidelines fo Buildings and Facilities: <http://www.access-board.gov/adaag/html/adaag.htm>

Utilities: Mechanical, Electrical, and Power

Treatment Description: Install hot water heater

40 gallon gas fired hot water heater.

Repair/Replacement Amount:	Unit Cost:	Repair/Replacement Cost:
1 LS	$605.00 LS	$605.00

Treatment Reference: **CSI Division:** Division 15 - Mechanical

2003 RS Means Repair and Remodeling Cost Data, page 326.

Treatment Description: Install fire alarm system

Install fire detection and alarm system

Repair/Replacement Amount:	Unit Cost:	Repair/Replacement Cost:
688 SF	$3.79 SF	$2,607.52

Treatment Reference: **CSI Division:** Division 16 - Electrical

Cost data source: National Park Service, Denver Service Center Class "C" Estimating Guideline (2001).

Treatment Description: New electrical service, distribution, and wiring

Install commercial electrical service including service breakers, metering, 120/208 Volt, 3 phase, 4 wire, feeder, and panel board.

Repair/Replacement Amount:	Unit Cost:	Repair/Replacement Cost:
688 SF	$9.23 SF	$6,350.24

Treatment Reference: **CSI Division:** Division 16 - Electrical

Cost data source: National Park Service, Denver Service Center Class "C" Estimating Guideline (2001).

Treatment Description: Radiant heating system in new concrete floor

Provide electric radiant floor heating sized appropriately in Office floor and passage. One zone to be controlled by a programmable thermostat. Electric heat to be 14 kW, embedded into the concrete floor slab.

Repair/Replacement Amount:	Unit Cost:	Repair/Replacement Cost:
688 SF	$7.56 SF	$5,201.28

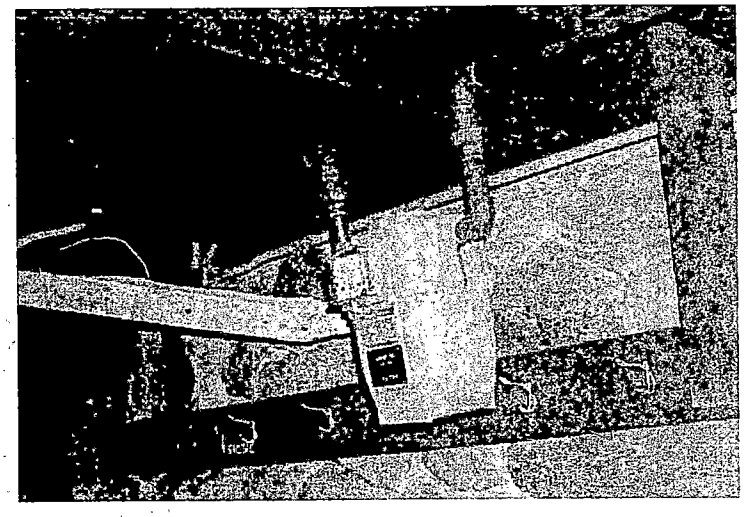
Treatment Reference: **CSI Division:** Division 15 - Mechanical

Cost data for comparable project at Weir Farm National Historic Site, Wilton, CT

Rehabilitation Treatment Cost Total: $18,280.94

References:

Site: Utilities



Feature Description:

The Office and Kitchen continued in use until 1987, and was fully connected to public utility services including water, sewer, electricity, telephone, and natural gas. Rehabilitation of the Office and Kitchen for contemporary uses will require verification of the location and condition of public utility hookups. The underground electrical power feed and water line to the Office enters through a metal pipe in the northwest corner of the cellar wall. A second electrical power feed enters through the north elevation cellar window. The Kitchen electrical power feed enters below grade in the northwest corner through the brick foundation wall. A natural gas meter is located in the connecting passage between the Office and Kitchen. The water supply line to the Kitchen is routed from the Office cellar.

Quantity:	Measurement unit:	Condition Rating:
1	LS	Unknown

Feature Condition:

The condition of the exterior utility supply lines cannot be determined without testing and investigation by licensed inspectors or technicians during the design phase of rehabilitation.

Treatment Type: Rehabilitation

Priority: High

Treatment Description: Site utilites (lump sum allowance)

Based on the unknown condition of site utilities, an allowance is provided for Class "C" estimating purposes.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
1 LS	$15,000.00 LS	$15,000.00
Treatment Reference:	**CSI Division:**	Division 2.- Sitework
	Rehabilitation Treatment Cost Total:	$15,000.00

References:

Site: Vegetation and Grading

Feature Description:

Photographs of the Benson's Wild Animal Farm in its operation period show that the Office and Kitchen area were carefully landscaped. Some of the flowering shrubs and topiary specimens remain in a wild and overgrown condition. Volunteer trees and shrubs have also become established. Features such as the semi-circular stone wall at the SE corner of the Kitchen are part of the original landscaping plan of the Benson's site and should be preserved and repaired.

Quantity:	Measurement unit:	Condition Rating:
1	LS	Poor

Feature Condition:

Vegetation overgrowth is causing serious damage to the building exterior. Those plants which remain from the historic period are too overgrown to serve as ornamental plantings. Overhanging trees have caused significant roof damage. Foundation plantings have caused the grade level to rise around the building perimeter resulting in damage to wood siding and sills, and water leaks in the cellar. In addition, the proximity of the vegetation to the building perimeter traps moisture in the building envelope, and limits inspection of the building to assess condition and deter vandalism. Preservation work cannot proceed on the structure until the vegetation is removed, and the original grade level re-established. Vegetation removal should be completed under supervision of a certified Arborist.

Treatment Type: Rehabilitation

Priority: Medium

Treatment Description: Install new concrete pad at east elevation

Install new concrete apron at east elevation of Kitchen and Office, 8' wide x 62' long. 3000 PSI concre with 6x6 WWF.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
496 SF	$0.86 SF	$426.56

Treatment Reference: **CSI Division:** Division 2 - Sitework

2003 RS Means Building Construction Cost Data, page 75. Section 02700-0300.

Site: Vegetation and Grading

Treatment Description: Remove existing asphalt paving

Remove existing asphalt paving and concrete foundation remnants on the south and east sides of the Office and Kitchen. Grade slope away from structures and prepare site for new paving treatments.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
1200 SF	$0.46 SF	$552.00
Treatment Reference:	**CSI Division:**	Division 2 - Sitework

2003 RS Means Building Construction Cost Data, page 37. Section 02200-1800.

Treatment Description: Repair stone wall at SE corner of Kitchen

Repair semi-circular dry laid stone wall, preserving the size, shape, and coursing of the original masonry. Re-lay masonry as required to repair damage from roots, and reinstate on a foundation of packed crushed stone.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
15 SF	$45.00 SF	$675.00
Treatment Reference:	**CSI Division:**	Division 4 - Masonry

Comparable project costs

Rehabilitation Treatment Cost Total: $1,653.56

Treatment Type: Stabilization

Priority: Critical

Treatment Description: Re-grade around foundation

Regrade the north and west elevations to remove excessive soil buildup at the foundation wall covering lower courses of wood siding and north elevation cellar window, and fine grade.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
800 SF	$0.80 SF	$640.00
Treatment Reference:	**CSI Division:**	Division 2 - Sitework

2003 RS Means Building Construction Cost Data, page 49. Section 02310.

Treatment Description: Remove trees and vegetation

Cutting and chipping, trees up to 12" diameter. Grub shrubs and chip 12" stumps to 18" deep.

Repair/Replacement Amount:	**Unit Cost:**	**Repair/Replacement Cost:**
1 LS	$3,625.00 LS	$3,625.00
Treatment Reference:	**CSI Division:**	Division 2 - Sitework

2003 RS Means Building Construction Cost Data, page 44. Section 02230-0250.

Stabilization Treatment Cost Total: $4,265.00

References:

Site: Vegetation and Grading