

HISTORIC STRUCTURE REPORT
HAMILTON / LAKE GENERAL STORE
Yellowstone National Park

June 26, 2008



HAMILTON STORE, YELLOWSTONE LAKE

Photograph courtesy of Bob Goss.

Presented to:

**Delaware North Companies
Yellowstone General Stores
8358 Huffine Lane, #2
Bozeman, Montana 59715**

Presented by:



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Table of Contents

I. Introduction	
General	I-1
Purpose & Methodology	I-1
Illustrations	I-2
Executive Summary	I-2
Acknowledgments	I-3
Project Information	I-4
II. The Lake Historic District	II-1
Lake Yellowstone	II-1
Government Development of the Lake District	II-2
Commercial Development of the Lake District	II-2
III. Hamilton Stores	III-1
The Family of Charles Ashworth Hamilton	III-1
Trevor Povah	III-3
The Firm	III-4
End of Concession Contract	III-6
IV. Construction History	
Introduction	IV-1
General Timeline	IV-1
Construction History Plan	IV-9
Building Additions	IV-10
Concrete Vault	IV-10
Loading Dock & Shed	IV-11
The Entry	IV-12
Signs	IV-14
Roofing	IV-15
Soda Fountain	IV-16
Mechanical System	IV-19
Electrical System	IV-20
Plumbing System	IV-20
Flooring	IV-21
Post Office	IV-21
Consideration Given to Building a New Lake Store	IV-22
Introduction	IV-22
Sequence of Events	IV-22
General Construction Process	IV-25
Siting – Roads	IV-26

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Table of Contents
Page TOC- 1



V. Character-Defining Features

Introduction	V-1
Historical and Architectural Significance	V-2
Massing	V-4
Roof Shapes	V-6
Roofing Shingles	V-7
Exposed Log Structure	V-9
Exterior Wall Treatment	V-11
Front Entry	V-12
Windows	V-13
Building Base	V-16
Interior Wall Treatments	V-17
Flooring	V-19
Northwest Fixture Company Fittings	V-19
The Chandeliers	V-20

VI. Condition Assessment – Exterior

General	VI-1
Building Base	VI-1
Watertable	VI-2
Wood Columns & Beams	VI-3
Wall Shingles	VI-3
Novelty Siding	VI-5
Wall Clapboards	VI-5
Trim	VI-6
Windows	VI-7
Doors	VI-8
Exposed Rafter Tails	VI-11
Fascias	VI-12
Roofing	VI-13
Flashing	VI-14
Chimney	VI-15

VII. Condition Assessment – Interior

General	VII-1
Flooring	VII-1
Walls & Ceilings	VII-2
Columns	VII-4
Doors	VII-4
Windows	VII-5
Window Bays	VII-5
Trim	VII-6
Fireplace	VII-8



VIII. Structural Assessment

General – Introduction	VIII-1
Code Compliance	VIII-2
Foundation Assessment	VIII-3
Floor Framing	VIII-6
Wall Framing	VIII-7
Roof Framing	VIII-7
Conclusions	VIII-9

IX. Condition Assessment – Systems

General	IX-1
Insulation	IX-1
Fire Protection System	IX-2
Plumbing System	IX-2
Heating System	IX-3
Electrical System	IX-3
Lead-Based Paint	IX-5
Asbestos	IX-6

X. Code Analysis

Introduction	X-1
Analysis	X-1

XI. Recommendations for Treatment

Restoration Target Date	XI-1
Rehabilitation Plan	XI-2
Over-Arching Priorities	XI-2
Prioritized Recommendations	XI-3
Recommended Scope of Work	XI-4

XII. Bibliography

XII-1

XIII. Appendix

USGS Map	XIII-1
As-Built Drawings	XIII-2
Hazardous Materials	
Mortar Analysis	
Wood Testing Results	
Paint Color Analysis	
1978 Inventory Report	
1983 Inventory Report	
1999 Historic Structure Survey Form	
2002 Single Entry Report	



Lake General Store Historic Structure Report

I. INTRODUCTION

General

Lake General Store is located at the northwest side of Yellowstone Lake within Yellowstone National Park (hereinafter also referred to as the "Park" or "YNP"). Lake General Store (hereinafter also referred to as the "Store") is considered eligible for listing on the National Register of Historic Places, as a contributing property within the Lake Historic District. The district sits on the north shore of Yellowstone Lake near the confluence of Pelican Creek and the Yellowstone River. The Absaroka Mountain Range is to the east and the Grand Canyon of the Yellowstone is to the north. The district is bordered by the lake shore to the east and the Grand Loop highway to the west. Lake Village is comprised of the Lake Hotel complex, the Lake General Store, the NPS Ranger Station, and the Lake Lodge complex.



Lake General Store

The complex is approximately 43 miles north of the South Entrance to the Park and 27 miles west of the East Entrance. Concurrent with the establishment of the Lake General Store in 1921, affordable lodges and cabins were being built nearby at Lake Lodge. These guests, and

those at the nearby camping ground at Fishing Bridge, provided ample customer support for a general store in the Lake area. The Lake Hotel was enlarged soon after the Lake General Store was completed in 1922.

The building has been the property of the National Park Service since 2003 and it has been operated by Delaware North Companies / Yellowstone General Stores (DNC/YGS) since January 1, 2003. The building has served as a general store since its partial completion in 1921.

Purpose & Methodology

CTA Architects Engineers (CTA) was engaged by Delaware North Companies in March 2007 to provide a historic structure report for the Lake General Store on Yellowstone Lake in Yellowstone National Park. The intent of this report is to demonstrate Lake General Store's significance within an architectural and historical context, to highlight the architectural features that contribute to the building's significance, to identify and record the modifications made to the building over the years, to document the existing condition of the building, and to make prioritized recommendations for restoration and repair.

Lake General Store is important in the history of the long-term concessioner Hamilton Stores, Inc. - as the first Hamilton-constructed building in what would become substantial holdings in the Park - and as a unique architectural design within the framework of Park Rustic. This building is representative of the concessioner's role in the Park, as well as the changing premises of Park management. As the management and use of the Park has changed, so has the perception of the Lake General Store. The current name for the building - Lake General Store - is used throughout this report, with the acknowledgment that until 2003 it was referred to as the Hamilton Lake Store.



This report consists of a physical history and analysis of Lake General Store, a written architectural assessment of the building, code analysis, annotated restoration drawings, paint analysis, guidelines for restoration, and materials analysis and recommendations. In order to provide as comprehensive an analysis as possible, CTA has engaged the services of two conservation specialists: Welsh Color & Conservation of Bryn Mawr, Pennsylvania for the paint analysis, and Abstract Masonry Restoration of Salt Lake City, Utah for the mortar analysis. Site inspections occurred during April through June 2007. Lesley Gilmore led the efforts in historical research and analysis, and was ably assisted by CTA architects Robert Franzen, Amanda Moore, and Courtney Walton in the physical documentation and recordation of the building. Structural engineering services have been provided by Tom Beaudette and Maria Chesnutt of Beaudette Consulting Engineers (BCE).

This report reflects observations on the dates of the inspections. The inspections were based on those building components accessible to view; some material probes and selective removal supplemented the visible evidence where necessary. CTA makes no representations regarding latent or concealed defects that may exist in the building. This report is made only in the best exercise of our ability and judgment. Not all locations of all materials are described herein, yet all areas of concern are addressed.

Illustrations

The historic photographs incorporated in this volume are from the Yellowstone National Park collection at the Gardiner Research Center, unless noted otherwise. The current photographs were taken by CTA Architects Engineers.

Executive Summary

Lack of sufficient maintenance of Lake Store - primarily spurred by the perception of an unsure future and exacerbated by its exposed location near an alpine lake in an extreme winter climate - has contributed to deterioration of various components and systems now in need of substantial repair. Many of the major components have reached the end of their useful lives and others were never designed for the snow, wind, and seismic loads concomitant with this location.

In order to enable the building to endure the seismic and snow loads placed upon it - and to be rendered safe for the occupants and public - it has been determined that the foundation should be replaced and the walls and roofs reinforced with additional framing and diaphragms. The primary goal is to accomplish this work with as little impact upon the character-defining features of the building as possible. However, these improvements will require lifting of the building, to dig for the new foundation and replace the interior piers and first floor beams.

The scope of work recommended for these necessary structural improvements necessitates removal of exterior wall and roof finishes, and the flooring. The shingle roofing and maple flooring have reached the end of their natural lives and have to be replaced anyway. Replacement of all the wall shingles would ordinarily be problematic for a historic structure and is rationalized by the following:

1. Replacement of the wall sheathing is required to brace the walls and enable the building to withstand the lateral loads that are and will be placed upon it.
2. Such replacement would require removal of either the interior or exterior wall finish. Removal and reinstallation of the interior beadboard would result in damage to a material that otherwise is generally in good condition.



Lake General Store Historic Structure Report

3. Approximately 40%-50% of the exterior wall shingles are replacements or are deteriorated.
4. The new features will match the old in design, color, texture, and materials.¹

The above is proposed out of concern for the longevity, safety, and integrity of the building. *The Secretary of the Interior's Standards for the Treatment of Historic Properties* should be complied with for all work performed on this building.

Because work has progressed on construction documents for the restoration of this building, a cost estimate has not been prepared as part of this report.²

Acknowledgments

CTA Architects Engineers would like to thank the following for their assistance with the preparation of this report:

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¹ Kay D. Weeks and Anne E. Grimmer, *The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring & Reconstructing Historic Buildings* (Washington, D.C., Library of Congress, 1995)

² 50% Construction Documents were issued on June 24, 2008 by CTA Architects Engineers, with structural engineering by Beaudette Consulting Engineers of Missoula, Montana. Martel Construction of Bozeman, Montana provided a cost estimate based upon Design Development drawings, and subsequent updates. This estimate, which will be described more completely in a following chapter, was for a total construction of \$2.5 million in 2007 dollars.



Lake General Store
Historic Structure Report

Project Information

Current Owner: National Park Service – Yellowstone National Park
Original Owner: Hamilton Stores Company (through 2002)
Location: Beginning at Geodectic Monument:
N 55 deg. 21 E At a distance of 975.5 to Point No. 1
Thence N 59 deg. 05 E At a distance of 210.0 to Point No. 2
Thence N 50 deg. 55 W At a distance of 95.0 to Point No. 3
Thence N 60 deg. 55 W At a distance of 262.0 to Point No. 4
Thence S 59 deg. 05 W At a distance of 80.0 to Point No. 5
Thence S 50 deg. 55 E At a distance of 322.0 to Point No. 6
At Beginning³
County: Teton County, Wyoming
Site Area: 1.213 acres²
Building Area: 5,356 square feet
Historic Name: Hamilton Lake Store
Current Name: Lake General Store
Historical Status: Eligible for listing on the National Register of Historic Places as a contributing property within the Lake Historic District
Building Orientation: Each arm of the Greek-cross shape of the building is oriented along a cardinal point, with the primary entry located between the east and south wings, for a southeast orientation.

³ Hamilton Stores Co., March 14, 1924 submittal of "Plat of Land Occupied by Hamilton Store Company at Lake" to the Department of the Interior, National Park Service, Yellowstone National Park.



II. THE LAKE HISTORIC DISTRICT

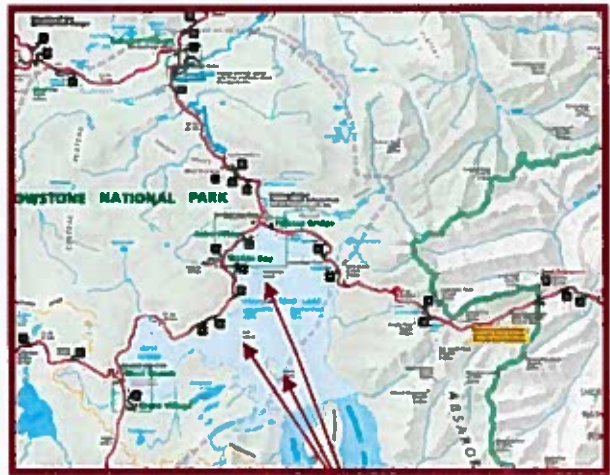
Lake Yellowstone

Lake Yellowstone is approximately twenty miles long in the north-south direction and fourteen miles wide. The shape has been compared to a disfigured hand, hence the naming of "West Thumb." The shoreline has been documented to be more than 100 miles long; 139 square miles in area, and sounded to a depth (at West Thumb Bay) of 300 feet.¹ At an elevation of 7,731 feet, the water is cold enough that swimming is discouraged, but boating – despite the occasional roughness of the water – is popular. Recreational and sporting (fishing) boating has been the impetus for commercial development around the Lake.

Early histories documenting the wonders of Yellowstone National Park described the lake and its surroundings, detailing its historic use, the geology, the flora, and the fauna. Most of the recorded expeditions through the Park, from John Colter's pass-through in 1807 to James Gemmell's travels with James Bridger in 1846 and General Washburn and Lieutenant Doane's 1870 expedition included travels around and on Yellowstone Lake.²

Yellowstone Lake is a widening of the Yellowstone River, which is fed from the Yellowstone Mountains (primarily the Absaroka Range) some 50 miles from the Lake. The River "enters the lake at the extremity of the little finger at the south, and discharges at the wrist at the north."³

The Lake features about nine islands, three of which are sizable. Two area wooded islands – Stephenson's and Frank's – each about one mile long, that are narrow and covered with thick growths of pines. Dot Island, which is near Frank's Island, was described in 1882 as "a small lozenge shaped mud-bank, not over 1/3 mile long."⁴ Six smaller islands are located near the shore.



Yellowstone Lake's Three
Larger Islands

The volcanic rocks of the type that were used for the foundation of the Lake General Store were described in 1888:

"Its shores are paved with volcanic rocks, sometimes in masses, sometimes broken and worn into pebbles of trachyte, obsidian, chalcedony, cornelious, agates, and bits of agatized wood; and again, ground to obsidian-sand and sprinkled with crystals of California diamonds. Here and there hot–

¹ Jack Ellis Haynes, *Haynes Guide: Handbook of Yellowstone National Park* (Yellowstone Park, Wyoming: Haynes, Inc., 1947), p. 103.

² Haynes, p. 152-153. Aubrey L. Haines, Volume One, p.37 and 106.

³ *Official Guide to the Yellowstone National Park* (St. Paul: Northern News Co., 1887), p. 94.

⁴ James Richardson, ed. *Wonders of the Yellowstone* (NY: Charles Scribner's Sons, 1882), p. 112.



spring deposits show wave-worn bluffs of the purest white..."⁵

Entries from journals depicting the early surveys of the Park included enumerations of the water fowl and "Eagles, hawks, ravens, ospreys, prairie chickens, grouse, mocking-birds and woodpeckers..." noting that they were common, as were buffalo, grizzly bears, and California lions.⁶

Before explorers came to examine the Park and the Lake, Indians camped by the shores of the lake. Jack Haynes reported that the numerous camps were used only during hunting and fishing excursions, and were not use year-round due to the winter snow pack.⁷

Government Development of the Lake District

In 1887, Lake Outlet was fitted with one of the first seven soldier stations in the Park. Haines relayed that:

"A frame building had been erected near the outlet of Yellowstone Lake in the days of the assistant superintendents, but it was used only as a summer station by the army and was replaced by a log station built on the edge of the meadow, opposite the present Lake Lodge – probably in 1891, when the road was constructed from Old Faithful to Lake Hotel by the way of Thumb Bay. The new station was not occupied in the winter from 1895 to 1898, the detachment occupying, instead, a building known as Mud Geyser station, located on the west bank of the Yellowstone River above the Nez Perce ford...After that project was abandoned there was no real need for a

winter station there and the detachment was kept at Lake on a year-round basis."⁸

This station was phased from use and later supplanted with a ranger station, which was considered an entirely new type of facility aimed at orienting the visitor and providing folksy entertainment at night. Lake Ranger Station was completed in June 1923 from plans that had been drawn in 1920. This station represented the largest district in the Park, one that was dedicated to fishing, boating, and appreciation of the wilderness.⁹

Commercial Development of the Lake District

As early as 1874, boat operations were approved for Lake Yellowstone. Eugene Topping and Frank Williams were granted a permit to operate boats on the Lake. They built a boat onsite and named her "Sallie." They quit this enterprise in 1887.¹⁰

In 1880, T. Elwood "Billy" Hofer and his brother built a small boat named "The Explorer" on the Lake. Later, Hofer became president of the T.E. Hofer Boat Co. and administered a boat concession on the lake.¹¹

E.C. Waters held the concession for boats on Yellowstone Lake from 1889-1907. He provided fishing and row boats from the Thumb Lunch Station to the Lake Hotel, and "he also had the store privilege at the Lake."¹² Waters

⁵ James Richardson, ed. *Wonders of the Yellowstone* (NY: Charles Scribner's Sons, 1882), p. 107.

⁶ Ibid., relaying Lt. Doane's written notes, p. 111.

⁷ Jack Ellis Haynes, 1947 *Haynes Guide*, p. 104.

⁸ Aubrey L. Haines, *The Yellowstone Story: A Historic of our First National Park*, Volume Two (Boulder, CO: University Press of Colorado, 1997), p. 185-86..

⁹ Haines, p. 304.

¹⁰ Goss, *Yellowstone: The Chronology of Wonderland*, p. 133.

¹¹ Haynes, 1947 *Guide*, p. 154.

¹² Reau Campbell, *Campbell's New Revised Complete Guide and Descriptive Book of the Yellowstone Park* (Upper Basin, Yellowstone Park, WY: H.E. Klammer, 1913), p. 69.



Lake General Store Historic Structure Report

maintained the store for the convenience of the fishermen. In 1907, E.C. Water's Yellowstone Lake Boat Co. lost the concession to T.E. Hofer's Yellowstone Park Boat Co.¹³ Waters' departure was fraught with conflict – he had ignored the superintendent's order to close down a zoo he had established on Dot Island and was "barred from entering the Park and a legal action was begun to terminate his business there."¹⁴ Hofer received \$5,000 from Harry Child to back up his renewed concession to operate a ten-year lease on the Lake, which Child's Yellowstone Park Boat Company assumed in 1911.¹⁵

Development of boat concessions for pleasure and fishing were buttressed by the construction of roads throughout the Park. In 1881, a road from the upper geyser basin crossed Mary Mountain in the Hayden Valley and connected to the outlet of Yellowstone Lake. The Lake was accessible from Cody in 1903, when the road begun in 1890 was completed.¹⁶ Passenger automobiles began to travel these roads in 1915.

Lodging became a necessary additional service. A camp hotel was built by the Yellowstone Park Association at the outlet in 1887.¹⁷ In the 1890s, tent camps started by Wylie Permanent Camp Company and the Powell & Shaw Company provided more housing. The tent camps were supplanted by the Lake Lodge cabins in 1920 and Lake Lodge in 1926. Construction of the Lake Hotel was begun in 1889; one wing opened in 1891.¹⁸ This confluence of construction of amenities

supported the tourist's and angler's desires to experience this mountain lake that teemed with fish.

Charles Hamilton operated his first general store at Lake through a lease with the Yellowstone Park Boat Company, proving that his connections with the Child Family would serve him well in his long career in the Park. This building was later replaced by the 1922 Lake General Store, located further from the boaters, and closer to the campers by Lake Lodge.

¹³ Haynes, 1947 Guide, p. 161.

¹⁴ Aubrey L. Haines, *The Yellowstone Story: A Historic of our First National Park*, Volume Two (Boulder, CO: University Press of Colorado, 1997), p. 77.

¹⁵ Goss, p. 134.

¹⁶ Haynes, 1947 Guide, p. 157.

¹⁷ Haynes, 1947 Guide, p.155- 157.

¹⁸ Robert V. Goss, *The Chronology of Wonderland*, p. 87 & 88.



III. HAMILTON STORES

The Family of Charles Ashworth Hamilton (1884-1957)

Charles Ashworth Hamilton ("Ham") was born to Charles Edward and Alma Lizzie Ashworth Hamilton on November 19, 1884 in Winnipeg, Manitoba. In 1888 the family moved to St. Paul, Minnesota where Charles spent the rest of his childhood. In *Yellowstone Pioneers: The Story of the Hamilton Stores and Yellowstone National Park*, Gwen Petersen relates Charles' early entrepreneurial adventure selling local merchants advertising space on his family's fence fronting one of St. Paul's finer residential streets.¹ Charles was not content to become the attorney his parents wished for; his independent streak led him to Yellowstone National Park in 1905, after he had finished high school and attended several business college courses. In the Park he served as assistant to the Yellowstone Park Association's Purchasing Agent for the Commissary at Mammoth.²

Charles spent additional summers in the Park after his first successful summer of 1905. "He was secretary to Harry W. Child, President of Yellowstone Park Association, which operated all the Park's hotels and transportation services (although the entire congeries was financed by the Northern Pacific Railroad), and, in 1907, became assistant to T.E. Farrow,

Superintendent of Hotels."³ During these summers Charles forged several long-lasting friendships with other men who became integral leaders in the Park. He became close to Huntley Child, William Nichols (son-in-law of Harry Child), and Jack Haynes (son of photographer Frank J. Haynes).⁴ His strong friendship with Harry Child's son Huntley proved beneficial to Charles, as in 1915 Huntley led Charles to the Klammer Store purchase and his father helped Charles finance it. Klammer's death had prompted Child to wire Ham, thinking it was the opportunity to buy this little store. Ham had \$300 to leverage.⁵ This Klammer Store purchase became Charles' inroad into the park concessioner business that occupied him for the rest of his working life.

In Spring 1918, Charles volunteered and was accepted into the motor transport corps at Camp Jessup, Georgia. He was away from the park until he was dismissed in early spring of 1919 when he "returned to park to reopen his now thriving enterprise."⁶ That same spring, when he was thirty-four, he met and courted May Emma Spence of St. Paul. May was a friend of Charles' younger sister Eva. Charles and May became engaged the summer of 1920.⁷

The couple was married in the Park soon after their engagement:

"Mr. C.A. Hamilton, who has a store concession in the park, and Miss May Spence, of St. Paul, Minnesota, were married at the Yellowstone Park Chapel, at

¹ Gwen Petersen, *Yellowstone Pioneers: The Story of the Hamilton Stores and Yellowstone National Park* (Yellowstone National Park: Hamilton Stores, Inc., 1985), p. 22-23. This book, compiled with information provided by the Hamilton family, is probably the most complete published source of information on the family and its role in the development of the Park. Much of the biographical information on Charles Hamilton is taken from this publication. See Ms. Peterson's book for further information beyond that provided herein.

² Gwen Petersen, p. 22-23.

³ Gwen Petersen, p. 29.

⁴ Robert V. Goss, *Serving the Faithful in Yellowstone: Henry Klammer and the General Store in the Upper Geyser Basin* (Self-Published, 2003), p. 40.

⁵ C. Watt Brandon, "Day by Day," *The Kemmerer Gazette*, February 1, 1952. (Montana Historical Society, MC292, Box 16, Folder 2).

⁶ Ibid.

⁷ Gwen Petersen, p. 61-64.



Mammoth Hot Springs, at 10:30 a.m., September 20, 1920. Residents of the park attended the wedding.⁸ Charles' sister Eva was the maid of honor and William M. Nichols was the best man.⁹

The Hamilton's only child, daughter Eleanor May, was born June 2, 1921 in St. Paul, Minnesota. Ellie lived with her parents and nurse Nana Gutz in the six-room apartment above the Old Faithful store. Ellie worked like all the other Hamiltons, "from the time her chin could clear the counter."¹⁰ Ellie started working full-time at the Mammoth soda fountain when she was only twelve. She remembers that the family worked too much to have time to take photographs.¹¹

When Ellie was nineteen, she met Trevor Stewart-Povah in California, where he worked at the Union Oil Company. They married on November 28, 1940 in Santa Monica.¹² Trevor later became a major player in the Hamilton Stores Company. In 1945, Ellie and Trevor and their two children came to work in Yellowstone. The company had "developed serious problems, partly due to the war and partly due to Ham's growing uncooperativeness with the government. His earlier swashbuckling, high-handed treatment of Washington officials didn't work any longer. His son-in-law, Trevor Povah, salvaged the business. He introduced practical and necessary innovations and, above all, steered the company through some heavy

National Park Service and Washington political negotiations."¹³

Hamilton included his family in his operations of the Park. "His mother had her own quarters in the Hamilton apartment, as did May's mother when she visited. May's sisters, Helen and Hope, also spent many summers working in Wonderland." Many Hamilton family members held positions in management of the stores. "The Hamilton women, as money-oriented, bright, and ambitious as Charles, never considered any job too much or too menial to tackle."¹⁴

Historian Gwen Peterson's mention of Charles' office symbolized his life and his pride:

"The Old Faithful store became Hamilton's office, headquarters, and warehouse, the brains and heart of his operations, and his home when in the Park. The second floor contained a six-room apartment that included a business office furnished with a desk, comfortable armchairs for guests, bearskin rugs, and a complete [sic] bar that provided aid and comfort. On the wall behind the desk, Hamilton pasted the two cancelled checks that had launched his career, and framed them with racing ticket stubs to symbolize the gamble that had paid off."¹⁵

The Hamiltons crafted a comfortable life for themselves, summering in Yellowstone and wintering in California. Charles Hamilton purchased the El Tovar apartment building in Santa Monica and had a two-story penthouse constructed on the top for himself and his

⁸ Annual Report for Yellowstone National Park: 1920, Vital Statistics, p. 137. According to Gwen Petersen in *Yellowstone Pioneers*, this was the first civilian marriage in the chapel (p. 64).

⁹ Gwen Petersen, quote from the St. Paul newspaper clip about the wedding, p. 65.

¹⁰ Gwen Petersen, p. 78-81.

¹¹ Interview with Eleanor and Pat Povah (daughter and grandson of Charles Hamilton), July 27, 2007, by Lesley M. Gilmore.

¹² Gwen Petersen, p. 81.

¹³ Gwen Petersen, p. 96.

¹⁴ Gwen Petersen, p. 72.

¹⁵ Gwen Peterson, p. 30. The two checks referenced were for the purchase of the Klammer Store and its merchandise. A neither check was covered by Hamilton's bank account, Hamilton gambled on timing and the trust that Huntley Child would finance him (Peterson, p. 29-30.)



Lake General Store Historic Structure Report

family. The construction by his Yellowstone crew was completed in June 1938.¹⁶ This El Tovar residence was described as a "luxurious penthouse [that] has 21 rooms and seven baths."¹⁷

Charles and May Hamilton devoted their working lives to their business in the Park; Ham "suffered a slight heart attack at his lower store at Old Faithful on the morning of August 31, 1950."¹⁸ May died five years later, as noted in the Park's Annual Report:

"Mrs. May Hamilton, wife of C.A. Hamilton, president of Hamilton Stores, Inc. passed away September 8, 1955 at their winter home in Santa Monica, California following a long illness. She spent the summer seasons in the park for more than 35 years prior to her illness. Her daughter and son-in-law, Mr. and Mrs. Trevor Povah, are connected with the Hamilton Stores Inc. operations. Burial was in Santa Monica on September 13."¹⁹

Charles's death in 1957 was remembered in a tribute to him in the 1957 Supplement to the Park's Annual Report. The article was aptly entitled "Pioneer Yellowstone concessioner passes," and paid tribute to Hamilton's enduring commitment to the Park:

"Charles Ashworth Hamilton, 72, long-time concessioner in Yellowstone and one of the Wonderland's most beloved characters died unexpectedly of a heart attack May 28, 1957 at his office at Old Faithful while consulting on the phone with his physician in Santa Monica, his winter headquarters. 'Ham' first came to the Yellowstone in 1905

and worked for the Yellowstone Park Association. In 1915 he acquired the Hank Klammer general store at Old Faithful and continued as one of Yellowstone's leading concessioners since that time. He was considered by many as a business genius and was very successful in his operation of one of the largest general store concessions in the National Park system. Funeral services and burial were held at the Forest Lawn Cemetery in Glendale, California on June 4 and at the same time memorial services were held in the Mammoth Chapel in the park. His wife May E. Spence Hamilton preceded him in death in 1955. His son in law [sic] and daughter, Mr. and Mrs. Trevor Povah, will take over the operations of the concession in the park."²⁰

Charles and May's daughter Ellie and her husband Trevor had four children: Sandy, Terry, Eleanor, and Patrick. Terry and Pat both stepped into administrative roles in the Hamilton Stores Company: Terry as president in 1979 when Trevor stepped down, and Pat as vice president.

Trevor Povah

As mentioned above, Trevor Povah was able to handle the vagaries of the dealings with the National Park Service and to maneuver around the politicians, to protect the interest of Hamilton Stores. Fellow Park concessioner, William ("Billie") Nichols enjoyed a close relationship with Charles Hamilton; in his letters to Ham he relayed tales of Trevor's prowess. Seeing him interact so easily with congressmen in D.C. in 1956, Nichols noted that: "You can't beat Trevor" at success with negotiating contracts. He related further that: "Your son-in-

¹⁶ Gwen Petersen, p. 93.

¹⁷ C. Watt Brandon, "Day by Day," *Kemmerer Gazette*, Feb. 1, 1952.

¹⁸ Annual Report for Yellowstone National Park: 1951, p. 8.

¹⁹ Annual Report for Yellowstone National Park: 1956, p. 12.

²⁰ Annual Report for Yellowstone National Park: 1957, supplement.



law, Trev Povah, seems to know every Congressman in Washington..."²¹

Nichols' letters have also provided insights into both Hamilton and Trevor's characters. The same year the above praise was shared, Hamilton expressed annoyance with some abuse by Trevor and avowed that he would not "reemploy him under any condition."²² A in a later letter Ham confessed that he "was in one of my wild moods" and that Trevor's job was secure.

The Firm

In historian Robert Goss's discussion of the concessioners in the Park, he notes Hamilton's acumen and skill in taking advantage of his fortunate timing:

"When Charles Hamilton took over the business in 1915, the 'modern age' in Yellowstone was at hand. Motorized vehicles were allowed on the roads that year and took over completely in 1917, allowing faster and more comfortable travel, easier transport of materials and supplies, and eliminated the necessity of grazing cattle and horses on park meadows. Visitation doubled in 1915, and with the exception of the war years, dramatically increased on a yearly basis. By the time Hamilton died in 1957, visitation approached close to 1.5 million a year."²³

The introduction of the automobile to the Park effectively democratized the park; it was now

²¹ Billie Nichols to Ham, letter dated January 18, 1956. In the 1955-57 Nichols papers Box 3, Folder 21-21 at the Montana Historical Society.

²² Hamilton to Nichols, letter dated February 28, 1956. In the 1955-57 Nichols papers Box 3, Folder 21-21 at the Montana Historical Society.

²³ Robert V. Goss, *Serving the Faithful in Yellowstone: Henry Klamer and the General Store in the Upper Geyser Basin* (Robert V. Goss, 2003), p. 5 & 6.

more feasible for the common man to frequent the park. Hamilton established general merchandise stores to fill this growing need by the greater numbers of visitors who now camped in the Park. Hamilton was the first to recognize this need. "Hamilton's genius raised storekeeping in Yellowstone to an art."²⁴ This sentiment is reiterated in Aubrey Haines' *The Yellowstone Story*:

"His is a success story without parallel in the Yellowstone, an astounding rise from a clerkship in the purchasing department of the old Yellowstone Park Association to control of the park's most profitable business, and it is interesting to note that it was done by catering assiduously to the needs of the automobiles."²⁵

The firm had four substantial periods of growth that contributed to its success.

1. Phase I: 1915 purchase of Klamer Store.
2. Phase II: 1926 establishment of the service stations.
3. Phase III: 1953 purchase of Pryor & Trischman interests.
4. Phase IV: 1967 purchase of the thirteen Haynes Photo shops.²⁶
5. Fourth segment is the service stations that Hamilton, Child, and Anna Pryor started in 1926.

The Haynes Photo Shops purchase in 1967, from Isabel Haynes (widow of Jack Ellis Haynes and owner of the Haynes Photo Shops), was paired with the stipulation that the name "Haynes" be removed from the buildings. This gesture was in deference to the Haynes family

²⁴ Gwen Peterson, p. 30.

²⁵ Aubrey L. Haines, *The Yellowstone Story: A History of Our First National Park* (Boulder, Colorado: The University of Colorado Press, 1976. Revised Edition, Volume 2), p. 376.

²⁶ Goss, *Serving the Faithful*, p. 119.



Lake General Store Historic Structure Report

"Haynes" be removed from the buildings. This gesture was in deference to the Haynes family that had "pioneered and photographed so much of Wonderland's early history."²⁷

Hamilton Stores, Inc. was incorporated in Delaware on December 20, 1930.²⁸ In 1931 and after, the annual reports were filed by Hamilton Stores, Incorporated.²⁹

The stockholders of the firm in 1937 were:

C.A Hamilton	248 shares
Mrs. Parkes	1 share
Mrs. Pauline Samson	1 share ³⁰

By 1938, the stockholder configuration was modified to include Ham's wife May with 65 shares, reducing Ham's to 183 (Parkes and Samson remained at one share each).³¹

In 1944, Hamilton approached Nichols about buying his entire Park inventory of properties. He likened the potential disposition to Nichol's recent selling of two ranches.³² He offered what he considered a fair selling price of \$750,000. Hamilton made specific reference to the Lake Store, stating: "Do not remember the dimensions but the building is in good shape."³³

Nichols avoided providing a direct answer by asking Hamilton what he would pay for it

himself, noting that the property should be sold on it earning power.³⁴

In order for Charles Hamilton to ease out of the full scope of work, the firm was restructured in 1948 when: "Trevor Povah, son-in-law of Mr. CA Hamilton, was elected Vice-President of the Hamilton Stores, Inc. in February."³⁵

The firm was reorganized again upon the death of Charles Hamilton:

"Following the death of Charles A. Hamilton, President and Operator of Hamilton Stores, Inc. on May 28, 1957 a reorganization of the company was made in June. Trevor S. Povah was elected President, Garfield N. Helppie, Vice President and General Manager and Eleanor H. Povah, Secretary-Treasurer. These three officials will also constitute the Board of Directors."³⁶

"Mrs. Eleanor Povah was named to the newly created position of Chairman of the Board of Hamilton Stores, Inc., at a meeting of the stockholders held early in 1959. Other officers re-elected at the meeting included, Trevor S. Povah as President, and Garfield S. Helppie as Vice President. Mrs. Povah will remain as Secretary-Treasurer and Miss Grace Angvik has been promoted to the Board as Assistant to the Secretary."³⁷

In April 1959, following this necessary reorganization of the firm, the new leadership formed three corporations subsidiary to Hamilton Stores, Inc. The three new corporations were known as Hamilton Old

²⁷ Gwen Petersen, p. 108.

²⁸ Hamilton Stores, Inc. Annual Report 1939, Box C-9, File: Annual Reports 1939-1948. Yellowstone Research Center.

²⁹ Hamilton Stores, Inc. Annual Reports, Box C-9, Yellowstone Research Center.

³⁰ Hamilton Stores, Inc. Annual Report 1938.

³¹ Hamilton Stores, Inc. Annual Report 1938, Box C-9, Yellowstone Research Center.

³² One of these was the Flying D Ranch that Harry Child and Nichols held a long-term interest in until Nichols sold the property in 1944.

³³ Charles Hamilton to Billie Nichols, letter dated November 30, 1944. Box 15, Folder 10, MC292, Montana Historical Society.

³⁴ William Nichols to Charles Hamilton, letter dated December 4, 1944. Box 15, Folder 10, MC292, Montana Historical Society.

³⁵ Annual Report for Yellowstone National Park: 1948, p. 5.

³⁶ Annual Report for Yellowstone National Park: 1957, "Reorganization of Hamilton Stores, Inc.," p. 5.

³⁷ Annual Report for Yellowstone National Park: 1959, p. 19.



Faithful, Inc.; Hamilton Canyon, Inc.; and Hamilton Mammoth, Inc.³⁸

End of Concession Contract

The concession contract with the National Park Service terminated in 2001, after a one-year extension had been granted. At this time the Park Service solicited bids for the next contract. In 2002: "Acting Park Superintendent Frank Walker announces the Hamilton Store contract will expire on December 31, 2002, ending 87 years of service in the park. Through the competitive bidding process Delaware North Parks Service is selected to operate the general store concession for 15 years, beginning January 1, 2003."³⁹

The above abrupt description is not indicative of the long sequence of events that resulted in this termination. The concessioner conditions in the Park changed over the many years that Hamilton Stores operated in the Park – as evidenced by the skill with which Trevor Povah needed to negotiate contracts to continue. Parting with National Park Service was unquestionably rough and rocky for the Povah Family. The 2002 award to an outside concessioner prompted the family to begin unsuccessful arbitration proceedings with the Park Service. The Povahs gave the National Park Service the keys to their operations on January 1, 2003.⁴⁰

³⁸ Annual Report for Yellowstone National Park: 1959, p. 27.

³⁹ Goss, Robert V., *Yellowstone: The Chronology of Wonderland* (Self-Published, Fourth Edition, June 2004), p. 122.

⁴⁰ Interview with Eleanor and Pat Povah (daughter and grandson of Charles Hamilton), July 27, 2007, by Lesley M. Gilmore. Pat had been working in the Park for 33 years at the time the contract was terminated.



Lake General Store Historic Structure Report

IV. CONSTRUCTION HISTORY

Introduction

Lake General Store is an essential component in the history of the long-term YNP concessioner Hamilton Stores, Inc. - as the first Hamilton-constructed building in what would become their substantial holdings in the Park - and as a unique architectural design within the stylistic framework of Park Rustic. This building has withstood plans for demolition and for adaptive reuse, as well as the relegation of its access drive from a main Park road to a service drive.

This building is representative of the concessioner's role in the Park, as well as the changing premises of Park management. As the management and use of the Park has changed, so has the perception of the Lake General Store. The current name for the building - Lake General Store - is used throughout this report (as is "Lake Store"), with the acknowledgment that until 2003 it was referred to as the Hamilton Lake Store.

General Timeline

When the E.C. Waters Yellowstone Park Boat Company at Yellowstone Lake became nearly inactive in 1917, Charles Hamilton sublet their store at Lake outlet, in front of the Lake Hotel. Hamilton was encouraged by W.M. Nichols, president of the Yellowstone Park Boat Company, to "buy the store and dwelling from the boat company, move the buildings at least 100 feet back from Yellowstone Lake to improve the lake view from the hotel, and make alterations to the store to improve its appearance."¹ In 1921, Hamilton replaced the Lake outlet store with a new building.

¹ Mary Shivers Culpin, *"For the Benefit and Enjoyment of the People": A History of the Concession Development in Yellowstone National*



Hamilton General Store, 1923 Haynes Guide. Photograph courtesy of Bob Goss.

Hamilton enlarged his YNP holdings again in 1924 with the construction of small stores at West Thumb and at Fishing Bridge, the latter one of which was enlarged the following year.² Hamilton also added onto his flagship Upper Geyser General Store in 1923-1924 with two additions totaling 5,600 square feet.³

The following timeline is illustrated on an annotated floor plan on p. IV-9.

1919

Monthly reports issued by Yellowstone National Park Superintendent Horace Albright yield information about Hamilton's construction of the new Lake General Store, which appears to have begun before October 1919. At this time, the superintendent stated:

"During the month Mr. Hamilton continued the construction of his new store at the Lake outlet, in accordance with plans already

Park, 1872-1966 (Yellowstone National Park, Wyoming: National Park Service, Yellowstone Center for Resources, YCR-CR-2003-01), p. 62.

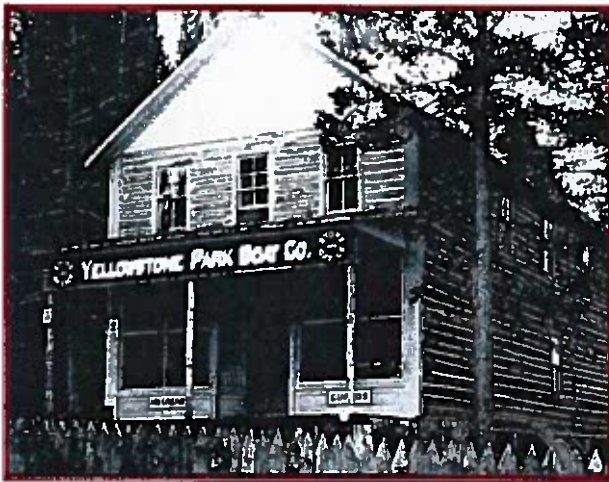
² Newell F. Joyner, *History of Improvements in Yellowstone National Park*, May 1, 1929, p. 23-24. File No. 978.7, YRC.

³ Robert V. Goss, *Serving the Faithful in Yellowstone: Henry Klamer and the General Store in the Upper Geyser Basin* (Robert V. Goss, 2003), p. 32.



Lake General Store Historic Structure Report

approved by the Service. He had to contend with a good many labor troubles, and the big storm brought new difficulties in the way of transportation of equipment and supplies. He bravely continued his work until the end of the month, when he advised me that he would have to bring in his crews and stop work for the winter. He was unable to get his building under roof, but with anything like favorable spring conditions he will probably be able to finish the store and have it ready for use shortly after the opening of the season."⁴



The Lake Outlet store that Hamilton operated his store out of from 1917 through 1921. Permission and credit for photograph required.

In the meantime:

"Mr. C.A. Hamilton operated his general store at upper Geyser Basin, and under a subleasing arrangement with the YP Boat Company operated its store at Lake Outlet. In addition to general merchandise and groceries, Mr. Hamilton carried full lines of curios and souvenirs, and also operated gasoline and oil stations. He is now engaged in building a fine new store at the

Lake which will take the place of the boat company's store...."⁵

The superintendent later reported that Hamilton had finally managed to get transportation for his crew, to get them from the Lake to Mammoth by November 6, 1919.⁶

1920

Work resumed after the snow subsided in May 1920, and continued through June.⁷ The Superintendent reported that the store was "about half completed" in July 1920.⁸ Work reportedly continued with a small work crew in August, and the next entry by Albright, in the 1920 Annual Report stated that:

"Mr. Hamilton has for nearly a year had in process of construction a fine new store building at Lake Outlet, on an entirely new site, on the lake shore. He anticipates having it finished in time so it can be used by the opening of next season. ..."⁹

1921

In May of 1921, work resumed at Lake General Store, "with a view to opening it up about the beginning of the season."¹⁰ Hamilton concurrently had a small crew working at the Upper Basin store as well; this combined effort (and the weather) probably account for what was perceived as slow progress. The Lake General Store did open to the public for the 1921 season, although construction was

⁴ Yellowstone National Park Superintendent's Monthly Report, October 1919, p. 12.

⁵ Annual Report for Yellowstone National Park: 1919, p. 82.

⁶ Yellowstone National Park Superintendent's Monthly Report, November 1919, p. 7.

⁷ Yellowstone National Park Superintendent's Monthly Reports: April 1920, p. 8; May 1920, p. 1 & 12; June 1920, p. 13.

⁸ Yellowstone National Park Superintendent's Monthly Report, July 1920, p. 17.

⁹ Annual Report for Yellowstone National Park: 1920, p. 37.

¹⁰ Yellowstone National Park Superintendent's Monthly Report, May 1921, p. 13.



Lake General Store Historic Structure Report

continued through the rest of the season at both Lake and Upper Basin General Stores.¹¹ It is believed that when the store first opened in 1921, it consisted solely of the central octagonal portion; the wings had not been constructed yet.¹²

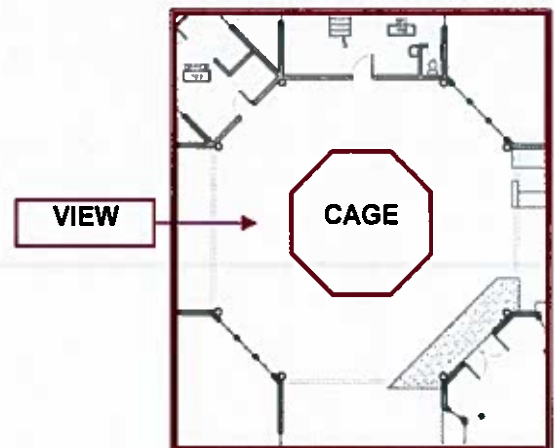
Gwen Petersen relates in *Yellowstone Pioneers* that Charles Hamilton's eldest sister Alma Sybil Hamilton Parkes and her husband Arden managed the Lake Store. "Ensnconced in the middle of the Lake store floor was a gazebo-sized open-ribbed log structure that looked like a huge birdcage. Within, a smiling Sybil commanded the cash register, accepted the public's payments for purchases, and chatted with customers."¹³ (Mrs. Parkes was later listed as holder of a single share of Hamilton Stores, Inc.)¹⁴



Early cash register cage in center of the octagonal space, before the side wings were constructed. Photograph c. 1921, courtesy of Eleanor Povah.

The photograph of Alma Parkes in this central "cage" is critical to developing the early construction history of the building for it appears to depict the building before the construction of the four gabled wings and the side office, as well as the main entry doors at the southeast facet. The photograph is taken looking either directly east or west, as evidenced by the upper separated windows in the wider wall facet and the lower window in the narrow facet to the left. There are three strong indications that this is the east wall:

1. The image seen through the glass of the pair of entry doors (seen beyond the cage) does not show the hill west of the building; the land appears to be relatively flat.
2. The shadows on the floor are more likely to come from the southeast than the northwest.
3. An east entry would more directly engage the public access from the adjacent government road; the west entry would not be as readily accessible.



Because the March 14, 1924 (see **1924** below) site plan submitted by Hamilton Stores & Company clearly shows the four wings and the office (pre-vault construction) appendage (either already built, or intended to be built), it appears that the early "cage" photograph

¹¹ Yellowstone National Park Superintendent's Monthly Reports for 1921: June, p. 14; July, p. 17; August, p. 18; September, p. 17.

¹² Provide this source.

¹³ Gwen Petersen, p. 72.

¹⁴ Hamilton Stores, Inc. 1938 Annual Report. Box C-9 at Gardiner Research Center.



Lake General Store Historic Structure Report

indicates that the building construction was phased in order to allow for operation as early as possible. Based on Park Superintendent Horace Albright's reports, it appears that the building was opened for use in 1921, then completed in 1922 (with the five wings as depicted on the 1924 site plan).¹⁵

The 1999 Historic Structure Survey Form reports that Albright didn't like the flat roof of the porch. Since the burred structure at the southeast entry did not have a roof, and the shed at the back was not added until c.1951, this porch reference is presumably regarding the original entry which was subsumed by the addition of the wings before the next operating season (1922).¹⁶

In September, Hamilton began planning for an employees' cottage near his new Lake General Store and actually began construction in October, "to the extent of putting on the siding and roof sheathing. And the work has been abandoned to be completed next year."¹⁷

1922

In April 1922, Hamilton had arrived in the Park and was planning the continued construction of the Lake dormitory cottage. The Park superintendent made no other mention of this work – or any work at the Lake General Store – throughout the rest of the monthly reports of 1922.¹⁸

¹⁵ This assertion is supported by a mention in the Classified Structure Field Inventory Report for Lake Hamilton Store, dated December 1983. This report indicates that "Park records suggest that Hamilton's new store consisted of only the central part, the wings being added at later dates."

¹⁶ Historic Structure Survey Form, 1999.

¹⁷ Yellowstone National Park Superintendent's Monthly Reports for 1921: September, p. 17, and October, p. 14.

¹⁸ Yellowstone National Park Superintendent's Monthly Reports for 1922: April, p. 14; May through October.

The 1921-22 *Annual Report for Yellowstone National Park*, however, indicated that Hamilton completed the Lake General Store, filling station, and residence at Yellowstone Lake that year. The report further stated:

"At Lake Mr. Hamilton devoted a large part of the Autumn to cleaning up the premises, removing the wood pile to the rear of his residence and putting the finishing touches on the residence itself. He has had the concrete foundation of the store faced with stone and has prepared to do some planning about his buildings next spring. I am more satisfied with the Lake Store establishment now than I have ever been. The plant has cost Mr. Hamilton about three times what it should have cost. Much of the extra expense has been due to mistakes of judgment in the employment of men and to neglect of instructions regarding following of plans and specification [sic] in the building and in neglect of landscape values necessitating many changes by our orders."¹⁹



1927 Haynes Guide photograph of the completed Store. Neither the 1923 or 1927 publications depict stone at the base of the building. The 1927 publication does show the c.1925 burred log canopy at the entry.



Lake General Store Historic Structure Report

While Albright's statement "...concrete foundation of the store faced with stone..." represents a misunderstanding of the actual foundation system used at the Store, it is probably indicative of the use of stone for the foundation "facing" around the building. (See illustration at right.) The statement also does not correspond to the photographs printed in the 1923 and 1927 Haynes Guides to the Park: neither of these photographs shows stone over the concrete or between the concrete piers.

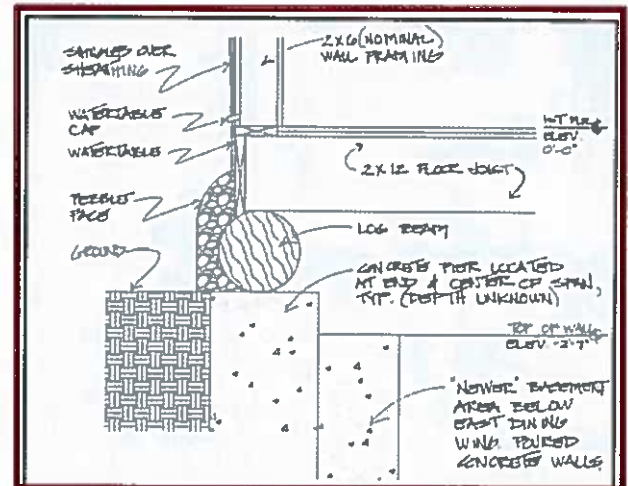
Nonetheless, stone was installed between and on the concrete piers before the buried log canopy was removed in 1951. While the north wing and the west wall of the south wing currently have concrete infill in lieu of stone infill, the concrete appears to have been a replacement for the stone, in order to protect the base of the building from the heavy snow loads that concentrate at the north and west sides of the building. (See illustration at right.) Stone is still visible at the base of the east wall of the concrete loading dock. (See 1995 for Povah's replacement of the foundation at the west wing.)

In 1922, Hamilton's records listed Lake Store under "additions and betterments" with an associated expense of \$2,729.83 + 50.00, and as a capital asset – for the building and equipment – of \$28,680.40.²⁰ In 1926, the store's value (including equipment) had increased to \$30,602.39, as compared to the value of the Old Faithful Main Store of \$54,127.64.²¹

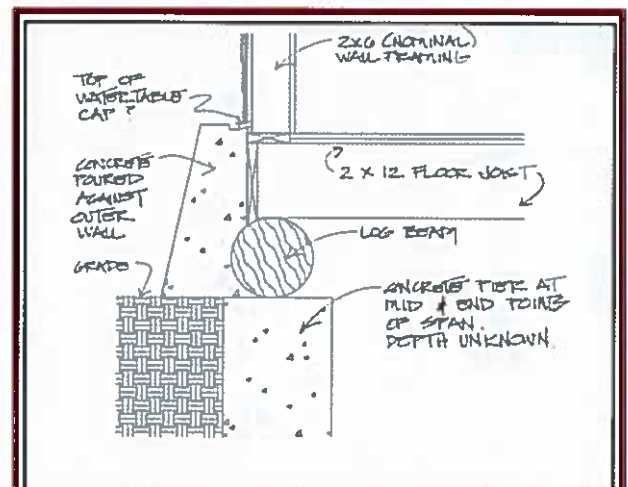
¹⁹ Horace M. Albright, YNP Superintendent, Report of Construction to Mr. D.F. Hull, October 27, 1922, p. 12-13. Box L-56, File No. 329. YRC.

²⁰ Hamilton Store, Inc. *Annual Report* for year ending December 1922. Box C-9, Yellowstone Research Center.

²¹ Hamilton Store, Inc. *Annual Report* for year ending December 1926. Box C-9, Yellowstone Research Center.



Stone facing on original log beam structure. This detail is extant at the east wing and the south and east walls of the south wing.



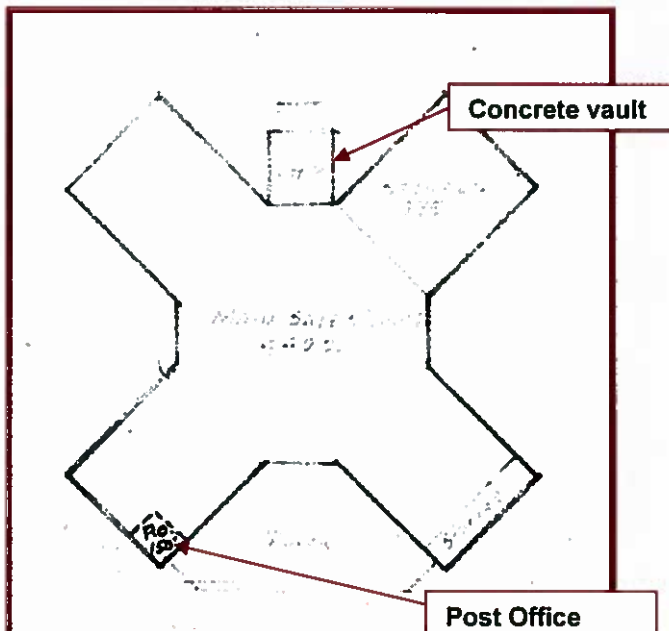
Concrete facing on original log beam structure. This detail is extant at the north wing and the west wall of the south wing.



Lake General Store Historic Structure Report

1928

The Contract Delivery Post Office – one of five throughout the Park – was inserted into the south wing, as shown on the plan below. Of particular note is that this plan depicts a structure appended to the office. It is presumed that this is the concrete vault, as the size shown coincides with that of the current concrete vault. Under this construct, the concrete vault was erected between 1924 and 1928.



Contract Delivery Post Office Plan. The post office was located here from 1928 until at least 1933 (but no later than 1938), according to the Annual Reports for Yellowstone National Park.

Examination of the annual reports filed by Hamilton Stores, Inc. from 1929 through 1950 indicates that no major changes or building expansions occurred at Lake General Store during this time.

1938

Construction of soda fountain in the east wing, probably by the Northwest Fixture Company of

Billings, Montana. See more in-depth discussion in Soda Fountain below.

1951

In 1951, a Lake Store "addition" for a cost of \$352.31 was listed in Hamilton Store's 1952 annual report, along with other improvements (store sign, beer cooler, water heater, propane heating system, weighing scale, frozen food cabinet, and meat block) for a total of \$4,152.06.²⁸ Given the minimal amount of expenditure for the addition, it was probably the rear shed on the loading dock. This was probably coincident with installation of the walk-in cooler in the storage wing and the infill of the window blocked by the cooler. These possibilities are discussed in greater depth in Building Additions below.

The knotty log porch decoration was removed. See more in-depth discussion in *Front Entry* below.

1954

The concrete entry steps were repaired.

1958 Fire

A structural fire report was filed on August 18, 1958, summarizing a fire discovered at 2:45 pm on August 7, 1958. The point of origin was identified as the "roof of store near fireplace." The extent of property damage was minimal: \$10. The damage to the roof was "of little consequence," and there was no loss of life. A spark from the chimney was listed as the cause; it was extinguished by water from a Jeep fire truck. It was recommended that a screen be placed around the chimney to prevent similar fires in the future.²⁹

²⁸ Hamilton Stores, Inc. Annual Report for year ending 1952. Box C-9, Folder: Annual Reports 1951-1952.

²⁹ Individual fire report for buildings on government property. Box A-383, File A7631 Book #1, July 1953 to January 1959. Yellowstone Research Center.



Lake General Store Historic Structure Report

Annual reports for 1955 through 1964 don't identify any improvements at the Lake General Store. This is supported by Trevor Povah's letters to superintendent Mr. Lemuel A. Garrison regarding intended improvements at Hamilton Store facilities in the Park; no mention is made of improvements for Lake General Store.³⁰

1959

The Hebgen Lake Earthquake, which took place on August 17, 1959, with two severe tremors the following day and intermittent tremors throughout the month, had the following reported effects:

"Within the Park, sections of the Grand Loop road were buried by rockslides, buildings were damaged at Old Faithful and at Mammoth hot springs and 298 geysers and hot springs erupted, 160 of which had no previous record of eruption."³¹

On August 22, Old Faithful Inn was closed for the season, and:

"Other concession units closed late in August when it became apparent that travel to the park was so reduced as a result of the quake that to continue to operate them would be impracticable."³²

1995

Pat Povah put a new foundation under the west wing c.1995. The ground around the wing was dug under to replace the concrete. This was done in an attempt to eliminate the perpetual water run-off from the adjacent hill and the subsequent damage to the foundation and framing. The floor joists were found lying in the

dirt and rotting; these were replaced at the same time the foundation was replaced.³³

³⁰ Box C-30, Folder: Buildings & Other Facilities: Hamilton Stores, Inc. 1953-1959.

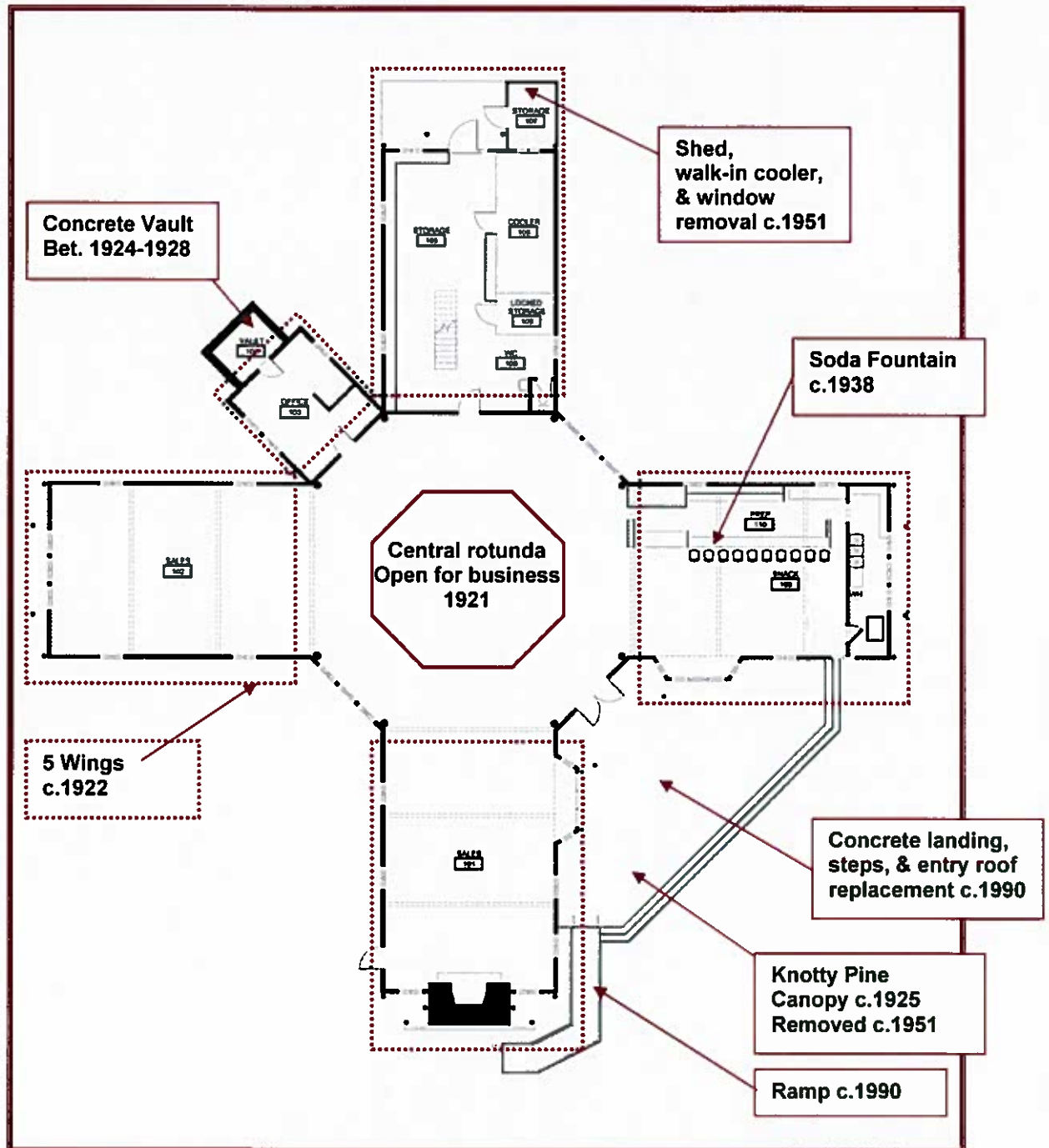
³¹ Annual Report for Yellowstone National Park: 1960, p. 2.

³² Annual Report for Yellowstone National Park: 1960, p. 2.

³³ Interview, Eleanor and Pat Povah, July 27, 2007, by Lesley M. Gilmore.



Lake General Store Historic Structure Report



Lake General Store Floor Plan
Construction History



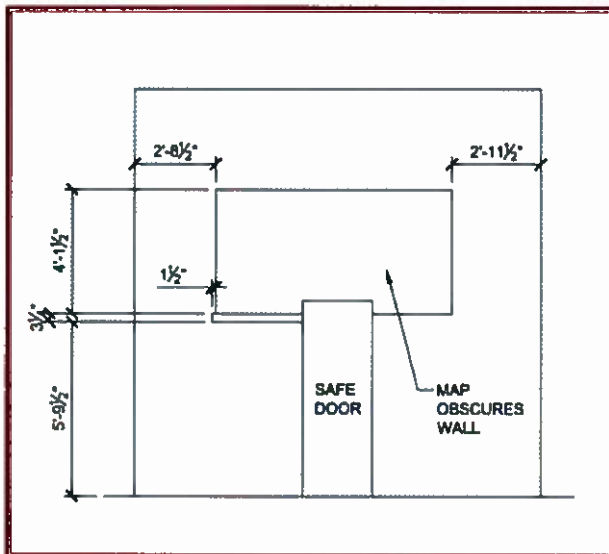
Lake General Store Historic Structure Report

Building Additions

The Povah family can't remember a time when the concrete vault and north shed were not part of the building.³⁴ Physical evidence and historic photographs identify these two components as additions from c.1924-1928 and 1951, respectively.

Concrete Vault

The northwest wall of the office, where the vault engages the office, was originally an outside wall. Beadboard infill clearly marks the outline of the window opening and the stool. It is presumed that the vault addition occurred after 1924 (when not shown on the site plan) and 1928, when it was depicted on the Contract Delivery Post Office plan.



Northwest wall of the office, indicating where the original window opening has been patched with beadboard.



Concrete vault, 2007 photograph, as viewed from the north.



Northwest wall of the office, with clear demarcations of the beadboard patch at the original window opening.

³⁴ Interview, Eleanor and Pat Povah, July 27, 2007, by Lesley M. Gilmore. All of the Pat and Eleanor Povah remembrances noted herein were related during this interview.



Lake General Store Historic Structure Report

Loading Dock & Shed

Pat Povah believed that the loading dock had always been there, especially since it was a low (2-foot) height appropriate for older, lower trucks and not the standard height of 48" to 54" appropriate for trucks of today. A low dock is evident at the far right of the pre-1951 photograph; the shed is not in this photograph. The dock height appears to coincide with the current height.



c.1951 photograph depicting the tall concrete base (without the wood watertable) at east side of north wing. An extension of the concrete to what is probably an early loading dock is visible. Photograph courtesy of the National Park Service, Yellowstone National Park, YELL #30089.

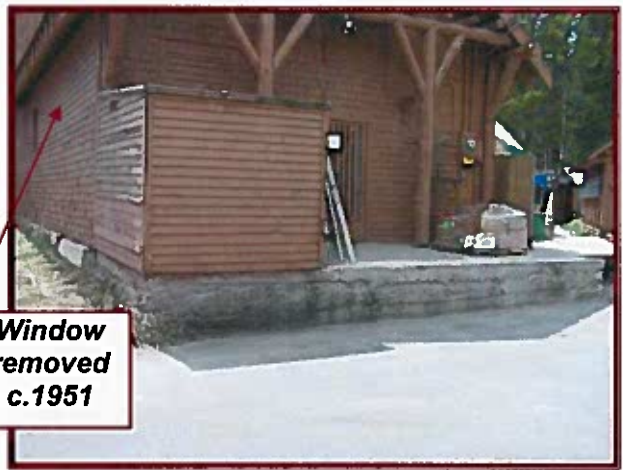
Current physical evidence of stone veneer at the east side only of the existing concrete loading dock,³⁵ and the low height of the loading dock indicate that this was probably an early construction. A dock would certainly have been critical to the operations of the store.

The shed was constructed after the c.1951 photograph was taken, and it conceals much of an original window on what was the outside north wall of the storage wing. The different vocabulary – of clapboards and low-sloped roof

³⁵ There is no evidence that the north side of the loading dock was ever faced with stone.

– also provides evidence that it was an addition. It was probably the \$351.51 "addition" referred to in the 1952 Annual Report.

The construction of the shed may have been coincident with the installation of the walk-in cooler and the consequent removal of the north window in the east wall of the north wing. The c.1951 photograph depicts this window, which is no longer extant. Sawmarks on the wall indicate the window's original location.



2007 photograph of the loading dock and shed.



2007 close-up of loading dock at shed. The stone at the base of the concrete implies a c.1922 construction here.



Lake General Store Historic Structure Report

The Entry



c.1930 photograph of Hamilton's Lake Store, showing Alma and Sybil Parkes, and Inga Thompson Dunn. Photograph courtesy of Eleanor Povah.

In c.1925, the building entry was enhanced with the construction of a knotty log porch framework similar to the burled log construction on the Klammer General Store (that Hamilton had purchased in 1915).³⁶ This open-air canopy encompassed nearly the whole footprint of the concrete deck and appears to have extended above the height of the eaves on the adjacent wings. This canopy of logs was removed in 1951 at the request of Charles Hamilton, and the concrete deck was repaired in 1954.

Correspondence between Charles Hamilton and the administration at Yellowstone National Park (YNP) portrays the deliberation taken in determining what should replace the canopy, and the resultant time lag that occurred between the removal and the replacement. This work also dealt with repairs of the original concrete steps.

In July 1951, Hamilton wrote to YNP, requesting authority to replace the knotty pine log porch decoration at the Lake Store with new and straight logs. Edmund B. Rogers,

³⁶ Lee Whittlesey, *A Yellowstone Album*, p. 76.



This c.1950 photograph shows the spalled steps of the concrete entry deck before the 1954 repairs. Photograph courtesy of the National Park Service, Yellowstone National Park, YELL #30089.

Superintendent of YNP wrote back indicating that the NPS consensus "...was that the most desirable solution was to remove the present deteriorated logwork entirely and not replace it with anything. However, if you still believe that the open porch structure is necessary this will be your authority to make the improvement. The improvement would be made in conformance with the plan you have had prepared and a print of the plan is attached."³⁷

Hamilton's July 20, 1951 plans for a replacement porch with big logs were subsequently rejected by the Park Service.³⁸ Hamilton submitted a revised design in May 1954, outlining his thoughts for repairing the concrete and providing a canopy:

³⁷ Edmund E. Rogers, to C.A. Hamilton, July 17, 1951. The referenced plan was not included in the YRC files.

³⁸ Sketch by Hamilton Stores, July 20, 1951. Box 66, Folder 900-01 Buildings & Construction, Hamilton Stores, Inc. 1 of 2. YRC. The sketch is faint and not of reproducible quality.



Lake General Store Historic Structure Report

"We would like permission to repair the concrete steps in front of the Lake Store; and, as we have removed the old log-work in front of the store, we would like to put a 4' canopy over the front door as the building looks pretty naked since the removal of the logs."³⁹

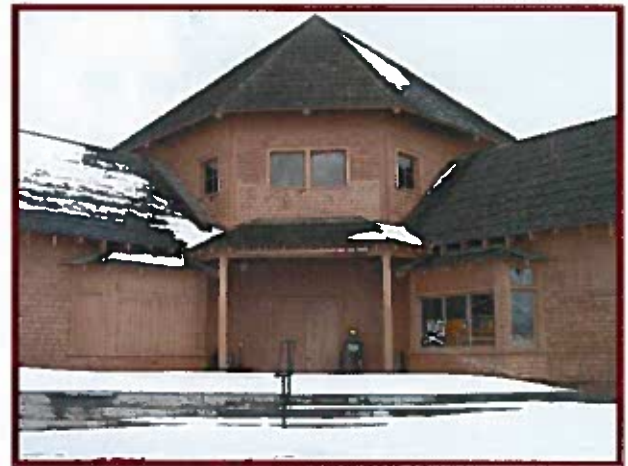
This note followed what appears to have been Hamilton's 1952 purchase of \$292.77 of materials for the canopy.⁴⁰

In May 1954, Rogers approved Hamilton's request to repair the concrete steps,⁴¹ but referred the canopy proposal to a Mr. Mattson, who negotiated a compromise with Hamilton's staff. Rogers summarized it as follows in his July 16, 1954 letter to the "Gentlemen" at Hamilton Stores:

"You requested this spring the permission to construct a porch on your Lake store to replace the Knotty pole framing which was removed. There is attached a sketch of a small proposed porch which we believe will serve your purpose and give the doorway more prominence [sic] than it now affords. This idea was discussed by Mr. Mattson with your Mr. Tony Mayish and it appeared to be the most logical and practical thing to do. Mr. Mayish thought he would get around to this work in August."

This porch – the entry roof and columns, as well as the entire concrete deck and steps – was subsequently replaced by the Povahs in the early 1990's.⁴² The entry roof is currently

supported by the building and two 8" x 8" timber columns. The concrete landing and steps matched the configuration and dimensions of the prior installation.



Current entry porch and landing, 2007.

³⁹ Povah to Rogers, May 22, 1954. Box C-30, Folder – Buildings & Other Facilities: Hamilton Stores, Inc. 1953-1959.

⁴⁰ HIS annual report for year ending September 30, 1953, Box C-9, Folder: Annual Reports 1953-54. YRC

⁴¹ Edmund B. Rogers, superintendent, letter to T.S. Povah, May 26, 1954.

⁴² Interview, Eleanor and Pat Povah, July 27, 2007, by Lesley M. Gilmore.

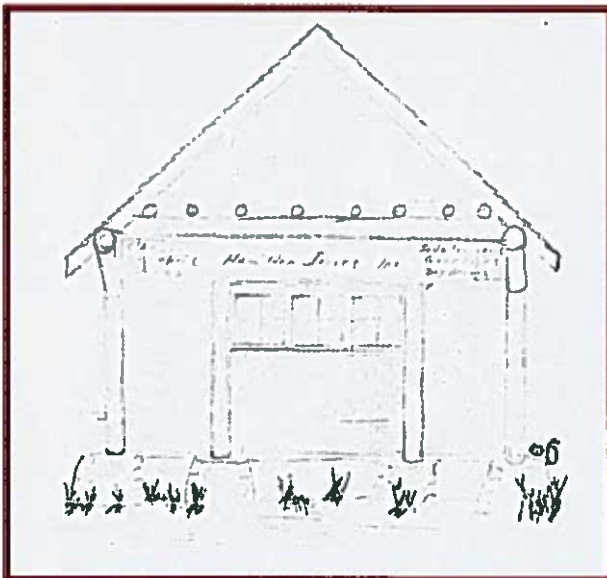


Lake General Store Historic Structure Report

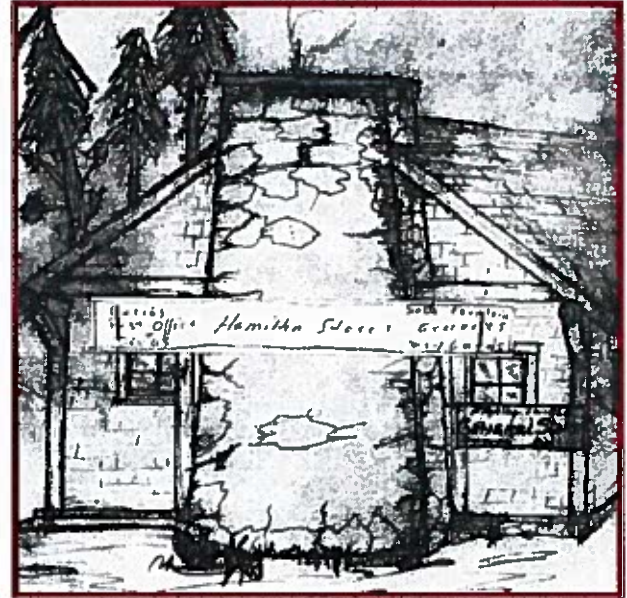
Signs

In July 1951, Hamilton wanted to place new signs on the Lake Store. The Park Service requested a sketch of some sort to show the true size and placement of the signs. Edmund Rogers stated:

"We are ready to authorize one sign over the porch as shown on the attached plan and if you choose to place it there this will be your authority to proceed. ... If you choose to have the two signs on the ends of the building it will be necessary for you to furnish a sketch which will adequately describe your proposal...All of the advertising signs on the outside of the building should be removed immediately and not periodically replaced. Other than the store signs the store buildings should be free of all other signs."⁴³



July 17, 1951 sign proposed by Hamilton Stores.



July 17, 1951 sign proposal for chimney elevation, by Hamilton Stores. NPS recommended that the sign be divided into three parts and that some of the words be modified.

Terry Povah responded immediately with two sketches of the proposed sign arrangement, indicating his hope for approval to erect the signs:

"Much automobile traffic approaching this store along the highway from the east and west now passes by the store because, from the east and west approaches, the building is thought by many to be a dwelling house."⁴⁴

The Park Service reviewed these sketches and recommended splitting the sign at the chimney into three parts, for a better fit. They provided the following additional notes:

"We also have noted the text of the sign which you have submitted and as previously, we are suggesting that you use

⁴³ Edmund B. Rogers, Superintendent YNP, letter to C.A. Hamilton, July 17, 1951. YRC.

⁴⁴ Terry Povah, Vice president, to Rank Mattson of NPS/YNP, July 17, 1951.



Lake General Store Historic Structure Report

the terms 'Souvenir' in place of 'Curios' and 'Clothing' in place of 'Dry Goods'...The background should be dark brown, but not a dirty or black brown, as it should harmonize with the store color. The letters should be a cream or ivory color and the letters may be outlined with a dark snap line if desired."⁴⁵

Edmund Rogers approved the revised signs in August 1951.⁴⁶ It is assumed they were installed soon after; Hamilton Store's 1952 Annual Report lists the expense for the store sign as \$160.80.⁴⁷

Roofing

The 1999 Historic Structure Survey Form states: "In 1938 Hamilton resingled the roof and restained the exterior of his store and repainted the interior after installing new fountain equipment." While this date corresponds well to the proposed installation date for the soda fountain, the direct resource for this quote is not provided in the survey form, and doesn't support the physical evidence and oral history that the roofing has probably not been replaced since the original construction of the building. See **Character-Defining Features** for photographic comparison depicting the consistent error in the shingle pattern on the roof.

Pat Povah believes that the shingles are original. Hamilton Stores, Inc. didn't replace the

roofing as planned in the 1950s, because the future of the store was in flux.⁴⁸

⁴⁵ Edmund B. Rogers, Superintendent, to Trevor Povah, July 25, 1951.

⁴⁶ Edmund Rogers memo to regional director, August 21, 1951. Reference drawings No. NP-YEL 8296.

⁴⁷ Hamilton Stores, Inc. Annual Report 1952, Box C-9, Folder: Annual Reports 1951-1952. Yellowstone Research Center.

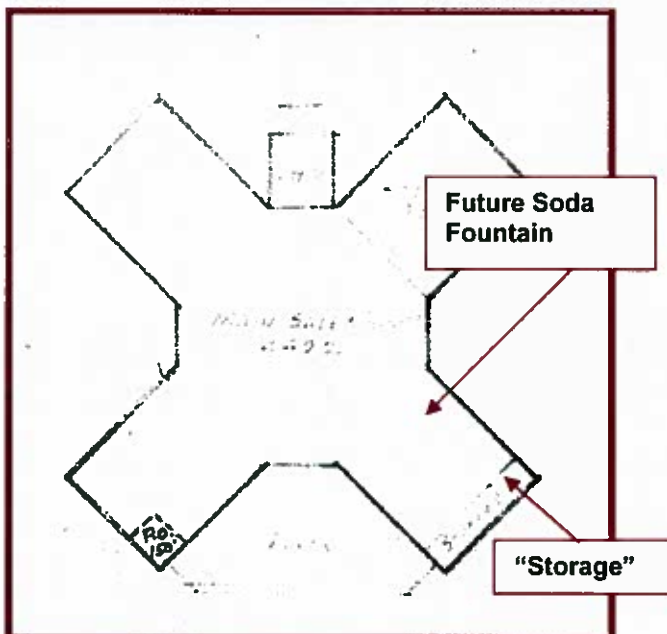
⁴⁸ Povah interview, July 27, 2007. See discussion below regarding *Consideration Given to Building a New Lake Store*.



Lake General Store Historic Structure Report

Soda Fountain

Yellowstone National Park annual reports indicate that the Lake Store had some form of soda fountain at least as early as 1926, when C.A. Hamilton "installed 2 new liquid carbonic soda fountains with Frigidair – one at Lake and one at Old Faithful Public auto camp."⁴⁹ Soda fountains had become a stronghold in drugstores and ice cream parlors since 1903; their spinning stools, gooseneck spouts, and marble tops became a popular fixture throughout all towns in the United States.⁵⁰



1928 Contract Delivery Post Office location plan. No soda fountain is depicted.

The above plan depicts the location of the contract delivery post office, which was located in the store from 1928 through 1933. The plan is helpful in that it does not show the current

soda fountain, but indicates instead storage at the far end of the east wing.

The basis for the more substantial fountain equipment that is currently in the store was probably installed in 1938. The 1999 Historic Structure Survey Form states that Albright reported that Hamilton repainted the interior after installing new fountain equipment.⁵¹ This equipment appears in a c.1940 photograph of the fountain, located along the north wall of the east wing. Eleanor Povah is shown in the photograph as a young woman in her late teens.



c.1940 photograph of the soda fountain, with Ellie and her mother May Hamilton. The marble counter and bar front have been replaced. The stools remain. Photograph courtesy of Eleanor Povah.

This 1938 soda fountain was updated by the Northwest Fixture Company of Billings. The firm was operating under this name since 1930, and might have been involved in the 1938 construction. The current fountain retains the same stools, but the countertop was replaced with a plastic and the bar was faced with pine paneling.

⁴⁹ Annual Report for Yellowstone National Park, 1924-1929, 1926, p. 33-34.

⁵⁰ http://en.wikipedia.org/wiki/Soda_shop

⁵¹ Historic Structure Survey Form, 1999. This form provided sources, but does not tie them directly to the quotes provided.



Lake General Store Historic Structure Report

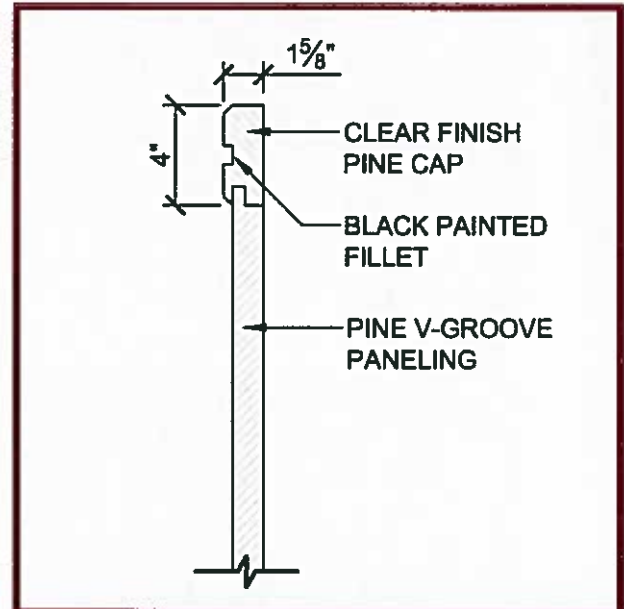


The company logo behind the Lake Store soda fountain. This trim has a dark reveal in the pine cap.

The Northwest Fixture Company began as the Billings Cabinet Company in 1912; it became known as the Northwest Fixture Company in 1930 and operated until 1998. The firm was based in Billings, Montana and billed themselves as "Manufacturers & Jobbers" which stemmed from their experience as a cabinet shop and desire to take on a larger market. They provided soda fountains for pharmacies, bakeries, and cafes throughout Montana and Wyoming. Their advertisement shown herein illustrates and lists several of their installations, unfortunately the Hamilton Lake Store is not listed. The image of the Grand Café in Billings, however, shows a similar reveal to the trimwork above the booths that was used to cap the walls at Lake's Snack Area. Their ad also depicts "Commercial Refrigerators in Stock and Built to Order."



One of four scone ghosts on the back wall of the soda fountain.



The section detail of the pine cap with dark reveal at Lake General Store.



The back bar at Lake Store's fountain repeats the pine motif, with arched cabinetry.



Lake General Store Historic Structure Report

Mechanical System

The ranges at Lake General Store were originally fueled with wood, according to a 1948 letter that Hamilton addressed to the Park superintendent. In January, Hamilton wrote:

"We are contemplating the use of Propane gas for our kitchen ranges and would appreciate any information pertaining to Government installation and regulations. Since our supply of wood is just about exhausted we would like to make the installation as early in the spring as possible and would appreciate your earliest consideration on the matter so that we can place the orders for the necessary equipment."⁵⁵

The installation of propane equipment did not occur until 1952, and was actually installed with the anticipation of providing this fuel to a replacement store. (See *Consideration Given to Building a New Lake Store* below.) Hamilton informed Superintendent Edmund Rogers as follows:

"Men are now at work installing a large propane tank in back of the Lake dwelling. Before starting this job made sure it was being placed in the proper location for the proposed new store."⁵⁶

Hamilton Store's 1952 Annual Report documents this installation with entries for purchases of a water heater (\$504.25, installed)

⁵⁵ Charles Hamilton, letter to Edmund Rogers, January 6, 1948. Box C-28, File No. 900-01 Hamilton: Hamilton Store; Buildings & Building Equipment, Part 6.

⁵⁶ C.A. Hamilton, letter to Edmund B. Rogers, September 20, 1952.

and a propane heating system (for \$1,995.15).⁵⁷

The Park Service had recommended stalling this installation until a decision had been made about bringing electrical power to the Park. Rogers relayed the following to Terry Povah (Hamilton's vice president):

"The Service is currently studying the location of power lines for bringing in electrical power into the park and there is some hope that it will materialize."⁵⁸

In 1953, a new heating system was installed in the store for a cost of \$2,193.47.⁵⁹

In 1954, there was additional correspondence between Charles Hamilton and Edmund Rogers regarding the use of liquefied petroleum gas for the equipment at the Lake Store and the adjacent Dorm. Hamilton submitted plans that had been prepared by the Propane Company of Gardiner, for approval by NPS. Hamilton prefaced this submittal with the statement:

"It is our intention, as you can see from the accompanying plans, to connect the supply line leading to the General Store on to the existing piping system near the manifold at the rear of the Lake dorm...The current heating stoves in use in the General Store are in very bad condition and hazardous to use in addition to being inadequate. We are reluctant to purchase new equipment as we anticipate the installation of the LP-Gas equipment."⁶⁰

⁵⁷ Hamilton Stores, Inc. Annual Report 1952, Box C-9, Folder: Annual Reports 1951-1952. Yellowstone Research Center.

⁵⁸ Edmund B. Rogers, Superintendent, to Mr. T.S. Povah, July 9, 1952.

⁵⁹ HSI annual report 1953, C-9, Folder: Annual Reports 1953-1954. YRC

⁶⁰ Trevor Povah to Edmund Rogers, September 18, 1954. Box C-30, Folder: Buildings & Other Facilities: Hamilton Stores, Inc. 1953-1959. YRC.



Lake General Store Historic Structure Report

Soon after (in 1954), the Hamiltons connected the propane supply to the (remaining) Lake Store.

Electrical System

The few early photographs of Lake Store – the interior “cage” photographs c.1921, and the 1923 and 1927 Haynes Guide photographs – do not depict any lighting fixtures, although the 1924 YNP Superintendent’s annual report noted installation of new lighting fixtures at the Store.⁶¹ These fixtures were probably limited in number and might not have been electric. Electrical supply to the Park was limited – only Mammoth Hot Springs had a power generating plant sufficient to supply a burgeoning fort and subsequent town. Until commercial power lines were extended into the Park in the late 1950s, users were reliant on small government diesel plants throughout the Park.

The installation of commercial power lines was prompted by the Park’s earlier successful experience with the Montana Power Company’s service to Mammoth in June 1951. A university study confirmed that such power lines extended into the rest of the Park would be less expensive and more reliable than the service provided by the local power plants. “As extended by Montana Power in 1958-59, this line roughly paralleled the road from Mammoth Hot Springs to Norris Junction, where it branched,...the other crossing to Canyon along the old Norris Cutoff, then passing southward to the Lake-Fishing Bridge area and around the north shore of Lake Yellowstone to West Thumb and Grant Village.”⁶²

⁶¹ YNP Annual Report: 1924, p. 30-31.

⁶² Aubrey L. Haines, *The Yellowstone Story*, p. 377.

Plumbing System

The date of the installation of the small restroom – with toilet and lavatory – in the southeast corner of the storage wing is unknown. It was apparently extant in 1947, when Hamilton Stores acted upon the findings of a sanitary inspection report, stating that:

“...the present toilet is being modernized with modern facilities...we are installing a lavatory convenient to the fountain...we are installing a three section vat for dish washing.”⁶³

⁶³ T.S. Povah, Box C-28, File No. 900-01 Hamilton: Hamilton Store: Buildings & Building Equipment, Part 6. YRC.

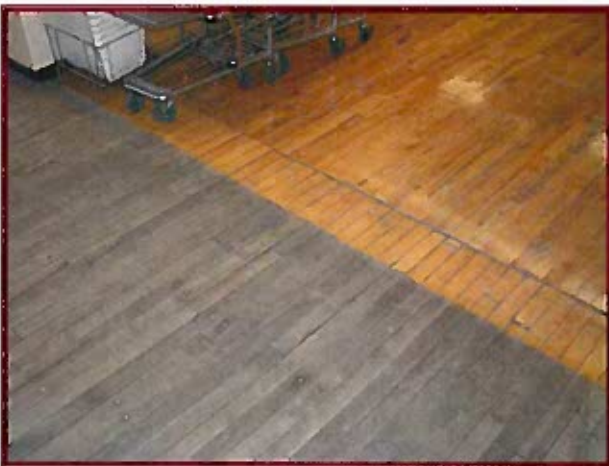


Lake General Store Historic Structure Report

Flooring

The strip (tongue-and-groove) maple flooring throughout the building is 2¼" wide hard maple in standard lengths of 10-12'. Wax build-up, wear, and buckling indicate that this flooring is probably original to the building. Hard maple is suitable flooring for the wear and tear expected for a busy retail space. The subflooring is of 6"-7" wide diagonal pine planks, covered with standard building paper.

There are several floor areas that have been patched – some with matching maple flooring and some with 2¼" tongue-and-groove oak. The west wing flooring was entirely replaced with plain sawn oak when the foundation and floor framing were replaced c. 1995.⁶⁴



The flooring at the left is the original maple; the flooring at right is the replacement oak in the west wing.

⁶⁴ Interview, Eleanor and Pat Povah, July 27, 2007, by Lesley M. Gilmore.

Post Office

At the start of the 1928 season, Lake General Store became one of the first five park locations where "Contract delivery postal stations were established..." This office, and the other four (Hamilton's general stores at Old Faithful and Fishing Bridge auto camps, Whittaker's general store at Canyon Junction, and the Haynes' general store at Tower Falls auto camp) "...were connected up by a Star Route service handled by the YP Transportation Company, which system has proven to be a great improvement over the carrier service in effect since 1923. The receipts from the new stations indicate that the service is justified."⁶⁵ These stations were maintained through 1932, when a main post office was built at Mammoth Hot Springs.⁶⁶ Lake General Store and the other contract stations were still part of the loop through 1933 (they are not mentioned in the 1934 annual report for the Park).

⁶⁵ Annual Report Yellowstone National Park: 1928, Post Office Department, p. 19.

⁶⁶ Annual Report Yellowstone National Park: 1932, p. 19.



Lake General Store Historic Structure Report

Consideration Given to Building A New Lake General Store

Introduction

In the late 1940s through the mid-1950's, the future of the Lake General Store was in question. The National Park Service's opinion on the store's future varied depending on the future of the activities in the overall Lake District. There was thought given to abandoning the store at Lake, also of relocating the store site and building a larger facility. Hamilton felt the store was successful, yet too small, hence needed to be replaced with a larger store. Hamilton's plans fell permanently quiet while the Park Service considered a further study of the whole area. With the lodge, the hotel, and the various stores within each, the options were plentiful.

Sequence of Events

In 1948, Hamilton Stores was prompted – presumably by talk of removal – to caution the Park to retain the store. The regional landscape architect for the Park stated: “Mr. Povah brought up the subject of elimination of the store at Lake and pointed out the need for those facilities there because of the distance to Fishing Bridge or West Thumb. It was his opinion that the store facilities at Lake should be retained to serve the cabin users in the Lake Hotel area and the campers in the campground to the west.”⁶⁷

This discussion continued in 1952, when the Park reviewed Hamilton Stores' planning projects, which included improving and expanding their present stores. Hamilton was anxious to proceed with the project, as noted by the Park:

“Mr. Hamilton is of course doing all he can to push his building construction man, Mr. Rasmussen, into going ahead with the

⁶⁷ Jerome C. Miller, regional landscape architect, Feb. 27, 1948 memorandum.

actual construction. However, Mr. Rogers has advised Mr. Povah that no work will be started without plans that can be approved.”⁶⁸ (P1)

Hamilton requested permission to expand the parking at the Lake Store, to improve the building itself, and to erect a dormitory “comparable to that being built at Old Faithful.”⁶⁹ Mr. Baker, the regional director, recommended deferring construction and considering a new store development in the vicinity. The decision-making process revolved around use of the other buildings in the Lake District, as noted by Park Service personnel:

“During the period in which consideration was being given to abandon the Lake Lodge development the status of the Hamilton Lake Store was also unsettled and apparently there had been some thought given to abandoning this store....The fact that the Lake Lodge is now to be retained and that Hamilton Stores have a shop in the Lake Lodge and that the Hotel has a gift shop has had some bearing on this development. The store is now relatively popular as a day use store because it adjoins the gasoline station and sits directly on the side of the highway. This store has generally been the first to open and close possibly for three reasons; it was possible to heat, it is on the main loop road and service and concessioner work crews were in the area late into the season.”⁷⁰

Now all parties agreed on the intent to build a new store at the Lake site. The Park Service tentatively considered “...locating the store in the area between the Lake Hotel Cottages and Lake Lodge.”⁷¹ They included the Ranger

⁶⁸ Frank E. Mattson, resident landscape architect, letter to superintendent, dated August 5, 1952.

⁶⁹ Ibid.

⁷⁰ Ibid.

⁷¹ Ibid.



Lake General Store Historic Structure Report

Station in their planning, because they felt that the ranger station was too close to the highway. They delayed further work until the development plans could be finalized and reviewed.⁷²

As part of the Park's review of Hamilton Store's intended projects for 1952-53, regional director Howard W. Baker met with Povah at the Lake Store site in July 1952. He summarized this meeting in a memo:

"At Lake, Mr. Hamilton would like to build a new dorm back of the Lake store. In view of the large concentration of business at the Fishing Bridge store, it is my opinion that we would be justified in permitting Mr. Hamilton to continue the Lake Store; consequently, rather than build a new dormitory and specify money fixing up the old store, it is my suggestion that a new building be built just east of the present Lake Store site and the entire area assigned to Hamilton be rearranged to provide adequate parking and room for the operation of the filling station."⁷³

Apparently Hamilton Stores provided the Park Service with plans for the store, dormitory, and parking area at the Lake Store. Regional landscape architect Charles E. Krueger references these plans in a letter to the Park, stating that it would be beneficial to agree where the facilities should be located "before Hamilton starts to build."⁷⁴

With his November 1952 submittal of plans to Edmund B. Rogers, Superintendent NPS/YNP,

Hamilton noted that the Lake Store was much too small and wouldn't be able to accommodate the increased number of tourists. He notes that if the plans are approved, he'll have the working drawings prepared.⁷⁵

Edmund Rogers' internal response to the drawing submittal indicated that the plans had been prepared by Mr. Rasmussen. Rogers felt the design needed improvement. A discussion ensued about having Park Service architects prepare sketches. This concept was abandoned in a later letter; the design was the concessioner's responsibility.⁷⁶ The regional director agreed that the drawings were insufficient to review and stated that: "This type of planning was previously turned down by this office in the case of Hamilton's West Thumb addition."⁷⁷

Further Howard Baker opined that:

"We certainly endorse your statement that we would be open to criticism if construction of this type were undertaken. It is certain that any similar type of structure in an area such as the new Canyon layout would not be acceptable." He felt the need to quote from the Administrative Manual that concessioner's project drawings must be prepared by licensed architects and engineers. Recommends return of the drawings to Mr. Hamilton and "advise him of the requirements and the necessity of obtaining the service of an architect who is capable of preparing a fitting design..."⁷⁸

⁷² Ibid.

⁷³ Howard Baker, memo dated August 14, 1952. Box 66, Folder 900-01 Buildings & Construction, Hamilton Stores, Inc. 1 of 2. YRC.

⁷⁴ Charles E. Krueger, letter to resident landscape architect at YNP, dated September 25, 1952. Box 66, Folder 900-01 Buildings & Construction, Hamilton Stores, Inc. 1 of 2. YRC.

⁷⁵ Charles Hamilton, letter to Edmund Rogers, dated November 12, 1952.

⁷⁶ Edmund B. Rogers, Superintendent, letter to Regional Director, Region Two, dated November 21, 1952. The letter references plan number NP-YEL-8353.

⁷⁷ Howard W. Baker, Regional Director, letter to YNP superintendent, Dec. 11, 1952.

⁷⁸ Howard W. Baker, letter to YNP superintendent, Dec. 11, 1952.



Lake General Store Historic Structure Report

The acting superintendent relayed the above to Charles Hamilton, softening the tone by indicating that this action protected Hamilton Stores and ensured that high quality buildings will be built in the Park.⁷⁹

Then he butters Hamilton up: "We believe that with your well recognized and envied business acumen you can readily understand the value of complete architectural plans and that in the final analysis there are savings which will accrue to you during the construction of the building..."

By March 1953, a colored drawing (#NP-YEL-2136-A) of a study for a proposed location of a new store, gas station, and dorm had been submitted. In referencing the location for the gas station, it appears that the intent was to place the ranger station where the Lake Store was: "there was no alternative but to place the gas station back far enough to permit operation of the existing ranger station with the proposed ranger station located in the general area now occupied by the Lake Store."⁸⁰ This discussion implies the intention to demolish the Lake General Store.

As with many deliberations regarding older structures that might be considered obsolete or insufficient in some respect, it appears that the future of the Lake General Store was undecided for years and that demolition was not the only option considered. Pat Povah recalls that he had been told of discussions that began in the 1950's and continued on through the 1970's that focused on converting the Lake General Store building to a museum or a rangers station. Hamilton Stores, Inc. was expected to build a new general store. With the building's future use and ownership unknown, Hamilton

Stores, Inc. was hesitant to make improvements on the building and deferred maintenance until its future was decided.⁸¹

Later in the spring of 1953, the Park Service questioned the need for the store at all. The Park Service noted that the present store and Ranger Station were located when the campground was in this area and that this situation changed when the Fishing Bridge campground and cabin camp were installed. "There is no cooking in the hotel or lodge rooms, so the need of a grocery store no longer exists.... There is a question as to the need for a store at this location, or at least not so large a one. It would seem that space in the Hotel and Lodge Lobbies could be mutually arranged between Hamilton Store and the Hotel and Lodge Companies, such as at Old Faithful Lodge."⁸²

The Park Service shelved the above plans in April 1953, in light of "more pressing problems."⁸³

In spite of above, or as result of inaction, Hamilton Stores, Inc. improved Lake Store in 1952 and 1953, as depicted on the Construction History Plan.

Correspondence in 1954 indicates that Mr. Povah was still considering the possibility of rebuilding "their Lake Store at some future date, although this was indicated as low priority."⁸⁴

⁷⁹ Acting Superintendent, letter to Mr. Hamilton, dated December 24, 1952.

⁸⁰ Sgt William E. Robertson, Acting Assistant Regional Director, letter to the NPS Director, dated March 11, 1953.

⁸¹ Interview, Pat Povah, July 27, 2007, by Lesley M. Gilmore.

⁸² Thos. C. Vint, Chief of Design and Construction, letter to Regional Director, Region Two, dated April 13, 1953.

⁸³ Robert G. Hall, letter to Superintendent, Yellowstone National Park, dated April 29, 1953.

⁸⁴ Sanford Hill (chief, western design and construction), memo to YNP superintendent, February 3, 1954. Box C-30, Folder: 1953-1959 Hamilton Stores. YRC.



General Construction Process

Hamilton built day-by-day, by the seat of his pants. Rasmussen ("Ras") was the builder who made recommendations that Ham decided upon, in keeping with the piecemeal design and construction fashion of a typical Ham project. Construction directions written on shingles were a common way of communicating. Hamilton saw no need to get "hung up on rules."⁸⁵ These impulsive judgments and variance with the agreed-upon plans resulted in frustration of the National Park Service and, it seems, construction delays. Hamilton typically used whatever materials were available; inconsistencies throughout the building in material usage should not be interpreted as different building campaigns. For instance, on the south wing ceiling, the finish material is V-groove board at the lower portion of the slope, but is of beadboard from about the center of the slope to the ridge. This is not to be construed as definite evidence of a later modification, but as probable evidence of original available materials.⁸⁶

Superintendent Horace Albright related that:

"I always admired Charles Hamilton – Ham, as we called him. He was always ready to build, and he built well and fast. You didn't have to wait for him. He would usually move in before the government was ready for him...One of the first troubles I had with Ham was at the Lake Store...Before the landscape architects went in to say what trees should be left and which cut, he had already cut down the trees. We had to let him build the way he wanted to."⁸⁷

⁸⁵ Pat Povah, July 27, 2007 interview by Lesley M. Gilmore.

⁸⁶ Pat Povah, July 27, 2007 interview by Lesley M. Gilmore.

⁸⁷ Gwen Petersen, p. 61-62. This quote is from a 1970 interview with Albright.

The 1999 Historic Structure Survey Form reports that Albright didn't like the use of both logs and 2x10s as rafters: "The central portion had log rafters and the wings used the cut timber." This form also indicates that Albright didn't like the drop siding – he preferred the shiplap siding used on the William Nichols residence at Mammoth. He also mentioned that Ham had decided to add a chimney which had not been on the approved plans for the building (testifying to the existence of said plans); however he had no problem with the addition of it.⁸⁸

Contractor

Hamilton found a capable carpenter-contractor in Rasmus Detlef Rasmussen, a "person of creative genius with a drive and ambition equal to his own."⁸⁹ "Ras" worked for Hamilton from 1921 through the 1950s. Gwen Peterson related in *Yellowstone Pioneers* that:

"With Rasmussen's help, Hamilton expanded the Lake store in 1924 by relocating and building a more commodious structure. They chose a site, but found that the access road would have to be built over a lonely grave, or an exorbitant amount of money spent to go around it. Rasmussen thoughtfully moved the headstone to a suitable nearby spot, erected a picket fence around it, and placed memorial flowers on the stone. The same year, Hamilton added a wing to the Old Faithful store and obtained permission to sell groceries at West Thumb and Fishing Bridge stores."⁹⁰

⁸⁸ *Historic Structure Survey Form*, 1999.

⁸⁹ Gwen Petersen, p. 67. Petersen relates an engaging account of Rasmussen entering the Park with a dogsled team in early spring, driven by his ambition to enlarge Hamilton's Old Faithful store.

⁹⁰ Gwen Petersen, p. 68.



Lake General Store Historic Structure Report

Siting - Roads

The Lake General Store and support structures (dormitory, service station, root cellar, storage shed, and comfort station) are located east of the Lake Hotel. The Store, the service station, and the comfort station face the lake. The utility buildings are located northwest of the Store.

Historic photographs from c.1922 and c.1950 show a hard-packed and/or paved road passing by the front of the store. Gravel parking was defined around the south and west sides of the building in the 1950's. The area between the north and east wings is shown as vegetated in the c.1950 photographs.

When the store was constructed, the road paralleled the shore of the lake, hence placing



This c. 1951 photograph shows the hard pack road that directed visitors to the Store. Photograph courtesy of the National Park Service, Yellowstone National Park, YELL # 30089.

Lake General Store on the main government road through the park. This grand loop road was "on one of the terraces of the ancient lake, when it was a much higher body of water than

at present."⁹¹ As part of the Mission 66 improvements, the main road was redirected to more closely access Lake Hotel, thus bypassing Lake General Store. The store is now consequently essentially on a rear service route, which though quite lovely, results in less traffic to the store. This reconfiguration was a response to the changes in visitation with increased cabins construction and relocation.

⁹¹ Jack Ellis Haynes, *Haynes Guide: Handbook of Yellowstone National Park* (Yellowstone Park, Wyoming: Haynes, Inc., 1947), p. 113.



Lake General Store Historic Structure Report

V. CHARACTER-DEFINING FEATURES

Introduction

It is essential to identify character-defining features in a historic property; this calls attention to those features which contribute to its historic significance. These features are key to the understanding and expression of the building and the time period of its construction. The following spatial qualities and materials should be retained in order to maintain the building's integrity. Most of the features are discussed in greater length and historical context in the **Construction History** chapter of this report.

Lake General Store is considered individually eligible for listing on the National Register of Historic Places under two criterion: A - for its role in the development of the concessions in the Park; and C - as a distinctive example of the Rustic architectural style of the early national parks. It is considered individually eligible at the state level for its association with the historic contexts "Concessions in YNP 1871-1966" and "Architecture in the National Parks 1872-1966."¹



*Hamilton General Store, 1923 Haynes Guide.
Photograph courtesy of Bob Goss.*

¹ Historical Research Associates, Inc., National Park Service - Historic Structure Survey Form for Lake General Store, 1999.



Lake General Store Historic Structure Report

Historical and Architectural Significance

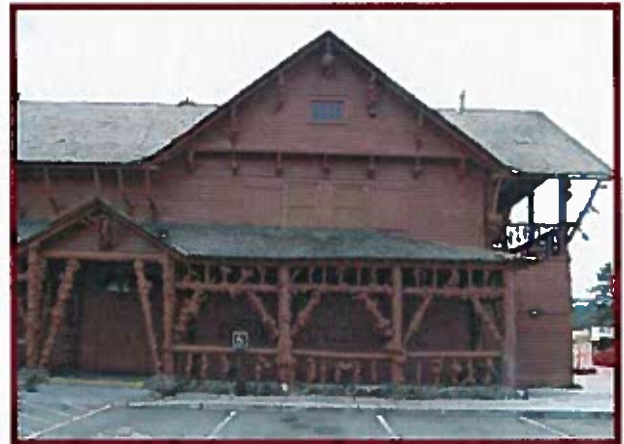
While little is known of the Store's architect, Kirk, the building falls more naturally into a vernacular tone of design. This is a direct result of the design and construction methods promoted by Charles Hamilton. Hamilton built for practicality – for how the building would be used most effectively and how the construction could most easily utilize the materials and construction methods at hand. It appears that many of the materials used in the building came from the Park (with exceptions as noted below); this was a common approach throughout the Park at the time of construction.

While the form of Lake General Store varies from that of the Klammer Store that Charles Hamilton had purchased just seven years earlier,² the design vocabularies are similar.



*Hamilton General Store, c.1927 Haynes Guide.
Photograph courtesy of Bob Goss.*

² Lee Whittlesey, *A Yellowstone Album* (Boulder, CO: Roberts Rinehart Publishers, undated), p. 65. The Klammer store was the first one built in the Old Faithful area, in 1897. Klammer's widow sold it to Charles Hamilton in 1915 for \$20,000, after Klammer had already "rusticated" the building with log porch supports and log braces at the eaves.



Klammer General Store, 2007.

The following features – common to both buildings – form the core group of their architectural expressions:³

1. Wood shingle roofs (smooth crisp shingles, not rough shakes). In contrast, the shingles at the Lake General Store are doubled at regular intervals.
2. Gable roofs with rake and eave overhangs.
3. Exposed log rafters.
4. Wood columns supporting gable ends. Those at the Klammer store are larger and more rustic than those at the Lake Store.
5. Burled and twisted wood components at gable ends, porches, and horse hitches.
6. Walls of standard house construction – wood framing with clapboards or shingles, simple stock window casings, and bay windows (not cantilevered).
7. Most windows are simple single-sash wood windows with divided lites, with the exception of the diamond lites in the 3-sided window of the shed dormer of the Klammer Store.

³ See Construction History for further information on the items discussed below.



Lake General Store Historic Structure Report

8. Stone foundation face of a combination of volcanic igneous rocks taken from the Park: obsidian, rhyolite, and pumice.



Klamer Store stone base.

The Lake General Store building presents two faces to the public – a rough exterior and a simple, almost spiritual, interior. The interior volume of the central space is uplifting with high-mounted windows welcoming, transmitting, and calming the bright summer sunlight, while the white board ceiling and wall planes are supported by the “trees” of bare logs. While built as a place of commerce, the Store reflects its location in the nation’s first national park. Several of the most prominent features are derived from buildings that predate the store; the features became common expressions throughout the Park. In turn, the Store’s design might have influenced the design of other buildings in the Park and Montana. This study is not intended to be an exhaustive architectural survey of these treatments, but draws parallels when they’ve been discovered and appear relevant.



Lake General Store stone base.

The design components discussed on the following pages are paramount to the expression, significance, and understanding of the Store.



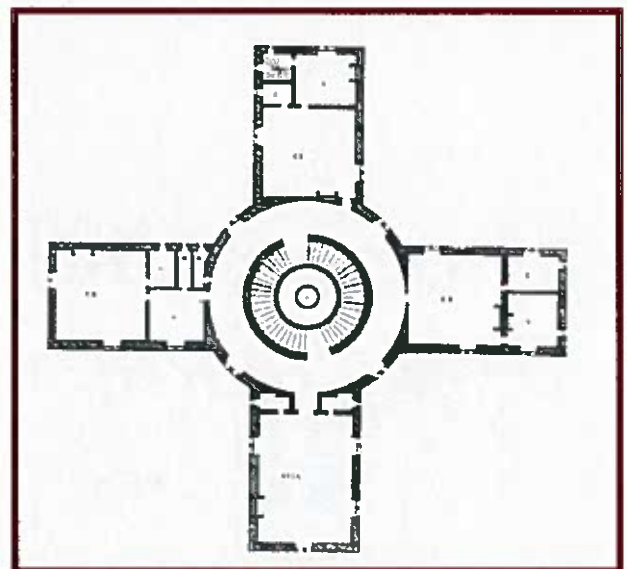
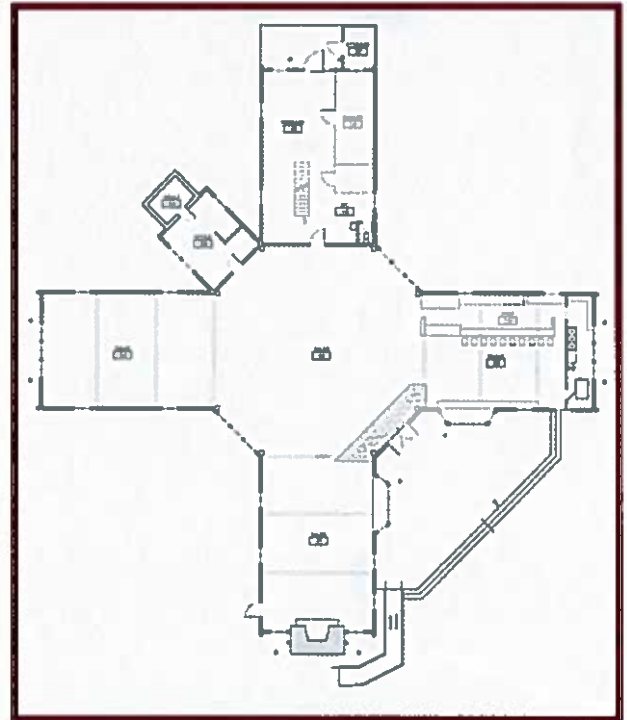
Massing

The Store is designed with a two-story-tall central space from which four main (and one subsidiary) one-story wings radiate, forming a Greek Cross shape in plan.

This allows for easier monitoring of and service to the customers, and provides for geographic categorizing of merchandise. The central space is an octagonal rotunda that contains the entry and acts as the gallery for large scale merchandise such as photographs, animal heads, and bear rugs. Although the wings were added after the store's first season, it appears that they were part of the original design and that the construction was phased to allow for earlier operation.

The raised volume of the central rotunda is the key focus of the building's interior and exterior. It allows for a clerestory of windows to bring diffused light into the central sales area. On the exterior, this mass is graduated down to human scale with the introduction of the side wings and particularly by the covered entry porch at the southeast corner. The stone chimney mass anchoring the south wing helps ground the building, while still paying deference to the central rotunda.

The Greek Cross plan of the store resurrects a well-established plan used frequently by the Ancients.⁴ The Greek Cross plan has two bars of equal length that cross one another in the middle, so that the four arms are equal. Churches customarily used this plan to accommodate the transept, nave, and choir.



The Greek Cross plan – represented here as part of the Du Cerceau Series (1559) - features a central focal point with four wings similar in proportion to those of the Lake General Store.

⁴ Alexander Tzonis and Liane Lefaivre, *Classical Architecture: The Poetics of Order* (Cambridge, Massachusetts: The MIT Press, 1986).



Lake General Store Historic Structure Report

There does not appear to be Park precedence for the octagonal plan of the central portion of the building. Interestingly, the Lake Ranger Station – constructed approximately 300 yards from the Lake Store just after Lake Store was completed - has a primary space that is octagonal. When this building was constructed in 1922, the Park Service considered it some of the "...most important work accomplished by the Government..." at the Park, as part of a trend in which ranger stations were combined with community centers.⁵ This building was purportedly designed in 1920, so might have provided design inspiration for the Lake General Store (if the plans were public).⁶

It's conceivable that landscape engineer Daniel Hull influenced the design of the Lake Store that was completed before the station was.⁷ While the wall construction is different, and a fireplace was the central focus of the octagon, the similarities are sufficient to indicate that the octagon shape might have been intentionally used to relate the two neighboring buildings to each other. Albright praised Hull's efforts as follows:

"During the summer the Lake combined ranger station and community center was built according to your plans and specifications and on the site selected by you. The building is most attractive and we expect it to be the subject of much favorable comment when used next year by the traveling public. The octagon shaped community room is particularly pleasing and the indoor fireplace designed by you surpassed by expectations as to its attractiveness and usefulness. The log

work on the octagon building was carefully done with beautiful results, as pictures I have forwarded to you will show. The building is completed with the exception of installation of windows and doors and the construction of the flagstone veranda along the East side of the building. The windows ordered for the building were not satisfactory and others have been procured to take their place, but the building will be completed in the spring in time for use at the opening of the 1923 season. The interior of the building has been chinked with split logs in accordance with your desires and the exterior building will be chinked in the spring with cement."

The Madison County Fairgrounds building in Twin Bridges is also octagonal in plan. Constructed in the 1930s, it is not a likely precedent for the store's configuration.



The Lake Ranger Station's community room, with central chimney mass, 2007.



The Lake Ranger of 1922 also used local stone at the base. 2007 photograph.

⁵ Horace M. Albright, letter to Daniel Hull, October 27, 1922. Box L-56, File No. 329, YRC.

⁶ Aubrey L. Haines, *The Yellowstone Story: A History of our First National Park*, Volume 2 (Boulder, CO: University Press of Colorado, 1997), p. 304.

⁷ Hull was a NPS landscape engineer based in Yosemite National Park, California.



Roof Shapes

The original roofs of the building are steeply sloped, a common practice in this Yellowstone region of heavy snows. The main pyramidal roof has eight equal facets, each with a 12:12 slope. The wings' roofs, and that of the office, are gable roofs with a 9:12 slope. There are two shed roofs, indicative of the additions: over the vault off the office wing, and the rear shed off the storage wing. The vault roof has an active slope, whereas the shed roof slope is shallow.

The eaves end sharply at the end point of the extended rafter tails. There is no fascia or closed soffit board concealing any of this construction. The roofing extends to the wall plane of the central pyramid.

The building does not appear to have ever been fitted with gutters and downspouts.



The steeply sloped pyramidal roof is flanked by the gable roofs of the side wings.



The shed roof of the rear storage addition is nearly flat.



The shed roof of the concrete vault addition is actively sloped.



Lake General Store Historic Structure Report

Roofing Shingles

The roofs are clad with Redwood⁸ shingles that are – and appear to have been, by study of the historic photographs and construction history – smooth, sawn shingles. The shingles are 16" long, 3" to 12" wide, and 3/8" – 1/2" thick at the butt; typical exposure is 4 1/2". In keeping with most of the other buildings in the Park, the wood shingles were not a rough split shake. The shingles were arranged in a stepped pattern, where every sixth course is doubled. This stepped roofing pattern was common among Prairie Style architects practicing from 1902 through 1926, such as George Maher and Robert Reamer. One of the earlier known precedents for this treatment in the Park (now currently considered to be in Gardiner, just north of the Park's boundary) is the bunkhouse and mess house designed by Robert Reamer in 1906. Like this bunkhouse, the hips and ridges at the Store are capped with shingles (referred to as Boston caps), and not the more protective treatments, such as metal and solid wood caps, which are prevalent throughout the Park. The central pyramidal roof peak is, however, capped with a sheet metal finial which is depicted in the early photographs.



Robert Reamer's bunkhouse and mess house of 1906.

⁸ See Wood Test Results in the Appendix.

While few other buildings in the Park utilized this stepped shingle treatment,⁹ it did establish a precedent for future buildings built by Hamilton, such as the 1924 West Thumb Store, the 1929 Hamilton Auto Camp Store, and the 1923 original Old Faithful campground store.

The shingles are quite worn, supporting the claim that they are probably the original shingles. A trace of dark olive green finish was revealed on a sample shingle. This finish appears to have been applied in the 1950's.¹⁰ This might have been a decorative application, and perhaps one intended to increase the longevity of the shingles.



The smooth sawn shingles are doubled up every sixth course, generating a shadow line at a regular interval.

⁹ Reamer's large hotels in the Park, such as the Old Faithful Inn and the Canyon Hotel, both built at the height of the Prairie Style (the Canyon Hotel was actually of the Prairie Style) had wood shingle roofs without such a breakdown in scale. It is interesting that this device was more prevalent on the smaller scale buildings, presumably where it could be seen and appreciated.

¹⁰ See the Paint Analysis in the Appendix.



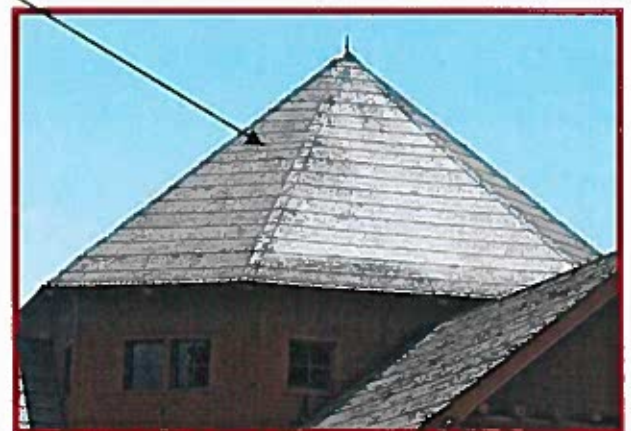
The ridges and hips are protected with Boston style shingle caps.

An error in the coursing pattern of the pyramidal roof is apparent in the historic photographs from 1923 through the 1950's. This is further proof that the current roofing is the original.¹¹

Error in shingle coursing pattern, where doubled-up shingle is less than standard 6-course spacing. Visible on the 1920's and 1950's photographs (the latter shown for clarity) and today.



1950's image of store. Courtesy of the Gardiner Research Center.



Current image of the store.

¹¹ This is supported by Pat Povah's speculations noted during July 27, 2007 interview by Lesley M. Gilmore.



Exposed Log Structure

In keeping with the Park Service's preference for exposed logs, the interior rotunda is supported with exposed log columns, beams, bracing, rafters, and purlins of Western Yellow Pine.¹² The log rafters extend to the exterior, supporting the eaves of the pyramidal roof.



The central pyramidal space is supported by small diameter logs.

The log member sizes are as follows:

- Octagon: Eight corner columns are approximately 12" diameter logs.
- Octagon: Tension ring logs are 6" diameter logs

¹² See Wood Test Results in Appendix.



The gable wing roofs are supported by king-post trusses with log tie-beams.

- Wings: King-post truss members are 6" diameter logs.

Log king-post trusses with log tie-beams help support the gable-wing roofs; these are supplemented with cut timber rafters (2 x 10's at 24" on center¹³) that extend two feet beyond the wall line.

¹³ The member sizes are nominal; the actual dimensions are 9½" x 1-5/8".



Lake General Store
Historic Structure Report



The typical gable end is decorated with a log entablature accented with bracing and log ends.

The exterior log treatment – beyond the exposed rafters of the central roof – is relegated to the gable ends of the wings. The expression is greater than the structural need (to support the rafters of the extended rake), and acts as a tie-in to the interior vocabulary, while providing a modicum of rusticity to the building. This use of decorative logs on the exterior of otherwise standard wood-frame construction is typical throughout the Park.¹⁴

¹⁴ See discussion of design provenance above.



Lake General Store Historic Structure Report

Exterior Wall Treatment

The exterior walls of the original portion of the building are finished with painted wood shingles made of Redwood. The shingles butt into vertical trim boards at the exterior and interior corners; they are not detailed or used in the plastic expression of the Shingle Style. Where the original treatment remains, the shingles rest on a wooden watertable capped with an extension that helps direct water away from the foundation. This treatment and detailing is consistent with c.1920s residential construction. The shingles are 2¼" to 9" wide, 16" long, and 3/16"-1/4" thick at the butt. The exposure ranges from 4½" to 5". The shingles and trim were originally painted a dark brown with a solid, opaque oil-based coating.



The wall shingles butt into corner boards at both inside and outside corners. The wooden watertable, with cap, is a typical base treatment.

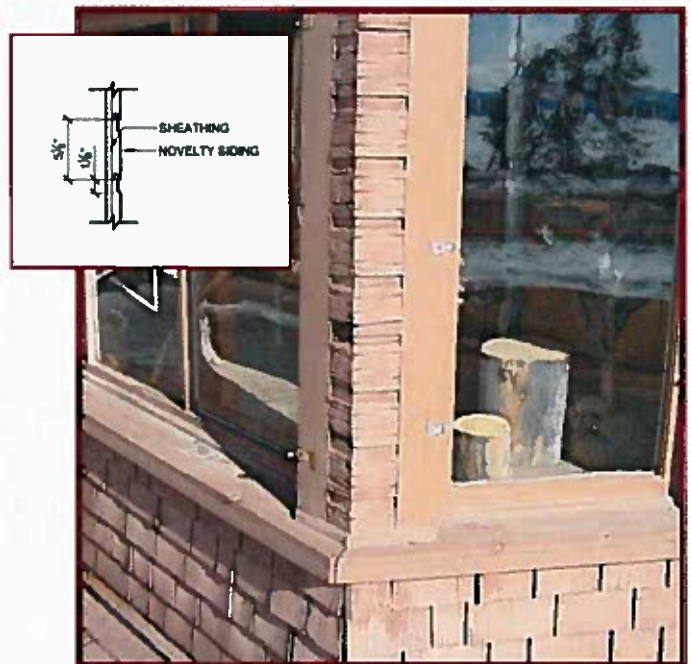


1923 image of store shows the smooth shingled wall finishes. From 1923 Haynes Guide, courtesy of Bob Goss (private collection).

The use of shingles contributes to a more rustic expression than smooth clapboarding would; this texture is visible upon approaching the building. Where the north shed was added and clad with clapboarding, it stands out as an addition and shows the more refined nature of clapboarding.

Image to Right: Bay window with novelty siding.

Variation of this expression occurs at the two bay windows, where the upper walls are finished with a novelty siding commonly used in the 1920's. This is also a more relaxed treatment than clapboarding.





Lake General Store Historic Structure Report

Front Entry

The entry to the building is located at the southeast facet of the octagon where two wings meet and help frame a gathering space for the visitors. This location also provides the best view of Lake Yellowstone, a major feature of the Park. Originally this area had a three-sided concrete deck with continuous steps on all three facets. Cars parked immediately adjacent to this deck; they now park to the west and north of the building in paved lots.¹⁵

The public access to the building is through a pair of glazed doors at this wall facet, flanked on either side by the window bays which act as shop windows advertising the wares of the store.



The concrete deck configuration, as seen in this 1923 photograph, is similar to the current configuration. This photograph from the 1923 Haynes Guide is courtesy of Bob Goss.



This 1950's photograph shows how the parking occurred right at the entry, where cars pulled off what was then the main road to the Lake Hotel. Photograph courtesy of the National Park Service, Yellowstone National Park, YELL 30089.



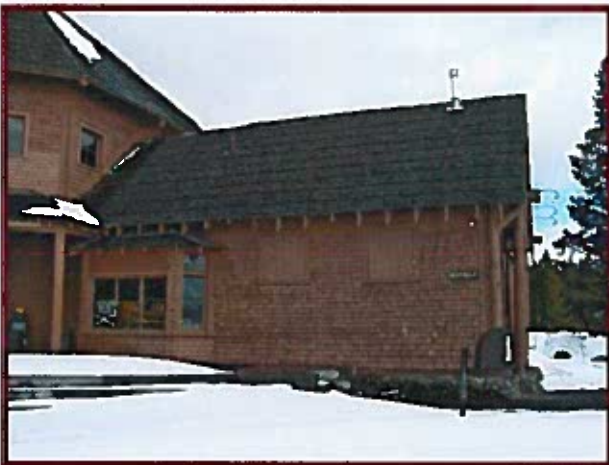
This current photograph shows the similar concrete deck configuration at the entry. The photograph at the lower left shows the accessible ramp which has been added and does not contribute to the historic significance of the building.



Lake General Store Historic Structure Report

Windows

The standard windows in the building are fixed wood sash with four divided lites. On the side walls of the four main wings, the windows are single punched openings, whereas the gable end walls are each accented with a collection of three windows divided by supportive mullions. At the north and south gable ends, fenestration modifications were made to accommodate the central door and chimney; these components are instead each flanked by single windows. The raised, clerestory portion of the central rotunda has windows at each wall facet. Where engaged by a gabled wing, the upper rotunda wall has a single window on each side of the wing's ridge. Where exposed as a two-story exterior wall – as at all but the northwest facet with the office addition – the first floor wall has a band of three windows and the second floor wall has a joined pair of windows. Where the office joins the building, the second floor wall completes the sequence of a joined pair of windows.



The side of the single-story wings have punched openings (shown boarded in this April 2007 photographs). The bay windows have transoms and wide muntins.

The three-sided bays have a series of tall fixed single-pane wood sash below divided lite transoms. The muntins of the transoms are wider than those of the other windows, implying that they either weren't constructed at the same time or that they were fabricated by a different millworker.



The ends of the wings have a tripartite set of fixed windows.



The central octagonal space has fixed windows in groups of two and three (shown boarded at the first floor) on the facets between the wings.

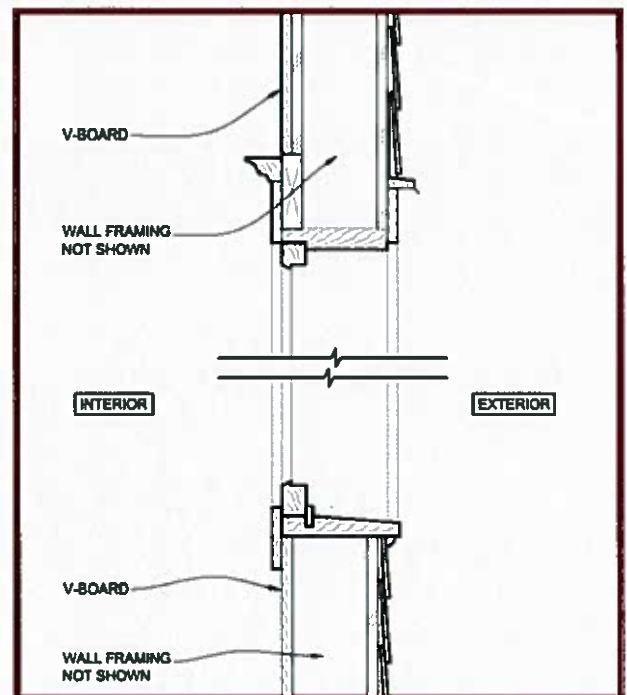


Typical exterior window treatment. Many of the quarter-rounds below the sill have been replaced. Typical winter treatment involves boarding the windows.

The exterior treatment of the windows is simple, with a stock 4½" wide wood casing with butt joints. The paint analysis indicates they were originally painted a dark brown, in contrast to the current color which is deemed a light brown.¹⁶ The wooden sill extends across the opening to align with the outer edges of the trim. The head has a drip cap similar to those at the doors; where more than one window is grouped together, the head, cap, and quarter-round trim extend across the full width of the opening. The deep sills are indicative of the recessed location of the window sash within the wall framing.



The windows are recessed deeply into the opening.



Typical cross-section at window opening.

¹⁶ See Paint Analysis in Appendix.



Lake General Store Historic Structure Report

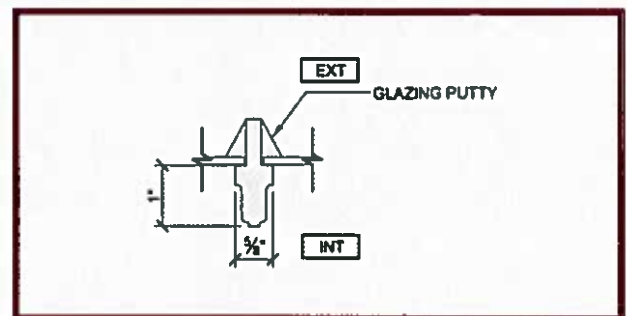
While the bay windows are detailed differently than the rest of the windows – in the wall treatment, the insertion of transoms, the muntin width – early photographs indicate that they were installed when the wings were first constructed. Paint analysis reveals that all the window sash were originally a light gray.



Current image of the entry façade shows the current color scheme of light brown wall treatment and trim, and light brown sash.



1923 image of store shows the very light grey (nearly white) window sash of the early period of the building. From 1923 Haynes Guide, courtesy of Bob Goss (private collection).



Typical muntin bar of the standard window at Lake Store. By contrast, the muntins of the bay windows are about 1-1/4" wide.



Lake General Store Historic Structure Report

Building Base

The base of the building is comprised of a stone veneer on the public faces of the building; it is of concrete on the rear facades. The wall shingles meet the base with a wood watertable intended to direct water away from the building. The materials were gathered locally in the Park: the stone is of three types of igneous rocks and the mortar is composed with local Obsidian aggregate. The stone veneer was installed by Hamilton soon after construction was completed. The stones are igneous rocks taken from the Park: obsidian, rhyolite, and pumice.

The stone and mortar of the large chimney are the same as that of the base.



The stone infill acts as a robust base to the building.

The mortar itself contributes greatly to the character of the building, as it is composed primarily of local Obsidian aggregate.¹⁷ The aggregate is a key visual feature of the mortar. The wood watertable is extant only where the stone veneer exists. Where the foundation has been replaced with concrete, the watertable has been removed.¹⁸ The watertable serves the standard function of directing the water away from the building and providing a smooth and expected transition from the shingle wall plane to the rough stone base. The watertable is of a standard detail used from the early 1900's to the present day.



Typical stone infill between the piers at the base of the public facades of the building.

¹⁷ See Mortar Analysis in Appendix.

¹⁸ See Construction History for further discussion of relationship of watertable to concrete foundation.



Interior Wall Treatments

The interior walls are finished with painted V-groove board and beadboard, installed horizontally spanning across the studs. Such an installation is common for the 1920's. The walls and ceiling were originally finished with a white paint.¹⁹ This was considered a sanitary treatment and one that would reflect the natural light.

The lack of pattern for location of board type is not reflective of a construction history of the building, yet more clearly indicates that Hamilton and his builder, Rasmussen, used whatever material was available at the time.²⁰ Different wood types were used with the same profiles as well: Western Yellow Pine in the public spaces, and Douglas Fir in the office.²¹

The V-groove board was installed on the walls of the rotunda, the east wing, south wing, and west wing, with the exceptions noted below, where the wall is finished with beadboard:

1. The top foot of the east wall of the south wing.
2. The walls inside the office wing, including the window patch.
3. The gable wall of the rotunda, above the west wing.
4. Upper southeast rotunda wall (above beam height).
5. Upper south rotunda wall (above beam height).
6. Upper southwest rotunda wall (above beam height).

The V-groove board was installed on the sloped ceilings of the rotunda, east wing, south wing, and west wing, with the exceptions noted below, where the ceiling is finished with beadboard:

1. The east slope of the south wing roof.
2. The upper half of the west slope of the south wing roof.
3. The flat ceiling in the office wing.



The V-groove board image on the left is of the prominent interior finish throughout the building. The narrower beadboard image on the right is of the interior finish that appears to have been used when the supply of V-groove board was exhausted.



The east wall of the south wing is indicative of the different wall treatments throughout the building. The ceiling is finished with beadboard and the walls are finished is V-groove board.

¹⁹ See Paint Analysis in Appendix.

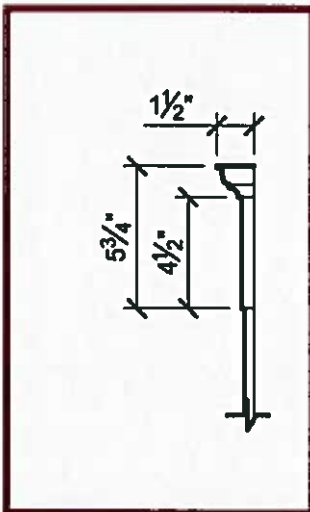
²⁰ This is supported by oral history with Ellie and Pat Povah. Interview by Lesley M. Gilmore, July 27, 2007.

²¹ See Wood Test Results in Appendix.

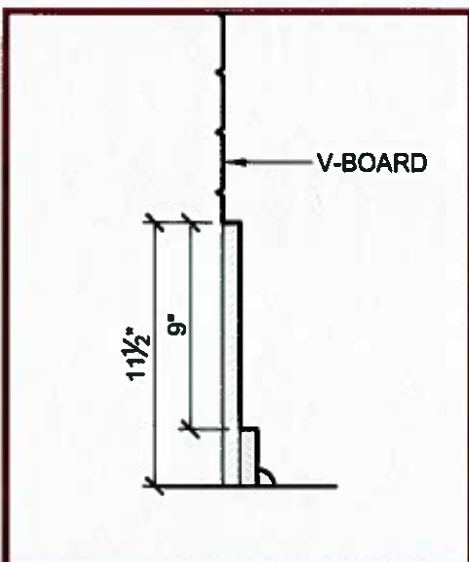


Lake General Store Historic Structure Report

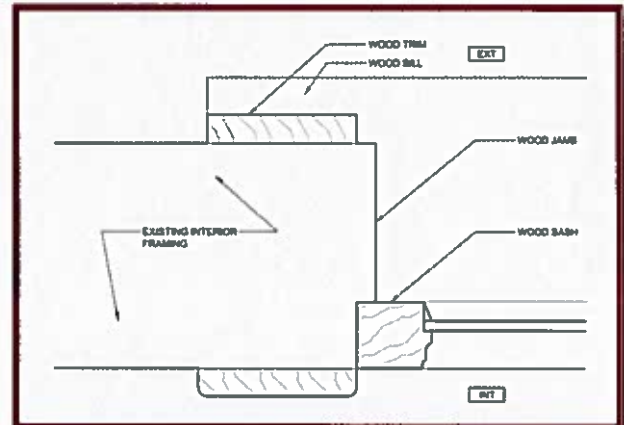
The walls are trimmed simply, with identical door and window casings, a quarter-round to conceal joints between wall facets, a baseboard in the west wing, and a quarter-round shoe elsewhere. The windows and doors are trimmed with a 4 1/4" eased edge casing and capped with an elaborate ogee-profiled cap that extends 1 1/2' from the wall finish.



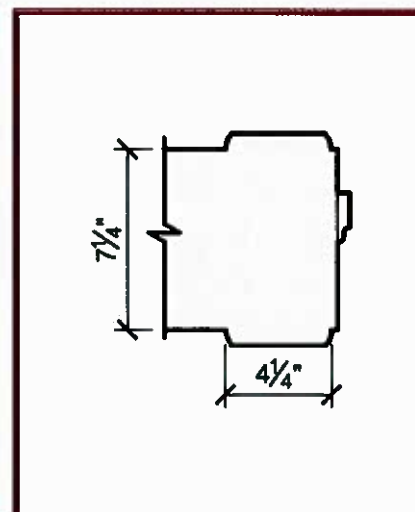
Typical window and door head.



Baseboard in the west wing.



Typical window casing at jamb.



Typical door casing at jamb.



Lake General Store Historic Structure Report

Flooring

The flooring in all the rooms, except for the west wing, is of hard maple. The 2 1/4" tongue-and-groove boards are a full 3/4" thick and of lengths (10' to 12') typical of the 1920's installations. Maple was a practical material for floors which would receive a lot of traffic and wear, such as in stores and kitchens. It is indicative of its time period and use. This was not a wood that would have been found locally. The oak flooring in the west grocery wing was installed c. 1995 when the foundation of the wing was replaced.²² The maple in the service and preparation areas of the Snack Area in the east wing has been covered with vinyl tile.



Looking southwest toward the west wing, where the maple was replaced with plain-sawn oak flooring, c.1995.



The maple flooring is throughout the store, except where replace in the west wing.

Northwest Fixture Company Fittings

The Snack Area was fitted out with a soda fountain c.1938 that was manufactured by the Northwest Fixture Company of Billings, Montana. The contributing features of the soda fountain are its essential components:

1. Countertop with footrest.
2. Stools.
3. Pine paneling with alternating board widths.
4. Built-in refrigerator cabinets.
5. Pine cased backboard above the north wall cabinets.



Looking northeast towards the soda fountain in the east wing.



The Chandeliers



Cast plaster ornament lends a whimsical character to the canopy which supports the globe (not present in this image).

The three chandeliers in the building are not believed to be original to the building – they do not appear in early interior photographs. They were probably installed in the late 1950s, when more reliable commercial electrical power was delivered to various sites within the Park. In addition, the chandeliers are generally of the Art Nouveau style, whereas the building is a simplified rustic shingle style building. However, the oral history of the chandeliers at these locations in the building has developed its own association with the history and significance of the building.

There are two identical chandeliers – one in the west wing and one in the south wing. Both are located close to the central rotunda where the larger, centrally located chandelier is hung. Each chandelier has an eight-sided open-spaced bowl with eight mica shades set in bronze-painted frames. The larger chandelier's upper globe accented further with a clump of leaves at the center of the glass. Each smaller chandelier has leaves at the frame piece between the panes of mica, above a canopy of



Above: Side chandelier, with acorn globe.



Lake General Store Historic Structure Report

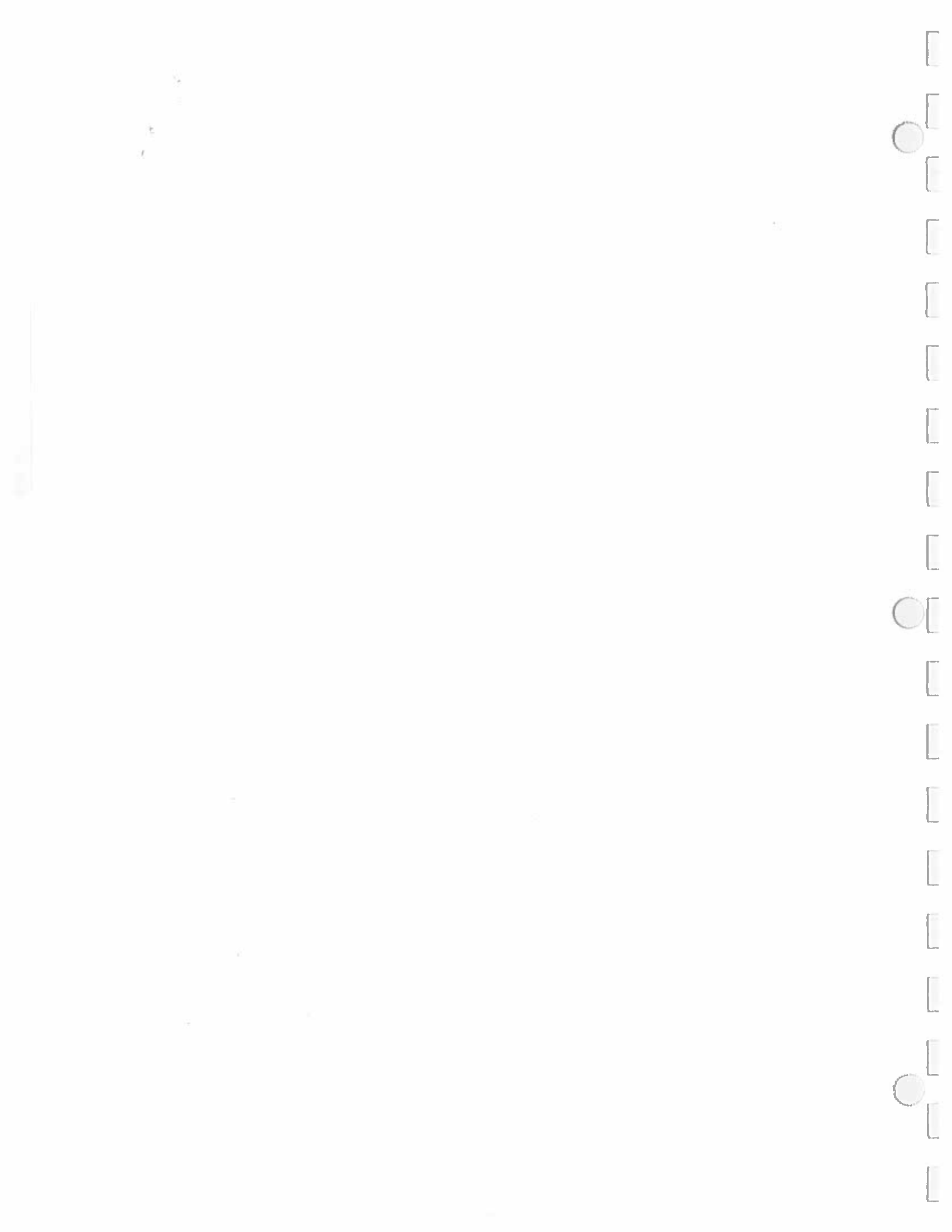
squirrels mounted on an acorn. The glass globe is the acorn.

The central chandelier has an additional lower eight-sided bowl suspended from the upper bowl, with cast owls forming the divisions between the panes of mica. The base of this piece is identical to that of the side chandeliers, with squirrels atop the acorn and globe.

The squirrels, owls, and leaves are of a cast plaster that is painted to blend with the presumably bronze or copper framework. All fixtures are suspended from the ceiling with metal chains.



The central chandelier has an additional lower bowl, with cast plaster owls.





VI. CONDITION ASSESSMENT - Exterior

General

The exterior condition assessment is presented from the base to the top of the building. For more in-depth descriptions of the components of the building, see previous sections on **Construction History** and **Character-Defining Features**. Where wood is identified, it is based upon wood type testing; these results are in the Appendix.

Building Base

Description: The base of the building is faced with stone or concrete, depending upon the location. This facing conceals the rim joists and log support beams that bear on regularly spaced concrete piers. The foundation itself is discussed in the Structural Assessment. Currently, the wall sections that are faced with stone are as follows:

1. All exposed walls of the east wing.
2. The east and south walls of the south wing.
3. The east wall of the loading dock.



The stone facing at the east wing, 2007.

The remainder of the wall bases are faced with cast-in-place concrete. At the narrow ends of each wing, two wood columns are supported by concrete piers that have been faced with the

same stone, although these pieces are typically larger than the pebbles used to face the foundation. At the north end, the loading dock supports the wood columns.

The stone is uncoursed rubble in a combination of various volcanic igneous rocks taken from Yellowstone National Park: obsidian, rhyolite, and pumice. Rhyolite is a silica-rich volcanic rock and obsidian is a black silicon dioxide-rich volcanic rock; both are extremely hard. Pumice is also a volcanic rock which is extremely porous. The joints are pointed with a hard and dense cement-based mortar with a large concentration of local obsidian sand. See Mortar Analysis in the Appendix.



The concrete facing at the base of the north wing, 2007.

The concrete base has settled away from the building and stone has fallen from rim joist.

Condition: The concrete facing is generally in good condition; there are a few shrinkage cracks. However, due to the heavy snow load at the base of the west side of the building, some of the concrete is spalling (from the freeze-thaw cycles of the wet snow).



The concrete facing at the south face of the west wing, 2007. Concrete is spalling to the left of the vent.

The concrete bases supporting the east exterior columns have settled away from the building. This has reduced the support for the wood columns, and has caused the stone facing to shift. Isolated units of stone have fallen from the building, typically where shifted by concrete movement.

Recommendations: If the concrete and stone are to remain, the isolated areas of damage should be repaired. The concrete should be patched, the wood columns resecured, and the stone readhered to the substrate. See Structural Assessment for recommendations to remove this facing system.

Watertable

Description: The perimeter of the building appears to have originally been finished with a 1"x8" (nominal) wood watertable with a cap. This watertable remains only where the stone facing exists today. The wood is of White Pine.

Condition: Where the watertable remains, it is generally in good condition. The protective paint coating is typically worn – often to bare wood – warranting preparation and repainting of the watertable and cap. Along the east end of the east wing, the cap has split with the grain and is falling away from the wall.



Inside corner where the west wing meets the north. Original watertable and stone facing at the left; concrete facing without watertable on the right.



East end of east wing, 2007. Watertable is split.

Recommendations: The watertable should be properly flashed to protect the wood. The areas of worn paint should be prepared and repainted.



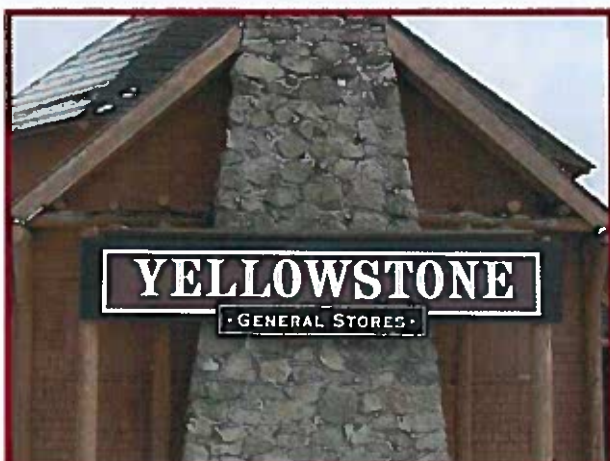
Wood Columns & Beams

Description: Exterior wood log columns of Western Yellow Pine mark the narrow end of each wing. They are braced to support a log beam upon which log ends rest. This is a decorative, not structural, treatment to the gable ends. The treatment is more elaborate at the chimney end, to circumvent the chimney and to support signage.



West end of west wing, with log columns supporting and entablature and log ends.

Condition: The logs are generally in good condition. At the bearing points – as noted above – some of the columns has shifted off the concrete base, and all have wicked up moisture. The log beams at the chimney end are rotting from excessive moisture, probably coming with the prevailing winds off the lake.



The log beams at the chimney end have deteriorated from moisture penetration.

Recommendations: The bases of the log columns should be treated with a clear penetrating water repellent or liquid epoxy consolidant and repainted. The rotted beams flanking the exterior chimney should be replaced.

Wall Shingles

Description: The majority of the walls are clad with Redwood shingles that are 2¼" to 9" wide, 16" long, and 3/16"-1/4" thick at the butt. The exposure ranges from 4½" to 5". The shingles butt into corner boards at the outside and inside corners of the building.



South elevation of west wing, 2007. The shingles have been replaced from the midpoint of the windows down to the base of the building.

Condition: Due to exposure to heavy snows, typical weathering, UV-exposure, and wind, many of the shingles are heavily worn and warped, although most currently have an adequate protective layer of paint. Shingles located towards the base of the walls, below windowsill, and adjacent to the roofs are the most vulnerable to water penetration. Several large wall areas have had all the shingles replaced, whereas shingles in other large sections warrant replacement. Many of the newer shingles are too wide, which promotes warping. At least 3/8 of the shingles are replacements or need to be replaced.



Lake General Store
Historic Structure Report



The shingles at the south wall of the east wing are heavily worn and loosening.

Recommendations: Replace the thin and warped shingles. Refasten or replace the shingles that have slipped. New shingles shouldn't be wider than 6", in order to prevent warping. If wall surfaces are replaced for structural reasons, integral flashing should be installed at the windowsills.



Close-up of new shingles at south wall of west wing. The wider shingles are warping.



The shingles on the walls beneath the windows are typically deteriorated, if they haven't been replaced. The windowsills are not flashed.



Novelty Siding

Description: The window bays have shingles at the wall surfaces below the windows. The wall surfaces between the windows are clad with wood novelty siding.



The degradation of the novelty siding at the east window bay is typical for both bays.

Condition: Both window bays are subject to strong UV-rays from the sun, leading to degradation of the lignin of the wood. The miter joints exacerbate this degradation. Subsequent cracks and open joints allow moisture to penetrate.

Recommendations: The novelty siding should be replaced with matching wood novelty siding.

Wall Clapboards

Description: The c.1951 shed at the north end of the building on the loading dock is finished with wood clapboards that extend the full length of each wall section. The clapboards have a 4" exposure, 1/2" butt thickness, and are installed over 3/4" thick horizontal board sheathing. The clapboards butt into corner boards.



The c.1951 shed at north loading dock is finished with wood clapboards.



North end of shed.



Condition: Several clapboards on each elevation are split excessively. A number of the boards have taken in moisture at the end, where they butt to the trim and the joint has opened. The double-nailing of many of the clapboards – quite a few of which have been replaced – is exacerbating the splitting of the wood.

Recommendations: Replace the clapboards that have split along their length. Treat the board ends with water repellent preservative and seal the joint between the trim and the board ends.

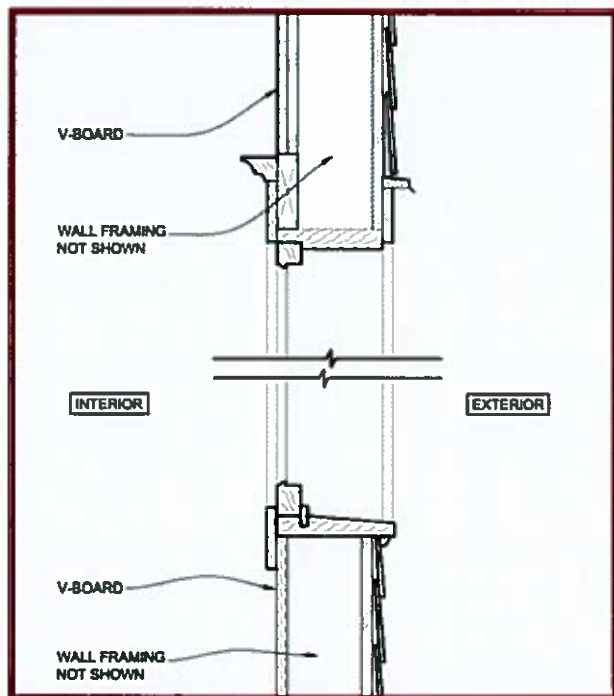
Trim

Description: The exterior corner boards and window trim is of White Pine.¹ The typical dimension is $\frac{3}{4}$ " x $4\frac{1}{2}$ ". The window and door heads have drip caps; several of them have flashing above the caps. The windows have a

quarter-round trim piece along the bottom of the windowsill.

Condition: Most of the trim is in good condition, although the more vulnerable dripcaps which aren't flashed are typically worn to bare wood. Because the windowsills aren't flashed, the quarter-round trim below has often rotted and been replaced. The more recent replacements have been of finger-jointed pine which isn't holding up well (the joints are opening up and allowing water penetration into the wood and the wall beyond). As seen in the prior discussion of the shed clapboarding, the corner trim there has been subject to what appears to have been impact damage. Some of the paint is worn to expose bare wood.

Recommendations: If feasible, the window and door heads and windowsills should be flashed. The finger-jointed trim should be replaced with solid wood trim. All surfaces worn of paint should be prepared and repainted. See below for further discussion of windowsills.



Typical window trim.



The southwest facet window opening, where the finger-jointed quarter-round trim is splitting off, exposing the wall to water penetration.

¹ See Wood Testing in Appendix for test results.



Windows

Description: The windows throughout the building are fixed, as they appear to have been originally. The sash typically have four panes set in thin muntins; some of the sash are single units – others are grouped in a pair or trio with other like windows. The sash are of Western Yellow Pine.²



Southwest facet of building showing single, paired, and windows in triplet.

Condition: The first floor windows are covered with wood storm units in the winter, for protection. The more exposed clerestory windows withstand the most wind and snow conditions. Often the snow is piled high up against the clerestory windows, melting water onto the wood sills during warming cycles. The putty on the sash is typically worn, as is the paint on the sash, jamb, and sill. Yet the condition of the sash joints is unknown, since the windows aren't operable.

Several of the windowsills are degraded to bare wood and lignin. The windowsills of the clerestory were not typically accessible for inspection.



Windowsill at clerestory above south wing, showing typical sill, sash, and putty deterioration.

Considerations: Installation of storm windows is often a strong consideration in older buildings with single-pane windows. Exterior storm windows can provide protection for the primary window and can increase the energy efficiency of the window. The decreased U-value³ of the window is weighed against the potential for damage caused by condensation that builds up in the cavity between the two windows. If storm windows are installed – whether on the interior or the exterior – proper venting of the probable condensation is critical. In this instance, there is sufficient room for an exterior storm window, and the window would benefit from protection from the elements. However, the disadvantages outweigh the benefits, as follows:

1. The appearance of the building would alter; the window jambs wouldn't read as deeply as they currently do.
2. The added U-value would be minimal.
3. The first floor windows are boarded from the outside in the winter, providing protection and decreased U-value.
4. The building is not occupied in the winter.

² See Wood Test Results in Appendix.

³ A lower U-value reflects lesser heat loss.



Recommendations: Strip the windows, carefully remove the original glass, apply water repellent preservative, prepare and repaint, refasten any racked joints, and reglaze/putty the windows with the original glass. Strip the windowsills and jamb, apply water repellent preservative, then prepare and repaint. Each window should be installed in its original location.

Doors

Description: There are four exterior doors to Lake Store: the pair of glazed doors at the main entry, a single exit door at the west side of the west wing, a combination swing and sliding door at the north end of the storage wing, and a single entry door to the storage shed on the loading dock.



The pair of main entry doors are stile-and-rail wood doors that are 3'-wide, 6'-9" tall, and 1 3/4" thick. The left leaf is fitted with flush bolts at top and bottom, to secure it when the right leaf is opened. Two metal bars prevent impact with the large pane of glass. A bronze mortise entry lockset with Russwin deadbolt secures the doors. Norton door closers have been added to

each leaf. The glazed in secured with wood stops at the outside and inside face of the doors.



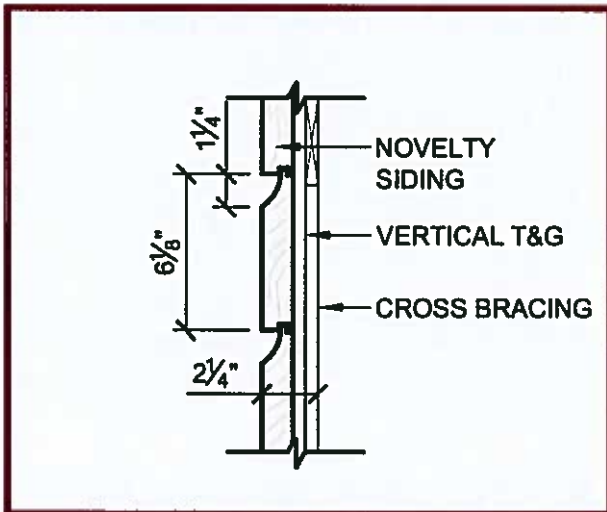
Rear door at loading dock, with exterior screen door.

The exit door at the south wing is a wood stile and rail door with a mortise lockset, Russwin deadbolt, Russwin door closer, and hung on three ball-bearing ball-tip steel hinges. This 7'-high door has two flat panels in the lower portion and four divided lites above.

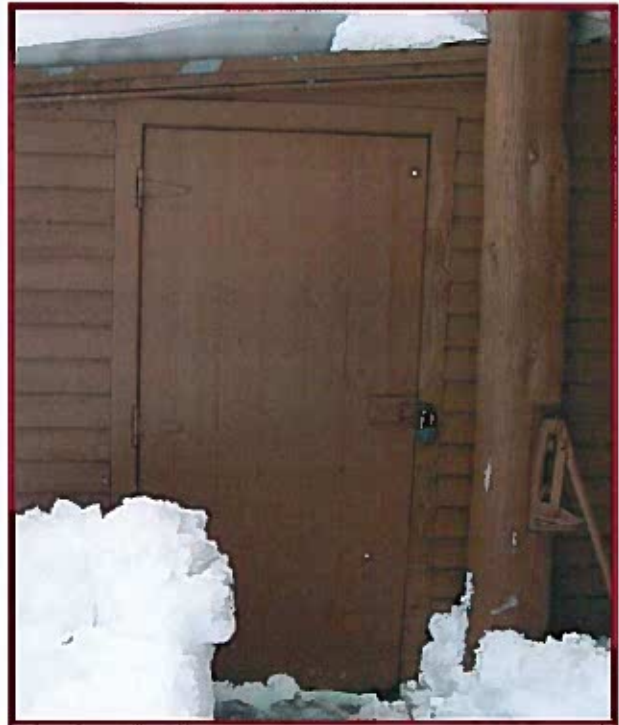


The north door to storage room is comprised of two doors:

1. 5'-10½" wide x 7'-tall three-ply wood door that slides on two sets of top wheels in a tube track that's surface-mounted above the door. It is secured with a hasp and Master key lock and pulled with a stamped steel pull handle.
2. A 5' x 7' screen door is mounted at the exterior face of the sliding door. The door is made of 2 x 4's with both fine and coarser screening. A surface-mounted deadbolt is keyed on the exterior.



The exterior of the sliding door to the storage room is faced with novelty siding.



Wood door to the storage shed.

The rear door to the storage shed is of wood planks with wood bracing supports. It is secured with a hasp and Master key lock.



Lake General Store
Historic Structure Report



Exit door at west wall of south wing.

Condition: The entry doors are in good condition. The bottom rails are scuffed from wear, and the finish at the latching stile is abraded. The bottom of the latch stile of the left leaf has been resecured with three screws, and the rail has been patched. The wood threshold is heavily worn and approximately 1½" above the finished floor.



The bottom rail of the entry doors are scuffed from toe kicks, and the joint has been refastened.

The exit door and threshold at the south wing is worn at the edges from use. The lower veneer panel is wrinkled from expansion and contraction, but is stable. The paint at the base of the trim is worn, as expected for trim subject to the snow exposure.

The doors at the shed and storage room are in good condition.

Recommendations: Prepare and refinish all the doors and thresholds. Provide kickplates at both sides of each door. Provide smooth transition from the flooring to the thresholds that are higher than the ¾" maximum allowable.



Exposed Rafter Tails

Description: The 2" x 10" rafters of the roof framing for the wings extend beyond the wall by approximately two feet. They are cut parallel to the wall. The rafters have consistently been painted with the same finish as the exterior walls and trim.⁴

Condition: Most of the rafter tails are in good condition, yet the ends of most have a worn finish due to the dripping of snow and rain from the ends of the roofing. Six of the rafter tails at the north face of the west wing and one rafter tail at the northeast facet of the office are split. The latter one is split the full length of the tail to the wall plane. The bottom of three rafter tails at the south face of the east wing have been cut back horizontally.

Recommendations: The ends of the rafter tails should be treated with a water repellent preservative, prepared, and repainted. The split tails should be resecured in place (screws from the closest edge would be effective.) Sheet metal drip flashing should be installed along the lower edge of the roofing to protect the end grain of the fascia boards.



Exposed rafter tails at the north side of the west wing, where some of the tails are split.

⁴ See Paint Analysis in the Appendix.



Fascias

Description: The gable ends of the building have exposed rafters that act as fascia boards, of 2 x 10 nominal dimension. The vault addition has a shed roof with exposed rafters, and the shed addition has a 1 x 4 wood fascia at the three exposed sides. This fascia is protected with sheet metal edge flashing at the east and west sides, but not on the north face.



The vault's shed roof framing is supported on a beam, the ends of which are rotting. The fascia of the office wing is seen in the upper right.

Condition: The paint of the fascia boards is typically worn, often to bare wood. The metal edging at the shed roof is bent and torn, exposing the fascias to water penetration. The north fascia of the shed is unprotected by flashing and has rotted. The end grain at the end of the support beam at the concrete vault has rotted from exposure to water.



The end grain of the support beam at the concrete vault has rotted from snow and water.



The fascia at the north wall of the shed has been heavily penetrated with water and has rotted.

Recommendations: The fascia boards should be protected from water penetration by the installation of sheet metal drips. The wood should be treated with water repellent preservative, then prepared and repainted. The wood fascias at the rear shed should be replaced.

Soffits

Description: The soffits are open, with exposed wood decking (tongue-and-groove) as the finish. They are painted to blend with the brown color of the building exterior. Black netting has been installed under the soffits – from the wall



to the outside fascia/rafter board – to prevent mud swallows from nesting there.⁵

Condition: The soffit boards are in good condition, except at the entry roof. Due to roof's vulnerable location under the octagonal roof, between the slopes of both wings, and the subsequent snowmelt – and the deteriorated condition of the roof shingles – some of the decking at this roof has rotted, primarily at the hips. The paint of other decking/soffit boards here is wet and peeling from the moisture.

Some of the netting has loosened from the building.



Black netting blocking access to the soffit.

Recommendations: The soffit/decking boards that are rotted at the front entry should be replaced (after the roofing is replaced). The wet boards there should be sanded and repainted. The netting should be refastened to the building and replaced where necessary.

⁵ Pat Povah, interview by Lesley M. Gilmore, July 27, 2007. Mud swallows purportedly carry lice.

Roofing

Description: The roof is clad with Redwood shingles that are 16" long, 3" to 12" wide, and 3/8" to 1/2" thick at the butt the typical exposure is 4½". The shingles are doubled up every sixth course, and covered at the ridges and hips with wood shingles.

The roof of the rear shed is a flat roof with a membrane and edge flashing at the sides.

Condition: The roof shingles are excessively worn. Some locations are more effected by snow load and melt than others. The portions of the wing roofs directly underneath the edges of the pyramidal roof are particularly damaged. The water runs off the upper roof and bores holes in straight lines down the shingles of the lower roof. The lower shingles are thin, missing, string, and slippery. The lower roofs – especially at the north and west slopes – are subject to deep snow loads and drifts in the winter season. There are gaps as large as 1" between the ridge shingles of the lower roofs, contributing to water leaking through the ridge onto the floor about 8 feet north of the fireplace.



Typical snowload at the west and north slopes of the roofs.

At the pyramidal roof, the shingles are really rough and worn, cupping, and falling off. Moss



is growing at the rake edge of the shingles at the north side of the west wing.

The shingles of the entry roof – which is shallower than the other roofs, and subject to run-off from the adjacent roofs – are worn to nothing, exposing the sheathing in places. This area is also subject to strong UV rays from the southern exposure.



The lower roofs receive run-off from the upper roof.

Recommendations: The wood shingles should be replaced with replica shingles in the same pattern, with every sixth course doubled. The ridges and hips should be capped with wood shingles. Consideration should be given to using a fire retardant shingle in order to lessen the potential for fire. The eaves, ridges, valleys, and hips should be covered with protective membrane underlayment and cedar breather. The first will protect the sheathing and structure; the latter will allow the shingles to breathe and last longer.

The sheet metal flashing – at the valleys, chimney, vertical wall junctures, and roof penetrations – should be replaced. The roof edges – eaves and rakes – should be fitted with continuous sheet metal drip edges. Heavy gauge gutters and open-faced downspouts could be installed at the north and west elevations, to help direct water away from the building foundation. These elevations are

where the most snow accumulates (to melt) and are not viewed by most public.

Fall protection anchor points should be fastened to the structure to increase safety during roof maintenance.

Flashing

Description: The extant flashing on the building is visible at the valleys, some wall roof-wall junctures, and the chimney. Painted aluminum flashing at the entry roof is slid up behind the wall shingles. The valleys and chimney are flashed with galvanized sheet steel.

Condition: The chimney's base flashing curls out and isn't counter flashed. At the juncture of the entry roof to the wall, the nails are popping out and the flashing is lifting up.⁶ The valley flashing, while rusting, is in good condition.

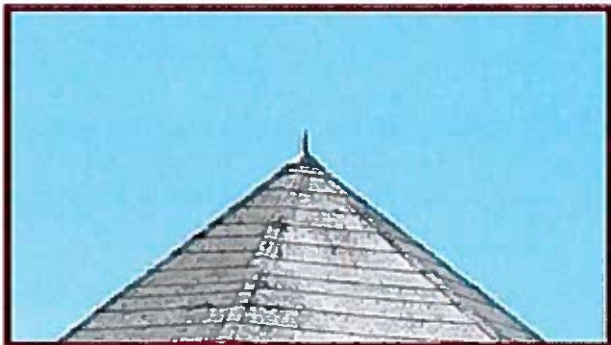


The painted aluminum flashing covering the joint between the entry roof and the wall.

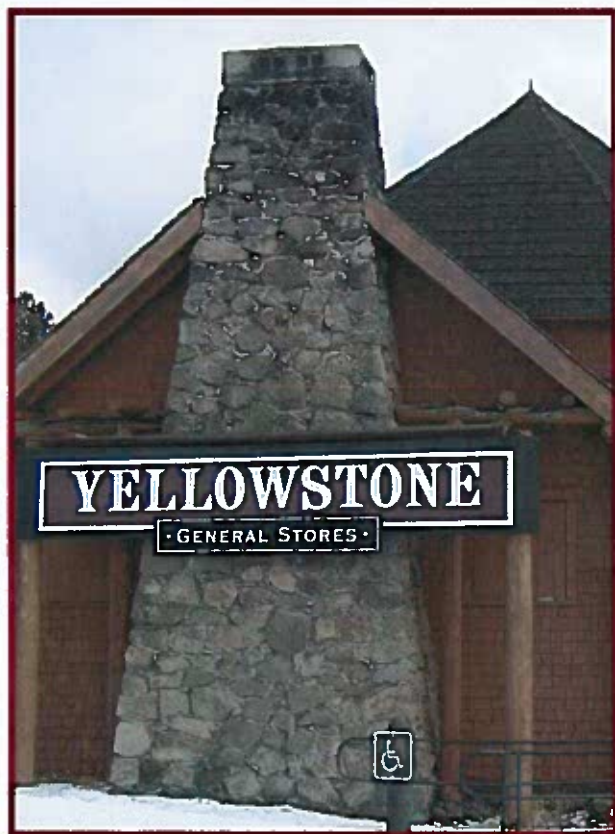
⁶ The aluminum flashing is probably a replacement flashing installed when the entry roof was constructed c. 1990 and not indicative of the galvanized steel used originally on the building.



Recommendations: When the roofing is replaced, replace all the flashing with a heavy gauge galvanized sheet steel. See Roofing above for recommendation of drip edges, and gutters and downspouts at the rear of the building. Reinstall the original sheet metal finial at the top of the pyramidal roof.



A sheet metal finial protects the top of the pyramidal roof.



The stone chimney has a powerful presence at the end of the south wing.

Chimney

Description: The stone chimney is located at the south wall of the west wing where it contains a spacious wood fireplace. It is constructed of the same volcanic rubble stone types used around the foundation, yet the chimney stone units are considerably larger. The cap is topped with a poured concrete top (probably installed after the 1958 fire). The top of the chimney is three feet above the ridge.

Condition: The stone is in good condition, although darkened at the top from soot. Some of the stone is stained from overspray during painting of the wall shingles. The mortar joints are generally good and tight, with isolated locations of joints where some mortar is missing. There are some hairline cracks in the concrete cap. The condition of the flue is not known.



Some of the chimney stone has been overpainted.



Lake General Store Historic Structure Report

Recommendations: The open mortar joints should be repointed, and the stone cleaned of soot and paint. If the fireplace is to be made operable – gas operation would be recommended over wood burning – the flues should be examined and relined as required.



The stone chimney, as visible from the roof of the south wing.



VII. CONDITION ASSESSMENT - Interior

General

The interior condition assessment is presented from the base to the top of the building. For more in-depth descriptions of the components of the building, see previous sections on **Construction History** and **Character-Defining Features**. Where wood is identified, it is based upon wood type testing; these results are in the Appendix.

Flooring

Description: The majority of the rooms have 2¼" tongue-and-groove maple flooring. The west wing has plain sawn oak flooring and the wood flooring in the Snack Area and adjacent Preparation Area has been covered with vinyl tile. The wood is laid on felt paper over 6"-7" wide diagonally laid subflooring.



The flooring along the south wall of the Snack Area has buckled 2-1/2".

Condition: The maple flooring is worn, buckled in a few areas, and - because the boards have expanded and contracted - the joints have widened. There are split boards in the rotunda and many boards have been face-nailed to prevent the boards from popping up. Large sections of patching - some with maple and some with plain-sawn oak - are interspersed throughout the building, but concentrated in the southern third portion of the rotunda. The largest of these at the main building entry facilitated repairs, and beam replacement, in the crawlspace below.



The large maple patch at the front entry allowed for access of materials for crawlspace repairs in the past.

Some areas have been affected by the uneven settlement of the building: three boards along the south wall of the Snack Area are buckled up 2½"; numerous areas have been patched (with maple and oak) in order to either replace damaged flooring or to access repairs in the crawlspace below.

The flooring is visibly sloped in front of the window bay in the south wing. The floor at the column is about 4" higher than the floor by the bay. Either the column north of the bay has



Lake General Store Historic Structure Report

been jacked up or the wall below the bay has settled.



Frequent face-nailing is common throughout the central rotunda area.



The floor slopes down from left to right, below the south bay window.

Recommendations: Replace the damaged sections of flooring and the mismatched patches of oak. If the crawlspace needs to be accessed for construction of new footings and beams (see *Structural Assessment*), the

height the building is lifted would be greatly reduced by removing the flooring. If possible, the flooring should be reinstalled. If not feasible, the maple flooring should be replaced in kind, in long lengths.

Walls & Ceilings

Description: The walls throughout the public spaces and the office are of horizontally oriented 5¼" V-groove board, of Western Yellow Pine and Douglas Fir respectively.¹ The ceilings of the wings are primarily of 3¼" beadboard, with some V-groove board, installed parallel to the ridges. The ceiling of the rotunda is comprised of roof decking boards.



Rotunda walls of beadboard and ceiling of roof decking.

The beadboard walls in the Snack Area are covered with pine paneling provided by the Northwest Fixture Company. This ¾" thick paneling is of 7"-wide V-groove boards; some of the boards have a center V-groove, resulting in an alternating vertical pattern. The pine paneling in the Snack Area has a warm color with varnish finish. These walls have a 5" rigid

¹ See Wood Test Results in the Appendix.



Lake General Store Historic Structure Report

black plastic base. A 4"-tall cap with black painted fillet terminates the 6'-6" tall wainscot.



Bay with painted pine panelling. Mitered cap is split.

The flat ceiling of the office is finished with beadboard; the joints are concealed with quarter-round moldings.

The stud walls in the Storage wing are not finished, exposing the exterior (horizontal board) sheathing. Press board has been installed on the west wall and west part of the south wall. The ceiling is the exposed framing, showing the ceiling joists suspended with joist hangers.



The south wall of the west wing is stained from roof run-off.

Condition: Paint is flaking and dirt is streaking at the upper walls of the west wing, due to moisture penetration from the roof. The upper west wall of the rotunda appears to have settled slightly, cracking the V-groove board.

The pine paneling is typically in good condition, yet it has been modified. The lower four feet of the south and east wall of the Snack Area has been painted white. There are two mismatched sections of boards in front of the bay. These sections are 3'-10" wide and are comprised of 7"-wide vertically oriented drop lap siding.

The top of one board in front of the window bay has a 4" split.

Two ceiling boards are the south slope of the west wing and two boards in the office have buckled, indicating probably swelling from a roof leak. There is extensive paint flaking on the office ceiling surfaces, indicating the presence of moisture.

See **Condition Assessment – Systems** for discussion of insulation.

Recommendations: After the roof is replaced, clean all the boards and cut the buckled boards to lie flat. Prepare and paint.



Lake General Store Historic Structure Report

Columns

Description: Four pairs of Western Yellow Pine columns flank each of the sidewall facets. These 12" diameter columns are unbarked and unpainted. They extend up to the lowest part of the pyramidal roof.



One of two columns which has been fitted with a replacement bottom section.

Condition: The lower two feet of each column flanking the main entry is a replacement log. This appears to relate to the sizable oak flooring patch here and the probable crawlspace repairs. See **Structural Assessment** for further information.

Recommendations: See **Structural Assessment**.

Doors

Description: Lake Store has four interior doors, 1-3/8" thick: the paneled door from the Snack Area to the Prep Area; the door into the office; the door into the storage area; and the door to the restroom. There is also a metal safe door to the vault beyond the office.

The 3/4"-thick paneled door to the Snack Area is a continuation of the paneled wall and typically fastened with a surface bolt to prevent entry.

The office door is a painted 6'-8" tall hollow core flush dutch-style door with a shelf. The door is fastened with a Weber cylinder lockset and hinged with two (per leaf) half-mortised ball-tip 5-knuckle painted steel hinges. The knobs and exterior rose are of brass. This replacement door has been neatly fitted into this opening; the stops have been cut neatly for the shelf and the jamb shows no sign of different strikeplate. This is the only interior door with a wood threshold.

The door into the storage area is original to the building. It is a 7-foot tall wood stile-and-rail door which originally had five horizontal raised panels. One of the top panels has been glazed; the bottom panel has been covered with galvanized sheet steel, and the storage room side has been covered with gypsum board framed in wood. The storage room side also has a 7" pull handle, closers, and the steel escutcheon plate from the original mortise lockset which has been removed. A flush bolt on the retail side locks the door. There is no threshold.

The door to the restroom is a 6'-3 1/2" tall wood stile-and-rail door with five flush horizontal panels. It has two steel ball-tip five-knuckle hinges and a flush bolt as a latch.

Condition: The finish on the doors and threshold has worn thin.

Recommendations: Prepare and repaint the doors and refinish the threshold at the door to the office.



Lake General Store Historic Structure Report

Windows

Description: Fixed wood windows with four divided lites are located regularly throughout the space, bringing in natural light. Clerestory windows at the top of the rotunda provide for a more diffused light. The muntins are 5/8" wide and the original cylinder glass appears to remain in most of the sash. These Western Yellow Pine windows were originally painted white.²

Condition: The accessible windows (on the first floor) appear to be in generally good condition. The tops of the bottom rails are typically worn from condensation, exposing the bare wood. The condition of the clerestory windows is unknown.



The paired windows on the south wall of the office.

Recommendations: When construction work is begun on the building – particularly if the building is lifted – the windows should be removed in order to protect them, examine them, and proceed with required repairs. The intact original glass and old growth wood should be retained.

² See Wood Test Results and Paint Analysis in the Appendix.

Window Bays

Description: There are two three-sided window bays in Lake Store – one on the south wall of the west wing, and one on the east wall of the south wing. They both flank the entry between them. A composition of tall fixed windows under transoms rests on a maple platform intended for display visible from the entry. The window system is of wood with panes of cylinder glass. The large central window has three vertical panes; the transom above has six. The panes are set into 1"-wide muntins.

As part of the Northwest Fixture Company soda fountain installation, pine paneling was installed in front of the bay in the east wing.

Condition:

East Wing Bay: The beadboard and the windows at the side walls slope down towards the interior of the building.



The beadboard and the window at the west side of the east bay slopes down toward the room.

South Wing Bay: The head of the twelve-foot span appears to have deflected, as evidenced by the shift in the finish board above. The north wall facet (of beadboard) is covered with buckling fiberboard, due to water penetration.



Lake General Store Historic Structure Report



The shifting in the beadboard above the head of the south bay might be due to deflection of the header.

Recommendations: The condition of the bays should be examined when the exterior wall construction of the building is revealed during the proposed improvements.

Trim

Description: The windows and doors are typically trimmed with a plain casing accented with a profiled cap. The trim is of Western Yellow Pine originally painted white.³ All the inside corner, and wall-to-ceiling joints, are concealed with quarter-round trim. The cap is not present at the rotunda-side of the office opening, nor at the storage-side of the storage doorway. The restroom door is not cased.

The casings are 4½" wide, typically with eased edges. The casing at the bay windows is square cut. The cap at the windows is 1¼" tall; the cap at the doors and the bay windows is 1¼" tall.



Typical interior window trim.

³ See Wood Test Results and Paint Analysis in the Appendix.

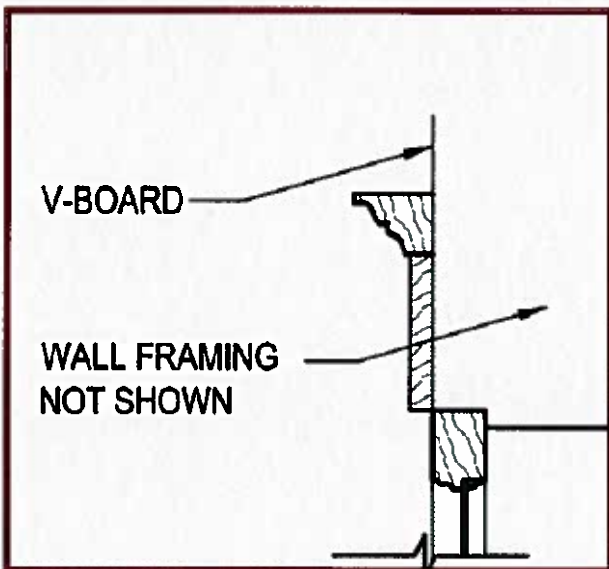


Lake General Store Historic Structure Report

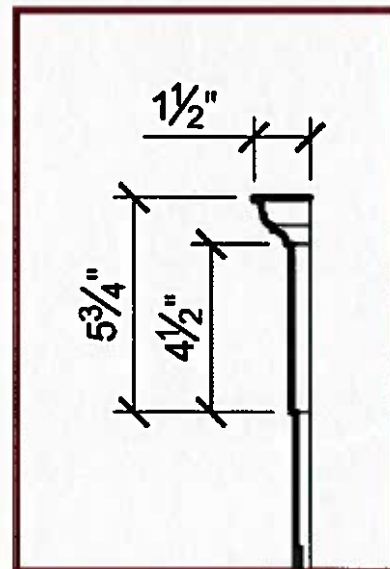
The walls in the rotunda, office, and south wing have a quarter-round shoe and don't appear to have ever had a baseboard. An 11½" baseboard finishes all walls in the west wing.

The lower portions of the walls in the east wing have been covered with pine paneling.

Condition: The trim is generally in good condition. Impact abrasion is common at the lower portions of the trim.



Window Head Trim, with 1-3/4" tall cap.



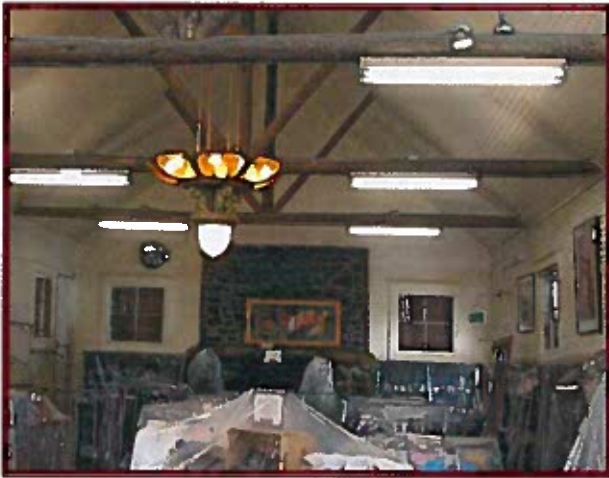
Door Head Trim

Recommendations: The trim should be prepared and repainted.



Fireplace

Description: The wood burning fireplace is centered within the south wall of the south wing. The surround is constructed of large rhyolite rubble stone. The firebox is lined with firebrick and the hearth is of smooth stone. A thick wooden slab acts as the mantel shelf. A thick wooden slab acts as the mantel shelf.



The fireplace has a thick wooden mantel shelf and a stone overmantel.

Condition: There is a crack which continues from the firebrick through the mantel. Open mortar joints in the firebox brick coincide with the crack; the brick is bulging away from the wall at the crack. The hearth has flush cracks that are stable. The hearth is level with the adjacent wood flooring.

Recommendations: The crack in the mantel should be filled with a flexible sealant colored to blend with the mortar. The dislocated firebrick should be reset and the mortar joints between the firebrick should be repointed. The soot should be cleaned from the stone and the brick.



The fireplace features the large stone used for the entire chimney mass.



The mortar joints in the firebrick are open along the lines of the crack.



Lake General Store Historic Structure Report

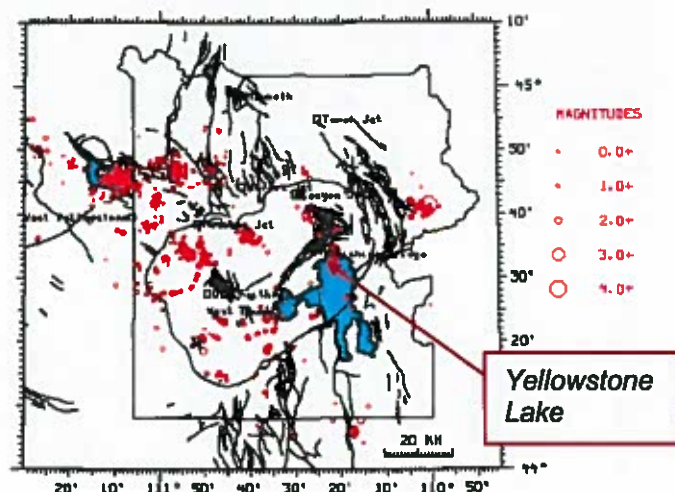
VIII. STRUCTURAL ASSESSMENT

General - Introduction

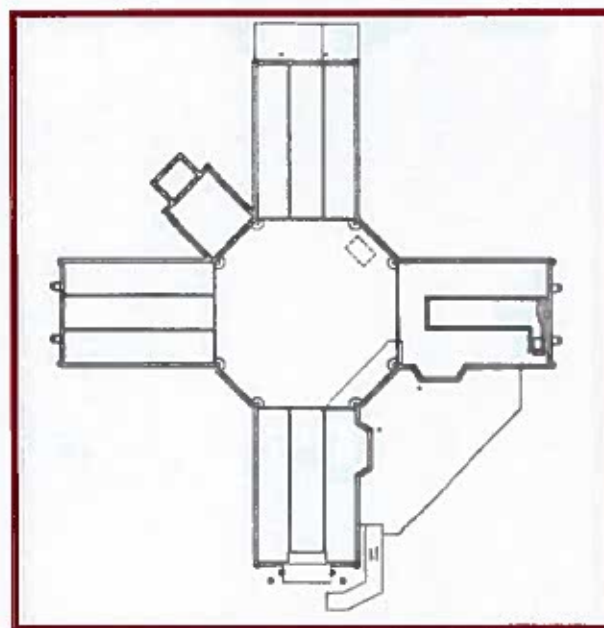
Lake General Store is located in a highly active seismic zone. In recent years (as of 2004) the ground under the adjacent Yellowstone Lake has started to rise significantly, indicating increased geological activity. There is a 'bulge' about 2,000 feet (600 m) long and 100 feet (30 m) high under a section of Yellowstone Lake where there are a variety of faults, hot springs and small craters. Seismic imaging has recently shown that sediment layers are tilted, but how old this feature is has not yet been established.

The building has obviously experienced movement in the past, as evidenced in the uneven settlement of the window bays. Sizable floor patches apparently made to accommodate installation of new framing members in the crawlspace. The Yellowstone Lake area also has high code required snow load values. Through the structural upgrade, we plan to address the issues at life safety levels.

Through addressing life safety level loads to the building, we have made several engineering decisions due to the occupied seasons of the building. In specific, we are upgrading the building fully for code defined seismic and wind loading. The main level floor will also be upgraded for retail live loading. However, to avoid disturbing the historic log structure of the octagonal roof, we will not be fully upgrading the roof for code-mandated snow loading.



Yellowstone National Park Seismic Activity –
5/6/07 thru 05-05-08



Lake Store crawlspace plan.



Code Compliance

Strict compliance with current building codes for new construction would be detrimental to the historic character of Lake Store. The intent of this analysis - and the resultant recommendations for structural improvements - is to render the building safe for the occupants and to enable the building to withstand the ravages of nature without compromising the historic integrity of the building.

A structural renovation should comply with the *International Existing Building Code* and *International Building Code*, with the exception of the octagonal roof under snow loading. As stated previously, we recommend designing for code required life safety loads. The octagonal roof should be designed to prevent complete collapse of the structure under snow loading, but not against isolated roof member failure. For example, the individual octagonal roof purlins will not be structurally adequate with respect to code mandated loading and could possibly experience isolated excessive deflection and even failure under heavy snow loads. However, the octagonal roof as a whole should remain intact.

The following loads will be addressed:

1. Occupied Events:
 - a. Lateral loading (seismic and wind)
 - b. Retail live loads: the code mandates 100 psf (pounds per square foot).
 - c. Storage area loads: the code mandates 125 psf loading.
2. Non-Occupied events:
 - a. Snow loading: the code mandates 140 psf ground snow loading. The snow load is reducible for slope.



*Octagonal Roof – Visual Structure Limits
Upgrades without changing aesthetic*



Foundation Assessment

Description: The Lake General Store foundation consists of log and timber beams located at the perimeter of the building and at interior bearing points which span 12' to 14' to concrete piers.¹ Each exterior log beam essentially functions as a grade beam. Stone and concrete curb walls are visible on the exterior base of the building, but are infill only and do not offer any support to the building. The concrete "curb" and stone walls act only to provide a barrier between the exterior and the crawl space.² The existing concrete curb wall sits 5" or 6" proud of the building line. The stone facing (up against the log beam) occurs at the public faces of the building, whereas the concrete base wall is at the west and north wings of the building.



Interior supports for the beams in the crawlspace are not stable, nor reliable.



Exterior Base Stone Facade



Exterior Base Concrete Curb Facade

¹ There is no evidence of crawlspace under the concrete vault addition to the office at the northwest corner of the building.

² Substantial bear claw marks on some of the log beams in the crawlspace are a clear indication of why this originally open crawlspace was enclosed with the concrete and stone walls between the concrete piers. See *Construction History*.



Condition: The foundation is in fair condition, as there is some deterioration and distress in the log floor beams. However, there are also limited connections and stability. The exterior exposed stone and concrete bases are generally in good condition. During the winter, much of the base and lower wall structure are surrounded by deep snow cover. This cover is deepest at the west and north sides of the building where drifts can be as deep as five feet. The spring run-off and melting snow penetrate the cracks in the concrete and stone bases. The condition of the outside face of the log beams is not visible; hence the degree of water penetration – and probable damage to the wood – cannot be determined. However, the interior surfaces of some of these log beams show signs of serious distress and deterioration. Some beams have deflected and some are of questionable quality.

The south wall of the Snack Area (east wing) has settled substantially and the bay window is sloping into the dining area. The maple floor is buckled here (to a height of 2½"), extensive water is located in the dirt crawlspace beneath, and the log beam along this south wall has been replaced with a heavy timber that has been compromised by notching at the bottom in order to bear on the supports.

Interior supports within the crawlspace have been excessively shimmed and would generally be unstable in the event of a major seismic occurrence. Several of the "supports" are makeshift wooden shims built up on the crawlspace soil.

The concrete piers are approximately 1'-4" square, but their depth has not been determined. The piers distribute base gravity loads, but are not adequate for lateral load distribution or present day code gravity loading. The lateral loads will be distributed to the exterior foundation, but the interior foundations

need to be provided with adequate connections to remain stable in a lateral event.

The chimney foundation has limited access for assessment. However, our current review deems the chimney foundation acceptable as is. We will verify the adequacy of the chimney foundation as demolition of the adjacent foundation occurs.

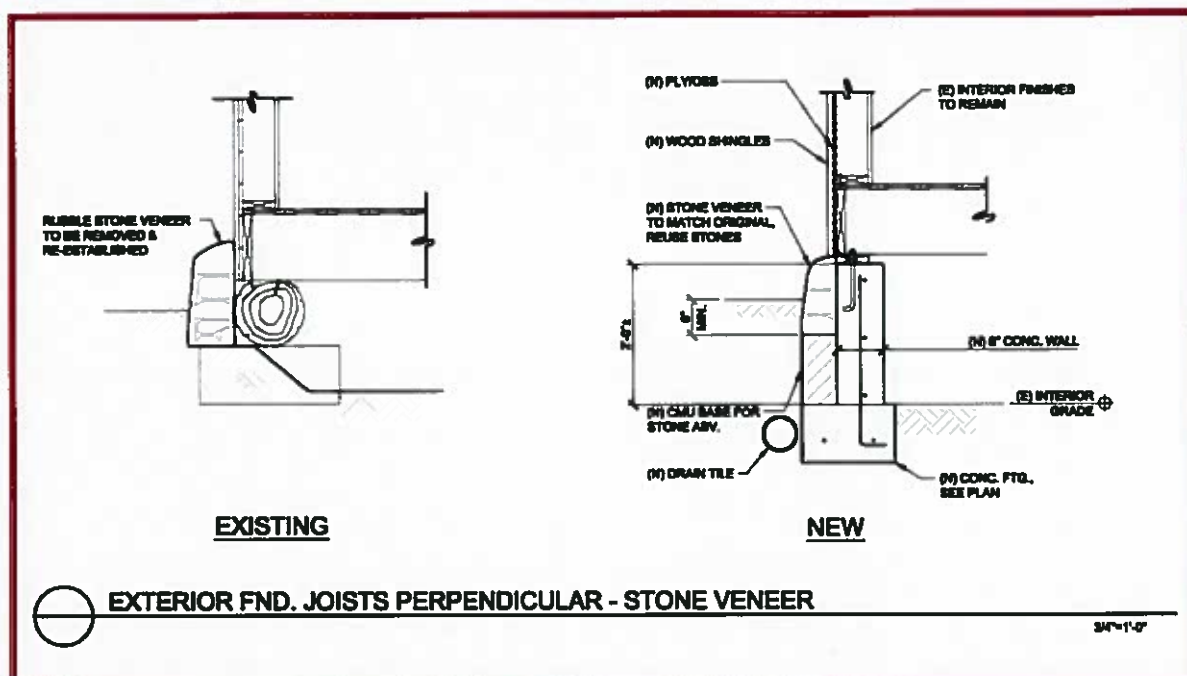
Solution Options: Consideration has been given to saving and reusing the existing log grade beams. However, due to necessary upgrades for life safety specified lateral and gravity loading it is essential that the foundation be upgraded for proper stability and support. The foundation upgrade effort should be in conjunction with significant re-grading of the lawn areas outside the building, and installation of a perimeter drain tile, so as to direct water away from the base of the building. The new foundation upgrades will only be visible from inside the crawl space; the goal is to retain the historic appearance for public view.

After site investigation, which included examination of the more accessible portions of the crawlspace, three likely solutions were considered, as follows:

1. Establish a continuous new foundation wall (masonry or concrete) all around the perimeter. Install a stone veneer to replicate the existing base perimeter. Install new isolated concrete piers for support of interior floor beams.
2. Eliminate the existing wood floor and crawlspace and replace it with a new concrete slab-on-fill foundation system (again with stone veneer).
3. Install an isolated pier foundation system, which would appear like the existing. New foundations and floor support beams would be provided.



Lake General Store Historic Structure Report



Due to the condition of the existing foundation, complete foundation replacement is recommended.

Recommendations:

Construction of a continuous foundation wall is the most economically and structurally positive option, for the following reasons:

1. A continuous foundation will provide proper stabilization and distribution of lateral loads. If isolated piers were to be used for the exterior instead, the size and depth would have to be substantial just to accommodate the seismic forces.
2. Many of the current log beams which support the exterior wall are showing signs of serious distress and deterioration. The existing beams would need to be replaced and all connections upgraded.
3. A continuous foundation wall would act as a closure wall between the crawl space and outside, accommodating

grading conditions, stone veneer, etc. Since the closure wall is necessary visually and functionally, it is logical to incorporate it as a foundation component.

4. A continuous foundation wall and footing will facilitate installation of footing-level perimeter drain tiles.

In addition to installing a continuous foundation wall, the interior floor beam supports should be replaced with concrete piers. Installation of the upgraded foundation will require the contractor to lift the building during construction. The contractor³ has also proposed removal of the wood flooring and subflooring from the main floor level, to facilitate digging on the inside face

³ Delaware North Companies has engaged Martel Construction Inc. to provide pre-construction services. Martel has participated in the discussions regarding feasibility and constructability.



Lake General Store Historic Structure Report

of the perimeter footing trench, installation of the new interior piers, and replacement of the new members within the crawlspace.

Floor Framing

Description: The main floor consists of 2x12's @ 16" on center; these floor joists span approximately 8' to floor beams. The floor joists span N-S throughout the octagonal portion of the building and the east and west wings. The floor joists span east-west throughout the north and south wings. The joists are supported by a variety of floor beam types that range from 7" square beams, log beams, and built-up timbers. The main floor subflooring is 1x diagonal planking.

Condition: The floor joists are in fair condition; there are areas of deterioration which compromise the strength of the joist. The floor joists are acceptable for code required retail live loads. The interior floor beams are not sufficiently sized to support the live retail load. The floor beams are not consistent in size and generally do not have positive connections. Further, the beams are supported by make-shift cribbing and miscellaneous footings spaced about 6'-8' on center.



Looking south toward the spliced beam under the window bay of the east wing.



Deteriorated Floor Joists

Recommendations: The main floor upgrades are dependent upon the upgrades to the foundation and the deterioration and strength of existing members. The log beams are substantially insufficient for code required retail loading. As described in the *Foundation Assessment* section, the exterior log floor beam will be replaced with a continuous concrete foundation. The interior log floor beams should be replaced with new beams that are adequate for the code required loading. The joists are sufficient; only deteriorated or excessively notched joists should be upgraded with "sisters" (additional joists attached to the existing joists). A sister joist, matching the size of the existing joist, will suffice. Additional support is required for the second floor joists adjacent to the stairway in the storage area.

The replacement of the existing interior floor beams and isolated footings will provide the opportunity to level the floor surface. It is unnecessary to remove the diagonal floor planking for structural reasons or for purposes of floor leveling. However, the removal of the floor will provide needed access to the crawl space during construction. Martel Construction has stated that complete removal of the flooring will be much more effective than removing only portions of the floor boards; as the floor post-renovation will be more cohesive. Complete removal of the diagonal planking will lead to a



Lake General Store Historic Structure Report

weak condition at the perimeter wall-to-floor interface, as the existing planking would remain below the wall while a new subfloor would not. However, blocking can be installed to provide an adequate positive connection. With the removal of the existing flooring and subflooring, some temporary stabilization strongbacks and bracing will be required during the raising of the building for installation of the new foundation.

Wall Framing

Description: The walls are framed with 2x6 (1 $\frac{1}{4}$ " x 5 $\frac{1}{2}$ " actual) wood studs at 16" on center. There is a double top plate at the top of the walls in the storage room, so it's assumed that this configuration is typical to the wing walls. The walls in the storage room are exposed framing, showing 1 x 6 horizontal sheathing boards on the exterior face.

Condition: Most of the walls are concealed behind exterior and interior finishes and sheathing. The exposed stud walls in the storage room appear to be in good condition.

Horizontal wall planking is not a code recognized lateral wall sheathing and is insufficient for the code required lateral loads. In the past, the walls have racked, as evidenced in the several of the window and door openings.



The stud and king-post truss in the storage room, looking south towards the beadboard finish in the rotunda.

Recommendations: To enable the building to withstand the lateral loads, a new plywood or oriented strand board (osb) layer of sheathing should be attached to all exterior walls. The new wall sheathing may be installed on either the inside or outside face of the wall. Given the condition of the exterior wall shingles, it is recommended that the exterior finish and sheathing be removed to install the new diaphragm. Consideration could be given to removing the interior finish instead, but the interior V-groove boards and beadboards do not otherwise require replacement and they are probably too dry to survive removal and reinstallation.

Roof Framing

Description: The roof consists of two distinct sections, the octagonal roof section in the middle and the four wing roofs. The octagonal roof consists of eight facets that connect to a single central peak with a tension ring at the plate line, and is supported by eight 12" diameter log columns. The octagonal roof members are approximately 6"-diameter logs with 2x perpendicular planking spanning between members. The four side wing roofs are supported by 2x10 rafters located at 24" on center with a ridge board and perpendicular planking. King-post trusses of 6"-diameter logs act as tie logs to hold the top of the walls in.

The code required ground snow load for the Lake area is 140 psf. Code allows for further reduction due to roof slope, but the snow load on the structure is still significant.



Exterior View: Roof Lines Structural Assessment
Page VIII - 7



Lake General Store Historic Structure Report



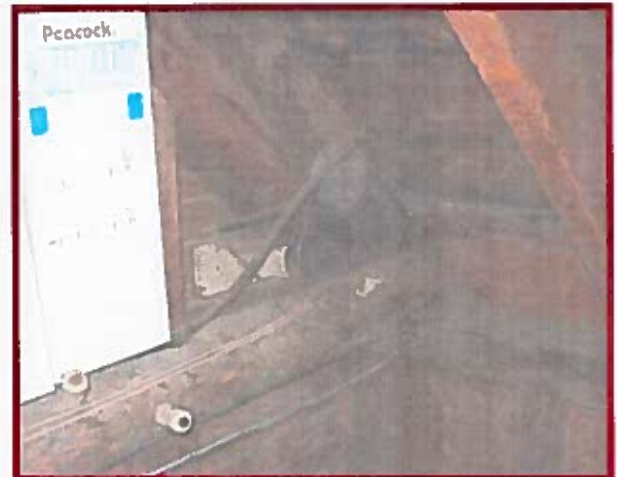
Small logs form tension rings and purlins for the pyramidal roof structure.

Conditions: The roof is in good condition. The wing roof rafters will not be visible until the roof is removed, but the visible portions of the roof exhibit limited deterioration or distress. However, the connections have limited capacity and both roof types are significantly overstressed for code required snow loads.

Unbalanced snow loads are typical on the roofs. The unbalanced loading conditions cause localized high forces in some of the connections and members. The core rotunda logs are insufficient to counteract this thrust and their connections are minimal.

The two log columns flanking the main entry have been spliced at the bottom. The splice is

in a poor location with minimal to no mechanical connection visible.



The rafter to wing wall connection is insufficient.

Solution Options: Neither the wing roofs nor octagonal roof are adequate for code required snow loads. However, as discussed previously in the 'Code Compliance' section, the building will not be occupied during heavy snow loads. Both engineering and aesthetic decisions affect the upgrade solutions to the roof structure.

The four following options for the octagonal roof upgrade were considered:

1. Remove the existing 6"-diameter log roof members and replaced them with approximately 12"-diameter log roof members.
2. Provide a secondary steel roof atop the existing roof, thus the current roof would be concealed. However the exterior eave line would become approximately one foot thicker.
3. Provide temporary seasonal support for the roof, which could be installed and removed by the maintenance staff.
4. Provide strapping to prevent complete roof collapse, but not isolated member failure.



Lake General Store Historic Structure Report

Clearly the first two options would change the aesthetic of the building. The third option did not bring the existing roof to full code compliance without multiple supports and annual dependence upon maintenance staff for proper installation. The fourth option was deemed the most viable as it would maintain the historic fabric of the building and still satisfy life safety criteria. The building will be unoccupied during heavy snow loads. It was agreed to plan on manual snow removal.

Protection of the historic fabric provides parameters in determining the wing roof upgrades. The upgrades would be provided from above, after the roofing shingles and planking have been removed. The scope includes removing and replacing the existing roofing, but the interior would be retained as much as possible. The wing roofs have two specific areas of deficiency. The rafters are inadequate for code specified snow loading, and the rafter kick-out force exceeds the capacity of the top plate of the wall which is currently providing the resistance.

Recommendations: The perpendicular roof planking is an inadequate diaphragm to distribute the lateral forces to the new shear walls. The entire roof should be resheathed with plywood. The sheathing will not only provide an adequate diaphragm, but will provide additional stiffness for the octagonal roof.

On the octagonal roof, strapping can be fastened over the plywood sheathing to provide needed restraint for the 'hoop' forces. The strapping will help prevent an overall catastrophic, complete collapse of the octagonal roof. However, the upgrades will not prevent isolated member failure. As discussed previously, the building is unoccupied during the large snow events; however maintenance personnel will require limited occupancy. Any localized member failure will be preceded by

significant deflection and noise. We feel maintenance personnel will have more than adequate warning, so life safety concerns will still be satisfied. Connections should be added for lateral load distribution from the roof to the shear walls.

The wing roofs can be fully upgraded with minimal visual changes. The wing roofs have larger snow loads than the octagonal roof, as the octagonal roof dumps snow onto the lower wing roofs. Consequently, the wing roofs should be upgraded for code specified snow loads. As discussed previously, the majority of the wing roof upgrades can be conducted from above, leaving the interior beadboard intact. All roof members should be sistered for strength. The ridge consists of a ridge board, not a ridge beam, and the top plate of the wall is inadequate for the kick-out forces incurred. This can be resisted with a steel angle along the top of the wall on the interior. The angle can be concealed with beadboard or trim. The steel angle would be tied in to steel cables which would run along the bottom chord of the existing log trusses. Many of the log trusses currently have a steel rod along the bottom chord, and these will be removed and replaced with the steel cables. The log trusses will become ornamental.

Conclusions

The Lake General Store has significant seismic and snow loads due to its location. Through the structural upgrade, these issues for life safety levels can be addressed. As is typical to historically significant buildings, engineering decisions involve the delicate balance between life safety and building longevity, and the disturbance to historic fabric. Due to the nature of the Lake General Store, the obvious reasoning centers on the occupied and unoccupied seasons of the building. In specific, the building should be upgraded fully for code-



Lake General Store Historic Structure Report

defined seismic and wind loading. The main level floor should also be upgraded for retail live loading. However, in lieu of disturbing the historic octagonal roof structure, the roof will not be fully upgraded for code-mandated snow loading. Modifications should be designed to prevent complete collapse of the structure under snow loading, but not isolated roof member failure. The recommended upgrades should provide stability for the building to be adequate for many years into the future.



IX. CONDITION ASSESSMENT Systems

General

The following systems are considered for support and comfort of the occupants of the building.

Insulation

Description: The cavities between the floor joists, the wall studs, and the roof rafters are not fitted with insulation or vapor barriers. The building is open typically from mid-May to mid-September. While considered to be a summer season, the evenings and September days can be in the thirties and colder.

The building has many openings and cracks throughout – air and moisture infiltration is high. Older buildings typically have a natural air exchange from one to four changes per hour. This can help dilute moisture in the building.

The crawlspace is currently de-humidified via a unit at the northeast facet between the north and east wings. This de-humidifier runs through the winter; power is provided to it all year long. Otherwise the floor in the retail space above gets humid and buckles.¹

Condition: There is no evidence that there is a build-up of moisture in the walls, but there is evidence that the soil in the crawlspace gets wet and transmits moisture to the flooring above.

Considerations:

Crawlspace: In this unheated space, insulation with an integral vapor barrier could be installed between the floor joists, with the vapor barrier facing up. This installation would have to be in

conjunction with the installation of effective vents in the perimeter foundation walls, to ensure the movement of air through the crawlspace. Given the build-up of moisture in the crawlspace, even with proper venting the insulation would probably get moist and be less effective and potentially damaging to the floor joists.

Walls: Installation of insulation between the studs requires careful consideration due to the high potential for damage to the wood structure. Installation of the necessary vapor barrier on the warm side of the wall construction would require removal of the interior or exterior wall finishes. Insulation requires a vapor barrier and some provision for ventilation. Without this:

"The insulation would become saturated, losing its thermal properties, and in fact, actually increase the heat loss through the wall. Additionally, the moisture (in vapor form) may condense into water droplets and begin serious deterioration of adjacent building materials such as sills, window frames, framing and bracing...It should be clear that adding wall insulation has the potential for causing serious damage to historic building materials."²

The addition of the necessary ventilation – within each stud cavity – would be necessary to prevent damage to the structure. Essentially, the walls can be insulated, but at a potentially high cost to the long-term physical integrity of the building.

Recommendations: Given that the building is not occupied during the heating season, and the installation of insulation could cause damage to the historic structure, such installation is not recommended.

¹ Jason Fatouros, DNC Facilities Manager, relayed to Lesley M. Gilmore, April 27, 2007. This statement is supported by the condition of the maple flooring.

² Baird M. Smith, *Conserving Energy in Historic Buildings* (National Park Service, Preservation Brief No. 3), p. 5-7. See also Bill Rose's publication *Water in Buildings*.



Fire Protection System

Description: There is currently no interior or exterior automatic fire sprinkler system in the building. There are fire extinguishers mounted throughout the building in plain view.

Condition: Not applicable.

Recommendations: An automatic fire suppression system should be installed in the building in order to protect the occupants and hopefully the wooden building as well. Given the cold climate and lack of occupancy during the winter months, the suppression should be a dry pipe system which is drained at the end of the operating season. The system should be integrated with a fire alarm system.

Due to the architectural and historical significance of the building, the piping and sprinkler heads should be installed as sensitively as possible. The piping should be run alongside the beams for greatest concealment and the heads should be placed similarly or symmetrically within the spaces.

Plumbing System

Description: the restroom has a porcelain water closet with a shut-off valve at the copper supply line. The lavatory is located outside this room – it is a cast iron single-basin sink with single lever faucets supplied by galvanized pipes with shut-off valves.

The soda fountain has two hand sinks, an ice cream dip well, and icemaker. A triple basin sink and water heater are located in the Preparation Room.

Condition: The soda fountain and prep room supply piping is of copper and each fixture has a dedicated shut-off valve.

Recommendations: No modifications are necessary.



The restroom in the Storage Area. This is for employee use only.



The soda fountain area.



Lake General Store Historic Structure Report

Heating System

Description: The retail spaces are currently heated with unit heaters that were installed in early 2006.³ The central space and the Snack area each have a Renzor natural gas unit suspended from the structure (ceiling and truss, respectively). The office is heated with two 4'-long electric single-element baseboard heaters with integral thermostats. There is a thermostat in the restroom, but no visible heating device.



The Renzor heating unit in the rotunda.



One of the electric baseboard units in the office.

Condition: The unit heaters and baseboard heating units are new and functioning properly.

Recommendations: No work required.

Electrical System

Description: The meter is located on the exterior north wall by the loading dock.



Electrical service meter at the loading dock.

Panels: The main panel and general transfer panel are located on the east wall of the storage room adjacent to the restroom. The main panel schedule indicates it is a 200-Amp 40-circuit single-phase service fed by 200-Amp outside breaker, installed in February 2000. The transfer panel is a GE double-throw safety switch rated for 30-Amps.

There are four distribution panels located throughout the building:

1. Panel A at the northeast facet of the rotunda: These 20-amp breakers primarily control the soda fountain equipment and receptacles.

³ Jason Fatouros, DNC Facilities Manager, related this to Lesley M. Gilmore.



Lake General Store Historic Structure Report

2. Panel B at the northeast facet of the rotunda: These 20-Amp breakers control the coolers, dairy cases, and freezer.
3. Panel C at the southwest facet of the rotunda: This panel controls the interior and exterior lighting and one of the unit heaters. This panel does not have a door.
4. Panel D at the north wall of the east wing: These 20-Amp breakers control the receptacles and unit heater in the Snack Area.



Panel C at the southwest facet of the rotunda.

Distribution: Knob-and-tube wiring from the original distribution system remains in the building. It has been abandoned and replaced

with armor cable and exposed EMT (electrical metal tubing). The receptacles are grounded.

Illumination: The interior is illuminated with the central chandelier and smaller chandelier in the west and south wings. This is supplemented with 4'-long fluorescent tube fixtures - both with prismatic lenses and without lenses - in the central rotunda area. There are two exit signs without battery back-up and two emergency exit lights with battery back-up. Each emergency fixture has two incandescent head lamps.



Fluorescent lighting in the central space detracts from the historic architecture.

The office has two two-lamp 4'-long fluorescent fixtures without lenses. They are suspended from chains.

The storage room is lit with 4' and 8'-long single lamp fluorescent fixtures without lenses.

The restroom has a porcelain bare-bulb closet fixture. The walk-in cooler has two A-lamp fixtures with explosion-proof glass domes.

The exterior entries are illuminated with pendant side-arm fixtures with metal canopies and exposed lamps.



Lake General Store Historic Structure Report

Condition: The chandeliers have old wiring and sockets. See Asbestos below for potential concern about the chandelier wiring. The fluorescent light fixtures in the retail areas are inappropriate for the building and detract from the historic character of the space. They are older tubes which are inefficient.

Northern Industrial Hygiene's testing determined that none of the fluorescent light fixtures in the building have PCB-containing ballasts.⁴

Recommendations: Replace the wiring and sockets of the chandeliers. Replace the fluorescent fixtures with fixtures more in keeping with the historic character of the building. Such fixtures can be fitted with compact fluorescents in order to be energy-efficient. Consideration should be given to celebrating the architecture by providing uplighting of the central rotunda ceiling.

Lead-Based Paint

Description: In 2004 Delaware North Companies engaged Northern Industrial Hygiene to perform an assessment of the hazards at Lake Store. A copy of this assessment is included in the Appendix.

Condition: Lead-based paint was detected on the following five of the painted building components tested:

1. Interior wood walls and ceilings, except for the pine wainscot in the Snack Area.
2. Interior window sash.
3. Interior wood window casings.
4. Exterior wood doors.
5. Exterior door jamb.

Recommendations: Encapsulate the lead-based paint. For lead-based paint that's

⁴ See Northern Industrial Hygiene's report in the Appendix.

peeling, remove per OSHA and EPA regulations.

Asbestos

Description: In 2004 Delaware North Companies engaged Northern Industrial Hygiene to perform an assessment of the hazards at Lake Store. A copy of this assessment is included in the Appendix.

In addition, during the preparation of the Paint Analysis (for historic colors), Welsh Color and Conservation detected:

"...a small amount of small, clear fibers in the 4th/5th layer of paint on sample 7, from the rater in the west wing. Because the fibers had characteristics of asbestos, we analyzed them with the polarizing light microscope. However, our results are not entirely conclusive. The fiber bundles are short (approx. 0.1 mm long) and have refractive indices slightly higher than 1.66, but they are not pleochroic. Their presence may be insignificant since there is only a small amount of fibers in the paint."⁵

CTA's field investigation included the accessible parts of the crawlspace. Insulation on piping visible from the crawl access in the northeast corner of the rotunda is suspected to contain asbestos.

Condition: Northern Industrial Hygiene's report indicates that they identified four and tested three materials for potential asbestos. The three materials tested negative for asbestos and the electrical wiring with white insulation at the center chandelier was assumed to have asbestos (testing was problematic).⁶

⁵ Welsh Color and Conservation, *Lake Store Paint Analysis*, December 10, 2007. In the Appendix.

⁶ See Northern Industrial Hygiene's report in the Appendix.



Lake General Store Historic Structure Report

Recommendations: Welsh Color & Conservation recommended that the fibers in the brown paint layer be examined in more detail by a certified asbestos analytical lab.

When the chandeliers are removed, their wiring insulation should be tested for asbestos. Removal should proceed per regulations, depending on the test results.

The materials in the crawlspace, including the piping insulation, should be included in a comprehensive investigation by an industrial hygienist.



X. CODE ANALYSIS

Introduction

Lake General Store is an existing historic building. As such, it is not required to comply with all the code requirements that a new building must follow. However, it is imperative that the building be made as safe as possible, within the parameters of its historic character, its use, and its specific location. The following analysis addresses each aspect of the 2006

International Existing Building Code (IEBC) that relates to this building. With few exceptions, where an article does not apply to this building type, size, configuration, etc., the article is not included herein. As with the application of all codes, any questionable areas should be reviewed with local code officials or the appropriate governing body.

Construction Date: Constructed 1919-1922

Applicable Code: 2006 *International Existing Building Code*

Occupancy Type: Mercantile (M)

Occupancy Load: 145 persons

Summary of Code Compliance Determination: Per Article 101.5 of the 2006 *International Existing Building Code*, there are three allowable compliance methods, one of which needs to be followed for an existing building's renovation work to comply with the code. They are as follows:

- (1) **Prescriptive Compliance Method:** Repairs, alterations, additions and changes of occupancy comply with Chapter 3 of this code and the International Fire Code. The International Fire Code is not mandatory for the alteration and repair of historic buildings when such buildings or structures do not constitute a distinct hazard to life or property.¹
- (2) **Work Area Compliance Method:** Repairs, alterations, additions and changes of occupancy comply with applicable provisions of Chapter 4-12 of this code. This is the recommended method for compliance for the Lake General Store.
 - (a) There are three alteration levels, organized in increasing order of work performed on the building.
 - (b) Code compliance factors for each alteration level include, by definition, the compliance factor of the preceding alteration level. For example, Alteration Level 3 compliance includes compliance with Level 1 and Level 2.
 - (c) The three levels of alteration are defined in the summary of Chapter 4 below.
- (3) **Performance Compliance Method:** Repairs, alterations, additions and changes of occupancy comply with applicable provisions of Chapter 13 of this code.

The Work Area Compliance Method is typically more feasible for historic buildings, hence is the recommended for code-compliance approach for Lake General Store. Specific applications are highlighted in the summary analysis below.

¹ 2006 International Fire Code, Section 102.5, p. 1.



Lake General Store
Historic Structure Report

Code Reference	Code Provision	Code Application
202	Occupancy:	Application: No change in occupancy – it remains mercantile.
202	Historic Building:	Application: Lake Store is eligible for listing on the National Register of Historic Places as a contributing property within the Lake Historic District.

Chapter 3: Prescriptive Compliance Method (First Option for Compliance)

302	Scope of Work:	No addition; alterations only. Additions or alterations shall comply with the requirement of the IBC.
302.4	Stairways:	An alteration or replacement of existing stairway in an existing structure shall not be required to comply with the requirements of a new stairway as outlined in Section 1009 of the IBC where the existing space and construction will not allow a reduction in pitch or slope.
302.5	Energy:	Not applicable. Additions, alterations, renovations, or repairs to an existing building, building system or portion thereof shall conform to the provisions of this code as they relate to new construction without requiring the unaltered portion(s) of the existing building or building system to comply with this code. The following needn't comply, provided the energy use of the building is not increased: <ol style="list-style-type: none">1. Storm windows installed over existing fenestration.2. Replacement glass in existing sash.3. Existing ceiling, wall or floor cavities exposed during construction provided that these cavities are filled with insulation. (Incorporation of insulation within the existing wall structure might be detrimental to the building; an exemption for historic property should be applied for.4. Construction where the existing roof, wall or floor cavity is not exposed.



Code Reference	Code Provision	Code Application
302.6	Electrical:	<p>Alterations, renovations, or repairs to electrical installations shall conform to the ICC Electrical Code without requiring the existing installation to comply with all of the requirements of this code. Alterations shall not cause an existing installation to become unsafe, hazardous or overloaded.</p> <p>Minor alterations and repairs to existing installations shall meet the provisions for new construction unless such work is done in the same manner and arrangement as was in the existing system, is not hazardous and is approved.</p>
302.8	Mechanical:	Same as electrical, with reference to International Mechanical Code.
302.9	Plumbing:	Same as electrical, with reference to International Plumbing Code.
305 308.6	Change in Occupancy; Accessibility/ Alterations:	<p>No change in occupancy. Not Applicable.</p> <p>Alterations shall comply with the applicable provisions in Chapter 11 of IBC unless technically infeasible.</p> <p>Exception 2: Accessible means of egress required by Chapter 10 of IBC are not required to be provided in existing buildings and facilities. Where alteration affects the accessibility to a, or contains an area of, primary function, the route to the primary function area shall be accessible.</p> <p>Applicable exception:</p> <ol style="list-style-type: none"> 1. The costs of providing the accessible route area not required to exceed 20% of the costs of the alterations affecting the area of primary function.
308.7	Alterations affecting area of primary function:	<p>Where alteration affects the accessibility to a, or contains an area of, primary function, the route to the primary function area shall be accessible.</p> <p>Applicable exception:</p> <ol style="list-style-type: none"> 1. The costs of providing the accessible route area not required to exceed 20% of the costs of the alterations affecting the area of primary function.
308.8	Scoping for alterations:	Accessible entrances shall be provided.

Chapter 4: Description of Alteration Levels (Work Area Compliance Method)

403	Alteration Level 1:	Level 1 alterations include the removal and replacement or the covering of existing materials, elements, equipment, or fixture using new materials, elements, equipment, or fixtures that serve the same purpose. Such alterations shall comply with the provisions of Chapter 6.
404.1	Alteration Level 2:	Level 2 alterations include the reconfiguration of space, the addition or elimination of any door or window, the reconfiguration or extension of any system, or the installation of any additional equipment.



Code Reference	Code Provision	Code Application
405.1	Alteration Level 3:	<p>Level 3 alterations apply where the work area exceeds 50% of the aggregate area of the building.</p> <p>Application: The proposed work for Lake Store is Alteration Level 3.</p> <p>Level 3 alterations shall comply with the provisions of Chapters 6 and 7 for Level 1 and 2 alterations, respectively, as well as the provisions of Chapter 8.</p>
408.1	Historic Buildings	<p>Except as specifically provided for in Chapter 11, historic buildings shall comply with applicable provisions of this code for the type of work being performed.</p>

Chapter 6: Alterations – Level 1 (Work Area Compliance Method)

602.1	Interior Finishes:	All newly installed interior finishes shall comply with flame spread requirements of the IBC.
603.1	Fire Protection:	Alterations shall be done in a manner that maintains the level of fire protection provided.
604.1	Means of Egress:	Repairs shall be done in a manner that maintains the level of protection provided for the means of egress.
605.1	Accessibility:	<p>Application: Lake Store's means of egress and exit access travel distances comply with the <i>2006 International Building Code (IBC)</i>.</p> <p>A building or element that is altered shall comply with the applicable provisions in Sections 605.1.1-605.1.12, Chapter 11 of IBC, and ICC A117.1 unless technically infeasible.</p>
605.1.4	Ramps:	<p>Where steeper slopes than allowed by Section 1010.2 of the IBC are necessitated by space limitations, the slope of ramps in or providing access to existing building or facilities shall comply with Table 605.1.4.</p> <p>Application: There is ample room to provide the required slope outside Lake Store; no need to seek exception.</p>
605.1.5	Dining Areas:	<p>An accessible route to raised or sunken dining areas or to outdoor seating areas is not required provided that the same services and décor are provided in an accessible space usable by any occupant and not restricted to use by people with a disability.</p> <p>Application: If a raised dining area is provided at the south window bay, it does not need to be accessible.</p>



Code Reference	Code Provision	Code Application
605.1.11	Thresholds:	Maximum height of thresholds at doorways shall be $\frac{3}{4}$ ". Shall have beveled edges on each side. Application: The $1\frac{1}{2}$ " tall main entry threshold, or the adjacent flooring, should be revised to comply.
605.2	Alterations affecting an area containing a primary function:	The route to the primary function area shall be accessible. The accessible route to the primary function area shall include toilet facilities or drinking fountains serving the area of primary function. Exception 1: the costs of providing the accessible route are not required to exceed 20% of the costs of the alterations affecting the area of primary function.
606.3	Structural – Roof diaphragm:	Where roofing materials are removed from more than 50 percent of the roof diaphragm of a building or sections of a building where the roof diaphragm is a part of the main windforce-resisting system the integrity of the roof diaphragm shall be evaluated and if found deficient because of insufficient or deteriorated connections, such connections shall be provided or replaced. Application: If the roofing is replaced at Lake Store, as recommended, the diaphragm and connections should be replaced.
607.1	Energy Conservation:	Level 1 alterations are permitted without requiring the entire building to comply with the energy requirements of the <i>International Energy Conservation Code</i> . They shall comply as they relate to new construction only.

Chapter 7: Alterations – Level 2 (Work Area Compliance Method)

703.4	Interior Finish:	The interior finish of walls and ceilings in exits and corridors in any work area shall comply with the requirements of the IBC.
703.5	Guards:	703.5.1 Minimum requirement. Every portion of a floor, such as a balcony or a loading dock, that is more than 30 inches above the floor or grade below and is not provided with guards, or those in which the existing guards are judged to be in danger of collapsing, shall be provided with guards. Application: The loading dock is approximately 24" above grade. The entry landing area is approximately 25" above grade. Guard not required.



Lake General Store
Historic Structure Report

Code Reference	Code Provision	Code Application
704.2.2	Fire Protection:	<p>For Groups including type M, work areas that include exits or corridors shared by more than one tenant or that serve an occupant load greater than 30 shall be provided with automatic sprinkler protection where all of the following conditions occur:</p> <ol style="list-style-type: none">1. IBC requires automatic sprinkler protection for new construction.2. Work area exceeds 50% of the floor area.3. Sufficient municipal water supply without the installation of a new fire pump. <p>Application: Fire protection & fire alarm and detection are required by NPS/YNP.</p>
705.1	Means of Egress:	<p>Requirements of Section 7 shall be limited to work areas that include exits or corridors shared by more than one tenant within the work area in which Level 2 alterations are being performed.</p> <p>Application: There is only one tenant, so this section does not apply to Lake General Store.</p>
705.4.1	Two Egress Doorways required:	<p>Work areas shall be provided with two egress doorways.</p> <p>Application: There are two egress doorways at Lake General Store.</p>
705.4.2	Door swing:	<p>In the work area and in the egress path from any work area to the exit discharge, all egress doors serving an occupant load greater than 50 shall swing in the direction of exit travel.</p> <p>Application: Lake Store's exit doors swing in the direction of exit travel.</p>
708.1	Electrical -- new installations:	<p>All newly installed electrical equipment and wiring relating to work done in any work area shall comply with the materials and methods requirements of Chapter 5.</p>
708.2	Existing installations:	<p>Existing wiring in all work areas in Group A-1, A-2, A-5, H, and I occupancies shall be upgraded to meet the materials and methods requirements of Chapter 5.</p> <p>Application: This article does not apply to Lake Store, as it is of occupancy type M.</p>



Lake General Store
Historic Structure Report

Code Reference	Code Provision	Code Application
Chapter 8: Alterations – Level 3 (Work Area Compliance Method)		
807.5.2	Substantial structural alteration:	<p>Where more than 30% of the total floor and roof areas of the building or structure have been or are proposed to be involved in structural alteration within a 12-month period, the evaluation and analysis shall demonstrate that the altered building or structure complies with the IBC for wind loading with the reduced IBC level seismic forces as specified in Section 507.1.1.3 for seismic loading. For seismic considerations, the analysis shall be based on one of the procedures specified in Section 507.1.1.1.</p> <p>Application: The proposed structural improvements to Lake Store shall comply with IBC 507.1.1.3 as closely as possible, where feasible without sacrificing historic integrity.</p>



XI. RECOMMENDATIONS FOR TREATMENT

Restoration Target Date

The Lake General Store is significant both for its architecture and for its role reflecting the history of the Hamilton Stores development of commercial enterprise in Yellowstone National Park.

All of the Lake Store alterations that Charles Hamilton was involved with contribute to the social history of the building. Hamilton remained actively involved in Hamilton Stores until his passing in 1957. A Restoration Target Date can be crafted around the most significant architectural features which were directed by Charles Hamilton. We recommend a Restoration Target Date of 1957, for the following reasons:

1. The current form and massing of the building was extant.
2. The stone veneer at the base had been installed.
3. Some form of soda fountain had been installed.

Hamilton Stores had made the following primary modifications to the building before 1957:

1. Construction of the concrete vault off of the narrow end of the office.
2. Installation of the Billings Fixture Company soda fountain.
3. Hanging of the three chandeliers.
4. Construction of the rear shed at the loading dock.
5. Reconstruction of the front entry landing and stairs.
6. Removal of the burlled knotty log canopy at the entry.
7. Removal of the center log cashier "cage."

Any work performed on the building, while complying with the above parameters, should be guided generally by *The Secretary of Interior's Standards for Rehabilitation* (one of the treatment philosophies included in *The Secretary of the Interior's Standards for the Treatment of Historic Properties*). These standards, listed below, are supplemented with guidelines that more specifically address their interpretation and implementation. These supplemental guidelines should be referenced prior to engaging in construction activities at the house.

*Secretary of the Interior's Standards for Rehabilitation.*¹

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.

¹ U.S. Department of the Interior, *The Secretary of the Interior's Standard for Rehabilitation* (Washington, D.C., 1992), p. vi-vii.



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.

Rehabilitation Plan

The Rehabilitation Plan is based upon the Restoration Target Date, the above standards, the applicable codes, and the condition of the building. All of these conditions must be weighed and balanced to be able to provide a respectful treatment of the building. Proposed treatments call for replacement in kind of

deteriorated materials and stabilization or improvement of life safety. Since the use of the building has remained the same since historical knowledge, the building won't have to be modified to comply with stricter codes. Hence, the majority of the work included in the Rehabilitation Plan is for repairs to the building, to ensure longevity of the original and character-defining materials.

The intent is to have the building appear much as it does now – as it did c.1957 – and to appear well-maintained and used throughout the years. It should wear the patina of time gracefully and not appear as though newly constructed.

Over-Arching Priorities

The large-scale priorities that will inform the entire Rehabilitation Plan are as follows:

Structural Improvements

The building was not designed to resist the seismic loads inherent in the Lake District of the Park. The foundation and beam supports needs to be replaced, and the roof and walls need to be reinforced with new sheathing diaphragms. The roof framing needs to be supplemented in order to support snow loads and to resist lateral thrusts.

Miscellaneous Repairs

Such repairs are not life safety issues, but are associated with keeping the building in good repair. These repairs are identified in the list of Recommended Treatments that follows.



Prioritized Recommendations

In order to fulfill the goal of restoring the Lake General Store to its c.1926 appearance, various repairs are required, some components will need to be replaced or modified, and several surfaces will need to be prepared and repainted. All replacements should match the material, appearance, dimension, and detailing of the original. Improved detailing – where not visible – can be incorporated where it will result in greater longevity of the component. The systems not noted below should be maintained in current condition; modifications are not necessary.

The work has been categorized within the following priorities in descending order of immediacy:

1. Category 1: Component or system requires immediate attention in order to make the building reasonably safe for the occupants. This work should be performed immediately.
2. Category 2: Component or system requires immediate attention in order to prevent further deterioration of the building. This work should be performed within one year.
3. Category 3: Component or system requires attention within two years, in order to prevent further deterioration of the system.
4. Category 4: Component or system requires attention within five years.
5. Category 5: Component or system requires attention within ten years. Some of these items will be considered restoration to historic character of the residence.



Recommended Scope of Work

The following Scope of Work is listed in descending order of priority, with the Immediacy Category provided at the right. A number of the items should be grouped together to take advantage of the trades required for the work. Other items will be combined to facilitate proper sequencing of work.

Scope of Work	Immediacy
1. Replace foundation with continuous foundation wall. Provide stone veneer where historically.	2
2. Replace beams in crawlspace and interior support piers.	2
3. Reinforce wall framing with sheathing to act as diaphragm.	2
4. Sister additional members to the rafters of the wings.	2
5. Provide exterior strapping to enhance THE connections of the members of THE octagonal roof.	2
6. Sheath roofs to accommodate lateral loads.	2
7. Upgrade the connections between the wooden structural members.	2
8. At the columns flanking the main entry, provide connection of the bottom to the top part of the column.	2
9. Replace roofing shingles, incorporating sheet metal drip edges, flashing, and fall protection anchor points.	
10. Replace rotten and split portions of the wooden watertable, trim, and clapboards. Flash in conjunction with the foundation replacement.	2
11. Replace deteriorated exterior beams at south gable by chimney.	2
12. Treat base of exterior wood columns with water repellent treatment.	3
13. Replace deteriorated exterior wall shingles.	3
14. Replace novelty siding with replica novelty siding.	3
15. Incorporate flashing into window and door heads.	4
16. Prepare and repaint all worn paint surfaces on wood. Apply water repellent preservative to wood subject to moisture: column bases, fascias, and rafter tails – where in contact with soil, and water run-off from the roof and the site.	4
17. Prepare and refinish all doors.	4
18. Windows: Remove, stabilize all joints, reglaze (with existing glass), prepare and repaint. Paint system should include water repellent preservative. Sills should be treated with liquid epoxy consolidant prior to finish treatment.	4
19. Replace bird netting.	4
20. Repoint top of chimney. Inspect chimney flue; reline as required.	4
21. Replace the damaged and mismatched sections of wood flooring.	4
22. Strip paint from the painted sections of pine paneling in the Snack Area. Repair the split cap by the window bay.	5
23. Clean all interior wood surfaces, repaint. Cut buckled ceiling boards to lie flat.	5
24. Remove buckling fiberboard at north wall facet of south window bay. Repair as required; provide replica beadboard.	5
25. Fireplace: Reset dislocated firebrick and repoint. Clean stone surround and seal crack in mantel.	5
26. Internally rewire chandeliers and provide new sockets.	5
27. Replace outdated wiring and lighting fixtures.	5



XII. BIBLIOGRAPHY

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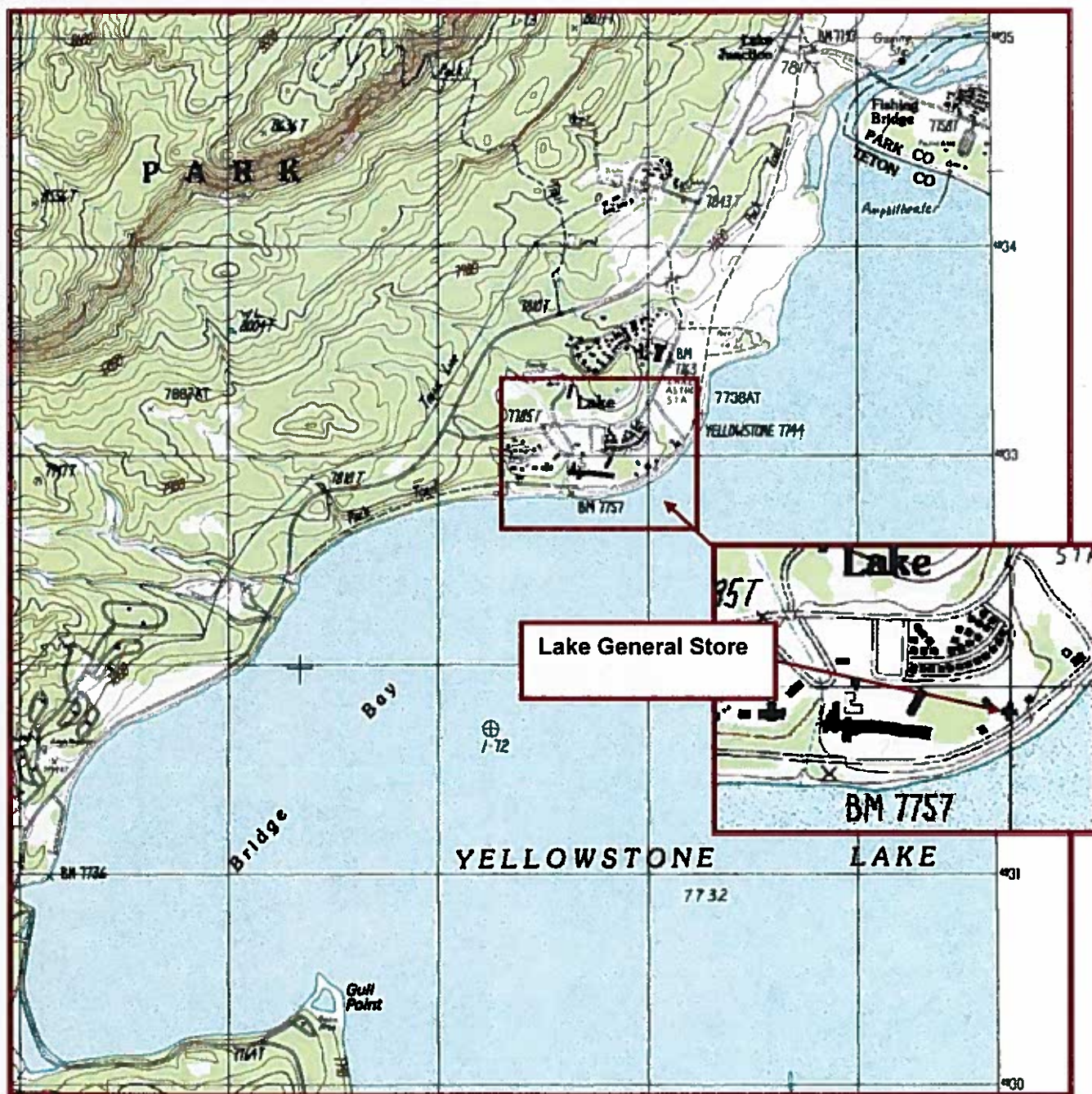
XIII. APPENDIX

The following support documents which have been referenced throughout this report are in the pages that follow:

1. USGS 7.5 minute site map
2. As-Built Drawings
3. Hazardous Materials: Northern Industrial Hygiene
4. Mortar Analysis: Abstract Masonry Restoration
5. Wood Testing Results: Quirk Consulting
6. Paint Color Analysis: Welsh Color & Conservation
7. 1978 Inventory Report
8. 1983 Inventory Report
9. 1999 Historic Structure Survey Form
10. 2002 Single Entry Report



Lake General Store
Historic Structure Report



Partial USGS Map, Lake District, Yellowstone National Park

Scale = 7.5 minutes

REVISIONS:

LAKE GENERAL STORE
YELLOWSTONE NATIONAL PARK
WYOMING

Historic Structure
Report

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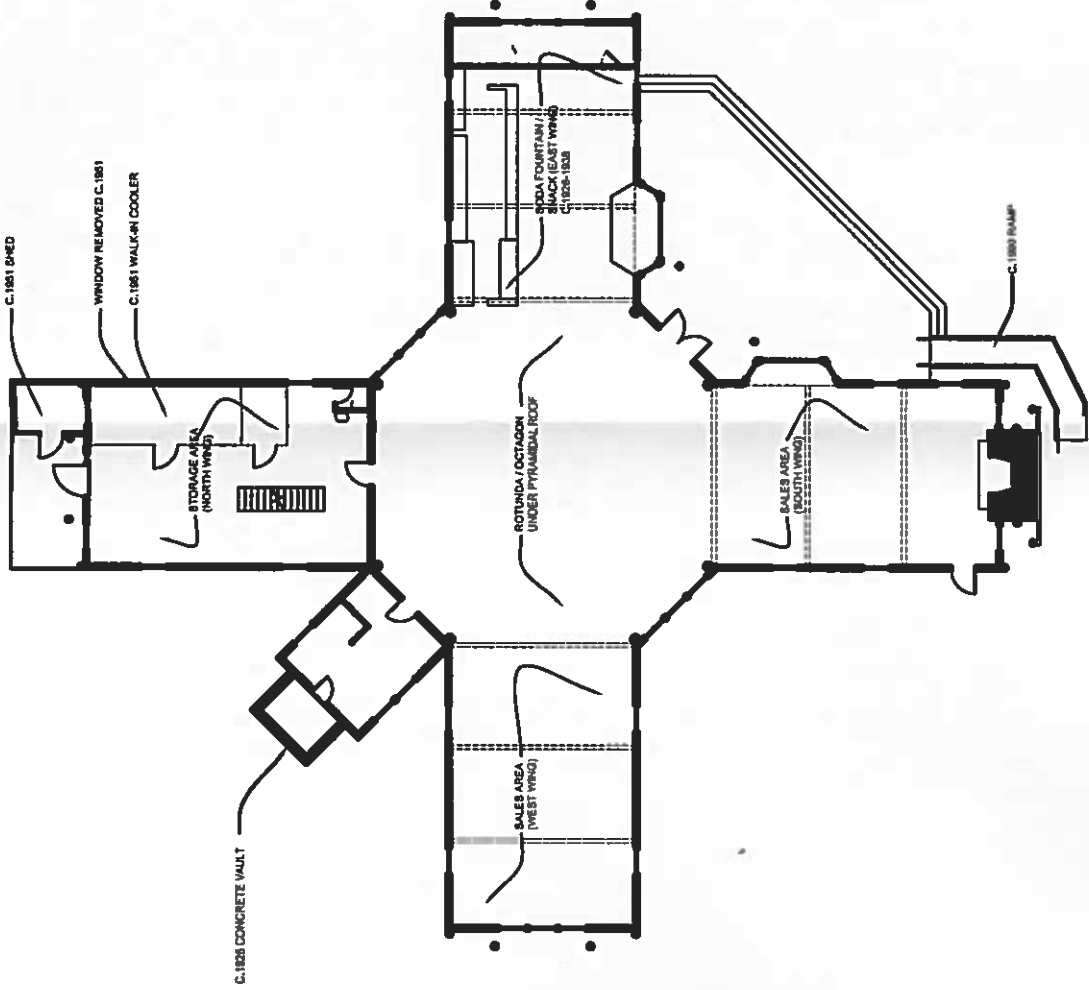
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HISTORIC STRUCTURE REPORT



EXISTING FIRST FLOOR PLAN

1 2

REPORT

**ASBESTOS-CONTAINING MATERIALS,
LEAD-BASED PAINT,
PCB and FLUORESCENT LIGHTS**

**Yellowstone General Stores
Yellowstone National Park, Wyoming**

Prepared For:

**A&E Architects
Billings, MT**

Prepared by:

**Northern Industrial Hygiene, Inc.
100 North 27th Street, Suite 550
Billings, Montana 59101**

Project No. 136-021

April 7, 2004

- Wood, Stair Stringer (L20);
- Wood, Stair Baluster (L21);
- Wood, Stair Tread (L22);
- Wood, Ceiling Trim (L25);
- Wood, Baseboard (L26);
- Wood, Wall (L28);
- Metal, Freight Door (L33); and
- Wood, Exterior Window Stool (35).

Most painted components were in good condition. Of the materials with lead-based paint, three were noted to be peeling or in poor condition. These included interior concrete walls, wood stair tread, and wood walls.

PCB and Fluorescent Tube Findings

Northern identified 13 different types of fluorescent light fixtures in the building. Of these, six types have ballasts assumed to contain PCB's. The building contains 162 fluorescent light fixtures of which 71 are assumed to contain PCB ballasts for an estimated total of 141 PCB ballasts. These fixtures contain 509 fluorescent tubes.

Lake - Retail

The building is a single story, wood framed structure on a stone foundation. It was constructed in 1919 and encloses approximately 7,000 square feet of space. In addition to the main floor, the building has a storage loft and a crawlspace. The exterior walls are comprised of wood and the pitched roof is finished with wood shakes.

Typical interior building material finishes include vinyl sheet flooring, 12"x12" floor tile, and wood finished floors; walls are finished with wood; and the ceiling consists of wood. Covebase, where present, is 4" vinyl covebase.

Typical interior painted building components included wood floors, walls, and ceilings; wood doors and door frame components; wood shelving; wood window components; and wood stair components.

The exterior was finished with wood. The roof was covered with wood shakes was not inspected for the presence of roofing felt underlayment. Painted exterior building components included wood walls and a wood bench.

Heat for the building is supplied by two forced air, LPG fired, hanging heaters. No thermal system insulation was observed. Original electrical wiring insulation was observed.

Asbestos Findings

A total of five building materials were identified in the portion of this facility that was inspected. Of the identified materials, four were suspected to contain asbestos. One material was assumed to contain asbestos and three materials were sampled following sample collection requirements outlined under the AHERA legislation. None of the sampled materials were confirmed to contain asbestos. The material assumed to contain asbestos is:

- Electrical Wiring with White Insulation (M11.1).

The material was located on the center chandelier, was inaccessible at the time of the inspection, and appeared to be in good condition.

Lead-Based Paint Findings

This inspection focused on identifying general painted building components on the interior and exterior of the building and performing testing of these components in various locations throughout the facility.

Eleven painted building components were identified. Lead paint was detected on five of the painted building components tested. These components are:

- Wood, Walls (L1);
- Wood, Doors (L3);
- Wood, Window Casing (L4);
- Wood, Door Jamb (L7); and
- Wood, Window Sash (L8).

Most painted components were in good condition. Of the materials with lead-based paint, one was noted to be peeling or in poor condition; this component was the wood window sash.

PCB and Fluorescent Tube Findings

Northern identified five different types of fluorescent light fixtures in the building. Of these, none were confirmed to have ballasts that contain PCB's. The building contains 49 fluorescent light fixtures which contain 85 fluorescent tubes.

~~Grant Village - Retail~~

~~The building is a single story, concrete framed structure, with a concrete basement. The~~

TABLE 1C
SUMMARY OF MATERIALS SUSPECTED TO CONTAIN ASBESTOS
LAKE RETAIL STORE
YELLOWSTONE NATIONAL PARK, WYOMING
NORTHERN INDUSTRIAL HYGIENE PROJECT #136-021

Material Number	Material Description	Laboratory Results
F1.1	Speckled Vinyl Sheet Flooring	ND
F2.1	12" x 12" Beige Floor Tile and Mastic	ND
M11.1	White Electrical Wiring - Center Chandelier	NS- Assumed
M12.1	4" Vinyl Black Covebase and Mastic	ND
M12.12	4" Vinyl Brown Covebase and Mastic (nonsuspect)	NS

Chrys = Chrysotile Asbestos
Amosite = Amosite Asbestos
NA = Sample Not Analyzed

NS = Material Not Sampled
ND = No Asbestos Detected

TABLE 2C

SUMMARY OF CONFIRMED OR ASSUMED ASBESTOS-CONTAINING MATERIALS
LAKE RETAIL BUILDING
LAKE VILLAGE, YELLOWSTONE NATIONAL PARK, WYOMING
NORTHERN INDUSTRIAL HYGIENE PROJECT #136-021

Material Number	Description	NESHAP Category	Recommended Response Action
M11.1	Chandelier Wiring	II	Sample prior to removal

Category I	Nonfriable ACM such as packings, gaskets, resilient floor covering, and asphalt roofing products.
Category II	All nonfriable ACM, excluding Category I materials.
RACM	Friable ACM; Category I material that has become friable; Category I material that will be subjected to sanding, grinding, cutting, or abrading; or Category II, material that has a high probability of becoming friable.

TABLE 3C

IDENTIFIED LEAD-BASED PAINT HOMOGENEOUS AREAS and XRF SCREENING RESULTS

LAKE RETAIL BUILDING

LAKE VILLAGE, YELLOWSTONE NATIONAL PARK, WYOMING

NORTHERN INDUSTRIAL HYGIENE PROJECT #136-021

Material Number	Structure	Substrate	Color (at time of survey)	Screening Result*	Material Condition
L1	Wall	Wood	Beige, clear	Pos, Neg	Intact
L2	Wall wainscot	Wood	Beige	Neg	Intact
L3	Door	Wood	Beige, brown, clear, green, gray, white	Pos, Neg	Intact
L4	Window casing	Wood	Beige	Pos	Intact
L5	Floor	Wood	Clear	Neg	Intact
L6	Door casing	Wood	Beige, white	Neg	Intact
L7	Door jamb	Wood	Brown, white	Pos, Neg	Intact
L8	Window sash	Wood	Beige	Pos	Peeling
L9	Bookshelf - retail display	Wood	Beige	Neg	Intact
L10	Exterior wall shingle	Wood	Brown	Neg	Fair
L11	Bench	Wood	Brown	Neg	Intact

* Pos = Lead-based paint - equal to or greater than 1.0 mg/cm² measured using XRF screening.* Neg = Nonlead-based paint - less than 1.0 mg/cm² measured using XRF screening.

** Reference Table 4C and drawings for locations of confirmed materials.

SUMMARY OF XRF INSTRUMENT READINGS
LAKE RETAIL BUILDING
LAKE VILLAGE, YELLOWSTONE NATIONAL PARK, WYOMING
NORTHERN INDUSTRIAL HYGIENE PROJECT #136-021

XRF Test No.	HA Mat'l. Number*	Floor	Room	Structure	Feature	Condition	Substrate	Color	PbL**	PbK**	Combined***
181	N/A	N/A	Calibrate	1	N/A	N/A	Surface	N/A	1.21	1.22	1.21
182	N/A	N/A	Calibrate	2	N/A	N/A	Buried	N/A	1.16	1.15	1.16
183	L1	1	101	Wall	N/A	Intact	Wood	Brown	0.01	0.28	0.01
184	L1	1	101	Wall	N/A	Intact	Wood	Beige	>>5.0	10.98	10.98
185	L2	1	101	Wall	N/A	Intact	Wood	Beige	0	-0.23	0
186	L1	1	101	Wall	N/A	Intact	Wood	Other	0	1.28	0
187	L1	1	101	Wall	N/A	Intact	Wood	Beige	>>5.0	13.24	13.24
188	L3	1	101	Door	N/A	Intact	Wood	Other	0	-0.35	0
189	L1	1	101	Wall	N/A	Intact	Wood	Beige	>>5.0	11.03	11.03
190	L4	1	101	Window	Casing	Intact	Wood	Beige	>>5.0	11.99	11.99
191	L5	1	101	Floor	N/A	Intact	Wood	Other	0	0.2	0
192	L3	N/A	Exterior	Door	N/A	Intact	Wood	White	>>5.0	11.42	11.42
193	L6	1	101	Door	Casing	Intact	Wood	White	0.05	0.41	0.05
194	L7	N/A	Exterior	Door	Jamb	Intact	Wood	White	0.03	0.42	0.03
195	L4	1	101	Window	Casing	Intact	Wood	Beige	>>5.0	10.18	10.18
196	L8	1	101	Window	Sash	Peeling	Wood	Beige	>>5.0	10.33	10.33
197	L3	N/A	Exterior	Door	N/A	Intact	Wood	Beige	1.88	2.4	1.88
198	L6	1	101	Door	Casing	Intact	Wood	Beige	0.67	1.02	0.67
199	L7	N/A	Exterior	Door	Jamb	Intact	Wood	Brown	1.02	0.66	1.02
200	L3	1	101	Door	N/A	Intact	Wood	Brown	1.9	1.54	1.9
201	L9	1	101	Bkcase	Shelf	Intact	Wood	Beige	0.01	-0.04	0.01
202	L10	N/A	Exterior	Wall	N/A	Fair	Wood	Brown	0.01	0	0.01

Notes:

* Refer to Table 3C for descriptions of identified homogeneous materials/areas

** PbL, PbK, and Combined indicates lead concentration in milligrams per square centimeter.

*** Concentrations greater than 1.0 milligrams per square centimeter (in bold type) are considered lead-based paint.

XRF Test No.	HA Mat'l. Number*	Floor	Room	Structure	Feature	Condition	Substrate	Color	PbL**	PbK**	Combined***
203	L10	N/A	Exterior	Wall	N/A	Fair	Wood	Brown	0.05	0.42	0.05
204	L10	N/A	Exterior	Bench	Seat	Intact	Wood	Brown	0	0	0
205	L11	1	101	Wall	N/A	Intact	Wood	Beige	>>5.0	9.16	9.16
206	L1	1	101	Window	Casing	Intact	Wood	Beige	>>5.0	9.1	9.1
207	L4	1	101	Floor	N/A	Intact	Wood	Other	0	0.42	0
208	L5	1	101	Door	Door	Intact	Wood	Beige	>>5.0	13.62	13.62
209	L3	1	106	Door	N/A	Intact	Wood	Green	0.18	1.01	0.18
210	L3	N/A	Ext. 105	Door	N/A	Intact	Wood	Brown	0	0.57	0
211	L3	1	108	Door	N/A	Intact	Wood	Grey	0.57	0.82	0.57
212	L3	1	108	Wall	N/A	Intact	Wood	Beige	0.23	0.61	0.23
213	L1	N/A	Calibrate	3	N/A	N/A	Surface	N/A	0.91	1.14	0.91
214	33	N/A	Calibrate	4	N/A	N/A	Buried	N/A	1.01	0.85	1.01

Notes:

* Refer to Table 3C for descriptions of identified homogeneous materials/areas

** PbL, PbK, and Combined indicates lead concentration in milligrams per square centimeter.

*** Concentrations greater than 1.0 milligrams per square centimeter (in bold type) are considered lead-based paint.

TABLE 5C.1
SUMMARY OF FLUORESCENT LIGHT FIXTURES
LAKE RETAIL STORE
YELLOWSTONE NATIONAL PARK, WYOMING
NORTHERN INDUSTRIAL HYGIENE PROJECT #136-021

FIXTURE NUMBER	FIXTURE DESCRIPTION	FIXTURE QUANTITY	PCB'S PRESENT YES/NO	BALLASTS PER FIXTURE	TUBES PER FIXTURE
F1	Surface mount, 8 foot, 2 tube, 2 ballast, T12	4	No	2	2
F2	Surface mount, 4 foot, 2 tube, 1 ballast, T8	20	No	1	2
F3	Surface mount w/lens, 4 foot, 2 tube, 1 ballast, T12	12	No	1	2
F4	Surface mount, 4 foot, 1 tube, 1 ballast, T12	3	No	1	1
F5	Surface mount, 8 foot, 1 tube, 1 ballast, T12	10	No	1	1

TABLE 5C.2
SYNOPSIS OF PCB-CONTAINING FIXTURES AND COMPONENTS

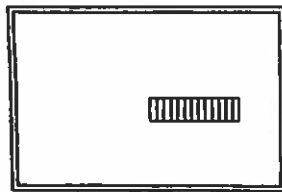
TOTAL NUMBER OF FIXTURES	TOTAL NUMBER OF PCB-CONTAINING BALLASTS	TOTAL NUMBER OF FLUORESCENT TUBES
49	None Identified	85

**TABLE 6C-1
ASBESTOS ABATEMENT COST ESTIMATE
LAKE RETAIL STORE
YELLOWSTONE NATIONAL PARK, WYOMING
NORTHERN INDUSTRIAL HYGIENE PROJECT #136-021**

Materials and Related Expenses	Quantity	Unit	Unit Cost	Total Cost
Chandelier Wiring	100	LF	\$3.00	\$300
Asbestos Waste Disposal	0.5	YD	\$33.00	\$17
Misc. Supplies (@ 5 % of job) (includes signs, plastic sheet, bags, tyvek, etc)				\$16
Asbestos Abatement Estimate				\$332
Other Hazardous Materials				
PCB Ballasts	0	EA	\$8.00	\$0
Fluorescent Light Tubes	85	EA	\$1.00	\$85
PCB Ballast and Tube Abatement Estimate				\$85

**TABLE 6C-2
LEAD ABATEMENT COST ESTIMATE*
LAKE RETAIL STORE
YELLOWSTONE NATIONAL PARK, WYOMING
NORTHERN INDUSTRIAL HYGIENE PROJECT #136-021**

Materials and Related Expenses	Quantity	Unit	Unit Cost	Total Cost
Interior wood walls (manage in place)	4,950	SF	\$0.00	\$0
Wood ceilings (manage in place)	5,750	SF	\$0.00	\$0
Doors (manage in place)	4	EA	\$0.00	\$0
Windows (manage in place)	32	Ea	\$0.00	\$0
Lead Waste Disposal - 55 Gallon Drum		DRUM	\$350.00	\$0
Lead Waste Disposal - Bulk, Poly Wrapped		CY	\$275.00	\$0
Lead Waste Disposal - Transportation (Applies to Bulk Only)		EVENT	\$3,000.00	\$0
Misc. Supplies (@ 5 % of job) (includes 55 gal. drums, signs, poly, bags, tyvek, etc)				\$0
Lead-Based Paint Abatement Estimate				\$0
TOTAL ABATEMENT ESTIMATE				\$0
*Cost estimates provided refer to preferred material specific abatement or management option.				



NOTE: NO ASBESTOS CONTAINING MATERIALS IDENTIFIED OR ASSUMED ON UPPER LEVEL.

UPPER LEVEL FLOOR PLAN

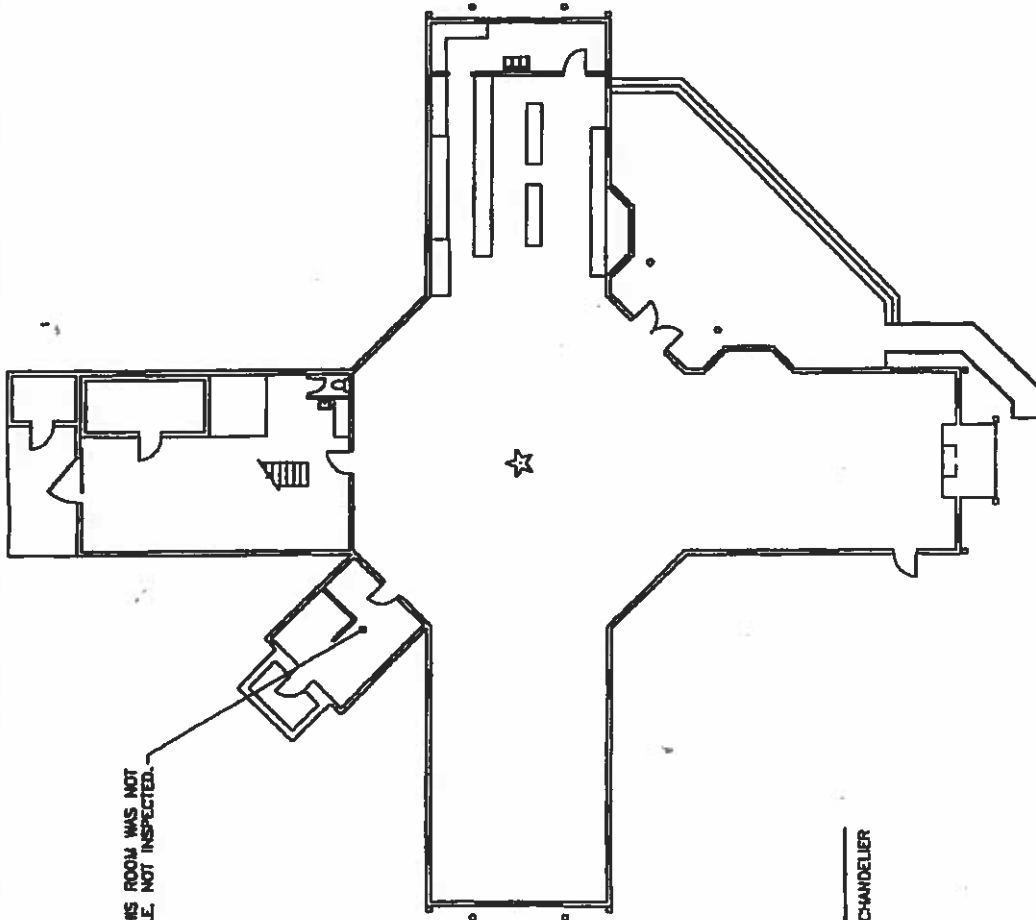


GRAPHIC LEGEND

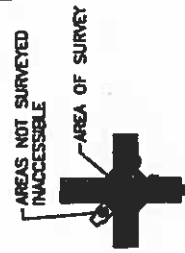
★ WHITE ELECTRICAL WIRING INSULATION ON CHANDELER ASSUMED. (N18.1)

[100] ROOM NUMBER

THIS ROOM WAS NOT ACCESSIBLE. NOT INSPECTED.



MAIN FLOOR PLAN



KEY PLAN

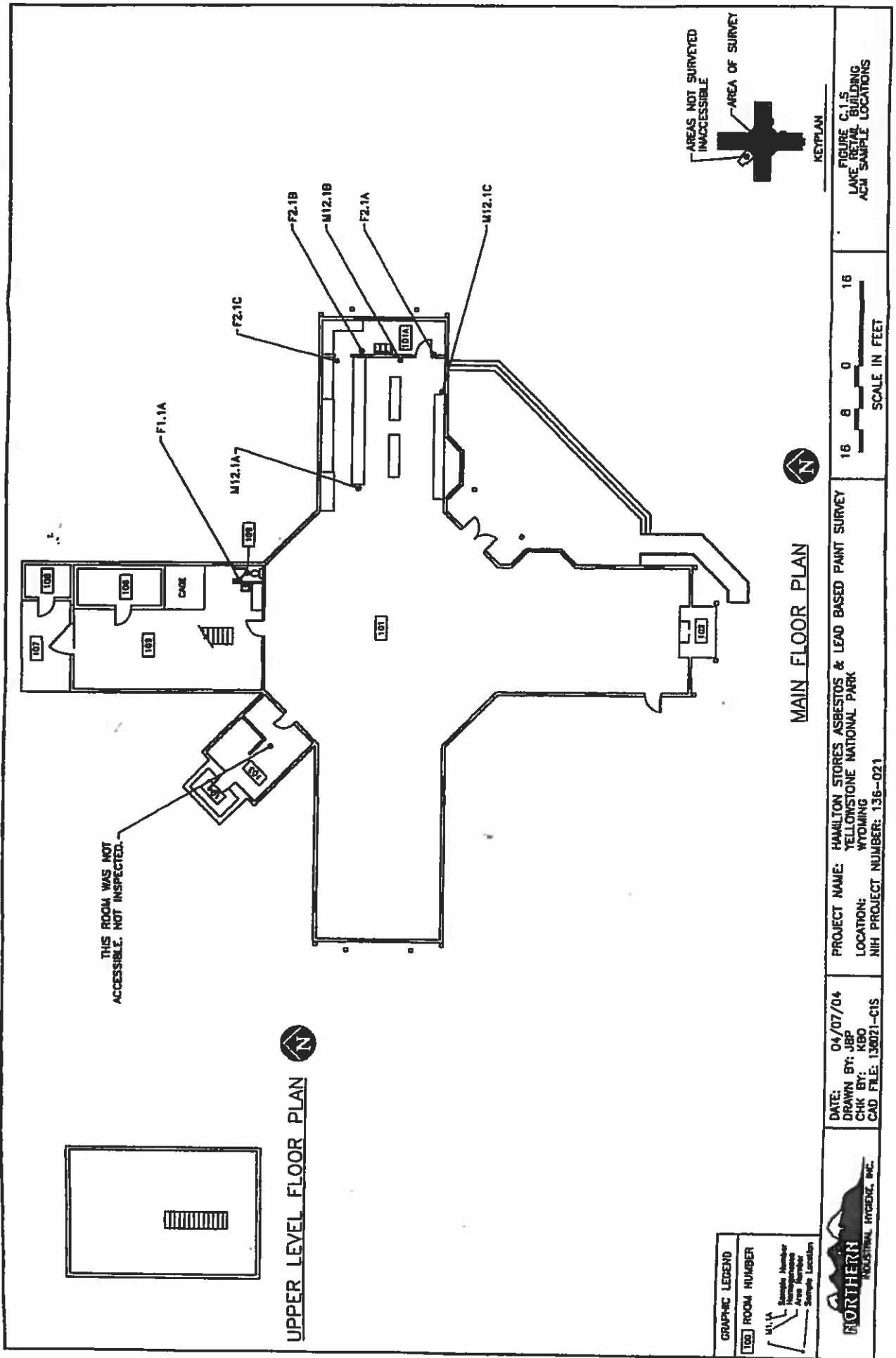
FIGURE C-1A
LAKE PAVILION BUILDING
CONFIRMED ACM LOCATIONS

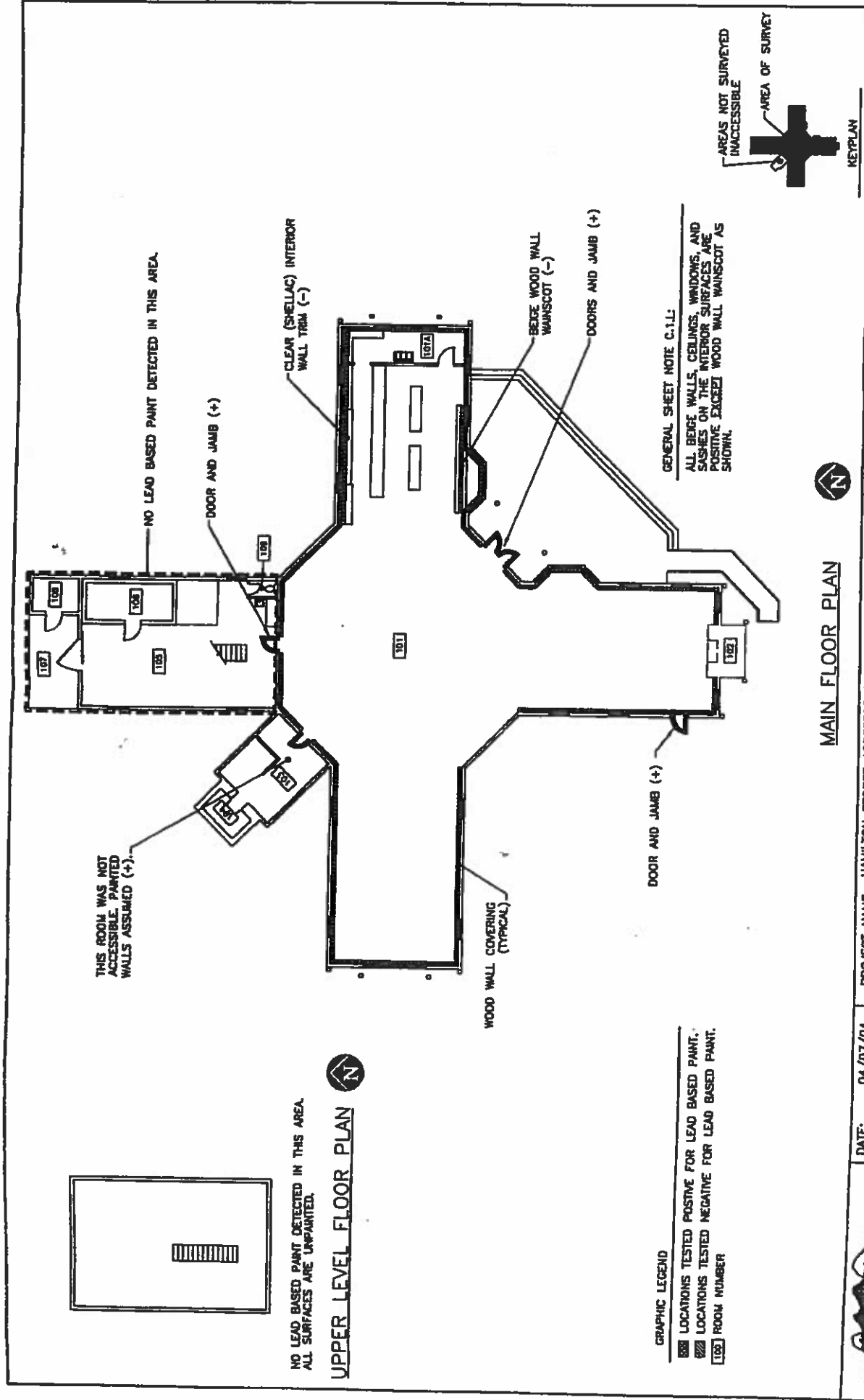


PROJECT NAME: HAMILTON STORES ASBESTOS & LEAD BASED PAINT SURVEY
LOCATION: YELLOWSTONE NATIONAL PARK
WYOMING
NIH PROJECT NUMBER: 135-021

DATE: 04/07/04
DRAWN BY: JBP
CHK BY: KBO
CAD FILE: 130021-C1A







MAIN FLOOR PLAN

DATE: 04/07/04
DRAWN BY: JBP
CHK BY: KBO
CAD FILE: 13821-CIL

PROJECT NAME: HAMILTON STORES ASBESTOS & LEAD BASED PAINT SURVEY
LOCATION: YELLOWSTONE NATIONAL PARK
WYOMING
NIH PROJECT NUMBER: 138-021





EXPERTS AT CLEANING,
REPAIRING AND PRESERVING
HISTORIC MASONRY

HISTORIC MORTAR REPORT

October 13, 2007

Subject Property:

**The Lake General Store (historically known as the Hamilton General Store)
Located in the southeast quarter Yellowstone National Park in
Teton County, Wyoming**

Report Submitted to:

**Lesley M. Gilmore
CTA Architects Engineers
1143 Stoneridge Drive
Bozeman, Montana 59718
(406) 566-7100**

Report Submitted by:

**John Lambert
Founder / President
Abstract Masonry Restoration, Inc.
6530 South 400 West
Salt Lake City, Utah 84107
(801) 262-6344
john@masonry-restoration.com**

BACKGROUND

The following information was provided by Lesley Gilmore of CTA Architects Engineers:

With the exception of the present stone chimney, the present building will be lifted in its entirety and a new crawl space dug. The concrete piers of the foundation will be removed and replaced with poured in place concrete foundation walls with footings.

Stone: The present foundation stone will be removed and salvaged for reuse as a new foundation with a 4 to 5 inch thick stone veneer. The intent is to replicate the mortar and install the salvaged stone as close to the original appearance as possible.

The present stone foundation is a veneer that is composed of a combination of various volcanic igneous rocks taken from Yellowstone National Park. The stones are thought to be obsidian, rhyolite and pumice. The stone was applied to the building in October 1922 to finish it off and keep animals out of the crawl space. The stone veneer is only at the most public elevations of the building, as indicated on the floor plan.

Mortar: The mortar is purportedly composed of obsidian sand, which was available in Yellowstone National Park. It's still extant there, but apparently is not allowed to be gathered.

Lesley Gilmore of CTA Architects stated that her observation is that the 1922 mortar has performed very well and is not found to be in a substantial state of deterioration.

SAMPLES SUBMITTED

On August 27, 2007, Lesley Gilmore of CTA Architects Engineers submitted the following materials for evaluation:

- 1) Mortar sample #1 taken from the east wall of the chimney.
- 2) Mortar sample #2 taken from the foundation veneer, north end of east wall, east wing.
- 3) Mortar sample # 3 taken from the base of the east column, south elevation, south wing.
- 4) Mortar sample # 4 taken from the top of stone base (slurry), south wall of south wing, east of chimney
- 5) Sand samples #5 and #6 were in two sandwich sized zip lock bags labeled "Washed Obsidian Sand." The origin of this sand is not known, but was purportedly provided to Lesley Gilmore of CTA Architects Engineers by a Montana based general contractor. Sand samples #5 and #6 appear to be from the same source and were packed in two separate bags for no other reason than to provide an adequate volume for analysis.

SCOPE OF EVALUATION

The above samples were submitted with the intent of having a general inspection and evaluation performed in order to arrive at a mortar formulation that reasonably matches the visual and historic appearance of the existing stone foundation while also being compatible with the surrounding stone and exposure conditions. A sophisticated, detailed and in depth petrographic analysis is beyond the intended scope of work.

As directed by Lesley Gilmore of CTA Architects Engineers, Sample #3 will be the focus of this report and mortar recommendation.

The recommended mortar formulation is for the new foundation veneer only, and not for the chimney. It should not be used for the chimney due to the chimney stone differing from the foundation stone.

It was beyond the scope of this project for me to go on-site to take samples or evaluate the present condition of the mortar and the stone foundation.

Mortar sample #3 was carefully visually examined through a 13 millimeter lighted 10x loupe.

CHARACTERIZATION OF MORTAR SAMPLE #3

The intact sample was taken and broken into 3 separate pieces in order to expose the appearance of the inner un-weathered mortar. The mortar is characteristically hard and dense, typical of a cement based mortar. The binder is off white / very light gray in color. The larger particles of aggregate appear to be primarily dark charcoal / black in color and resemble the washed obsidian sand submitted as sand samples #5 and #6 referred to above in the "Samples Submitted" segment of this report.

CHARACTERIZATION OF SAND SAMPLES #5 AND #6 (WASHED OBSIDIAN SAND)

Color: Approximately 70% of the sand particles are medium dark charcoal in color. Approximately 15% of the sand particles are light charcoal in color. The remaining 15% of the sand particles are an off- white / cream color.

Particle Shape: Course and very angular.

Particle Size Distribution: See attached "Exhibit A." As shown in the analysis in Exhibit A, this sand has an exceptional distribution of particle sizes that is very appropriate for the aggregate component of the recommended mortar.

Void Ratio: 32%. The void ratio is the measurement used to quantify the amount of air space between the particles of the sand sample. This measurement is used to determine the ratio of aggregate to binder in the mortar mix. The voids between sand particles should be filled with the mortar binder.

MORTAR RECOMMENDATION

Based on the analysis and data provided above, I recommend the following formulation for the mortar that will be used to construct the new stone veneer wall on the new concrete foundation:

1 part by volume white (not gray colored) Portland cement
1 part by volume Type S Hydrated Lime
6 parts by volume washed obsidian sand. It should be verified that this sand be from the same source as the sand samples #5 and #6 were taken from.

It may be necessary for the mason to add small quantities of pigments to the mortar mix in order to achieve the desired color. The overall mortar color should be established by salvaging several pieces of the existing mortar during demolition of the wall and matching the new mortar color to the broken, un-weathered surface. Prior to commencing work, an approved mock-up is highly recommended.

Based on the samples provided and the analysis performed, the recommended mortar formulation above should be similar in strength, performance and appearance to mortar sample #3. The recommended mortar formulation is consistent with the principle of the total binder (white Portland cement and Type S Hydrated Lime) filling the voids (32%) between the sand particles.

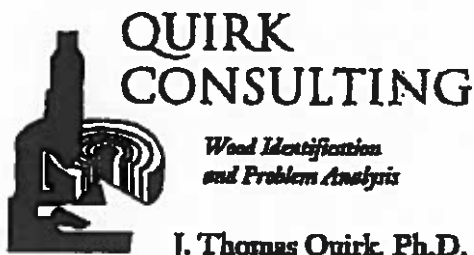
It is important to understand that there are several other things that will greatly affect the performance and appearance of the mortar. Among them are:

- 1) Site working conditions such as exposure to direct sunlight, rain, snow, high or low temperature, humidity, wind etc.
- 2) The procedures used to mix the mortar ingredients and pigments.
- 3) The water content of the mortar while in its plastic state.
- 4) Controlling the rate at which the stones absorb the water out of the mortar mix.
- 5) Over rapid drying of the mortar and controlling curing conditions.
- 6) The methods used to texture the mortar joints.
- 7) The methods used to clean the wall.
- 8) Substandard workmanship.

If you have further questions, please feel free to contact me.

Regards,

John Lambert
Founder / President
Abstract Masonry Restoration, Inc.



June 13, 2007

ATTN. Lesley Gilmore
CTA Architects Engineers
1143 Stoneridge Drive
Bozeman, MT 59718

RE. Laka General Store.

Dear Mr. Gilmore,
The wood samples IW1, IW2, IW3, IW4, IW5, BW1 & BW3 are Western Yellow Pine Group (Pinus sp.). The major species in this group is Ponderosa Pine (Pinus ponderosa)

Sample IW6 is Douglas fir (Pseudotsuga menziesii).

Samples BW4 & BW5 are White Pine Group, probably Western White Pine which is (Pinus monticola).

Samples BW2, BW6 & BW7 are Redwood (Sequoia sempervirens).

Thank you for the opportunity to be of assistance.

If you have any questions please call. 608-238-2225

Regards,


J. Thomas Quirk, Ph.D.
Wood Technologist

Enclosure: invoice #1463

117 N. Franklin Avenue • Madison, WI 53705 • Phone/Fax (608) 238-2225

Quirk Consulting Service

J. Thomas Quirk, Ph.D., Wood Technologist

Federal ID# 39-1538482

Invoice #1463

June 13, 2007

**ATTN. Lesley Gilmore
CTA Architects Engineers
1143 Stoneridge Drive
Bozeman, MT 59718**

RE. Lake General Store.

Wood identifications;

**IW1 Wall is Western Yellow Pine
IW2 bottom rail of window is Western Yellow Pine
IW3 wall is Western Yellow Pine
IW4 Log column is Western Yellow Pine
IW5 bottom trim of window is Western Yellow Pine
IW6 is Douglas fir.
BW1 corner board is Western Yellow Pine
BW2 wall shingle is Redwood
BW3 North column is Western Yellow Pine
BW4 Window trim is White Pine
BW5 corner board is White Pine
BW6 wood wall shingle is Redwood
BW7 roof shingle is Redwood**

**Remit to: J. Thomas Quirk, Ph.D.
117 N. Franklin Avenue
Madison, WI 53705**

Terms: payment in full required in 30 days.

Phone/FAX (808) 238-2225

E-mail TANDBQUIRK@AOL.COM



Welsh Color & Conservation, Inc.
Analysis of Historic Paints and Wallpapers

P.O. Box 787
Bryn Mawr, PA 19010-0787
Tel: 610-525-3684
E-mail: fswelsh@welshcolor.com



RECEIVED

DEC 13 2007

Website: www.welshcolor.com

December 10, 2007

Ms. Lesley M. Gilmore
CTA Architects Engineers
1143 Stoneridge Drive
Bozeman, MT 59718

Re: Lake General Store
Yellowstone National Park

Dear Lesley:



We received 21 paint samples from your firm from the Lake General Store, constructed in 1922 in Yellowstone National Park. Fourteen of the samples are from the exterior and seven are from the interior. We conducted a stereomicroscopical analysis of each sample to determine the layer structure and the colors of the original and mid 20th c. finish coats.




Our analyses and color evaluation disclose that all of the samples exhibit good paint layer evidence. There are approximately 8 – 10 layers of paint on the exterior samples and five on the interior samples. The first two layers are the original prime and finish coats and the near middle layers are those from the ca. 1950's.



In the 1920's the exterior siding and trim were dark brown, the window sashes were light gray. In the 1950's, the siding was olive brown, the trim was dark green, and the sashes were light green. On the interior, white was used when it was painted originally and light yellow was used in the mid 20th c.

We matched these colors to the Munsell Color System. The colors are described in the tables below and include a sample of each one. The full paint layer history on every sample is described in the attached laboratory data sheets.

In addition, we noticed a small amount of small, clear fibers in the 4th/5th layer of paint on sample 7, from the rafter in the west wing. Because the fibers had characteristics of asbestos, we analyzed them with the polarizing light microscope. However, our results are not entirely conclusive. The fiber bundles are short (approx 0.1 mm long) and have refractive indices slightly higher than 1.66, but they are not pleochroic. Their presence maybe insignificant since there is only a small amount of fibers in the paint. However, if it is important to know conclusively whether or not the fibers are asbestos (i.e. amosite), then I recommend you have the fibers in the brown paint layer examined in more detail by a certified asbestos analytical lab.

ORIGINAL 1920's EXTERIOR PAINT FINISHES				
Feature Painted	Paint Color, Type and Reflectance	Pigments Identified	Color Reference Values:	Color Sample
			Munsell	
Trim and Siding	Dark Brown Oil Low Sheen	Not Analyzed	5 YR 3/2	
Window Sashes	Light Gray Oil Low Sheen	Not Analyzed	N 8.5/	
Note:				

CA. 1950's EXTERIOR PAINT FINISHES				
Trim	Dark Green	Not Analyzed	10 G 3/4	
Siding	Dark Olive Brown	Not Analyzed	7.5 YR 3/2	
Window Sashes	Light Green	Not Analyzed	10 GY 7/4	
Note:				

INTERIOR PAINT FINISHES				
1920'S (refer to lab data sheets)	White		6.4 Y 9.3/0.6 (B. Moore: Dove White)	
1950'S (refer to lab data sheets)	Light Yellow		3.4 Y 9.2/1.6 (B. Moore: OC 105)	
Note:				

On our website, <http://welshcolor.com/matching.html>, we provide additional information on color matching new paint. If you have any follow-up questions or need additional color samples, please call me.

Sincerely,



Frank S. Welsh

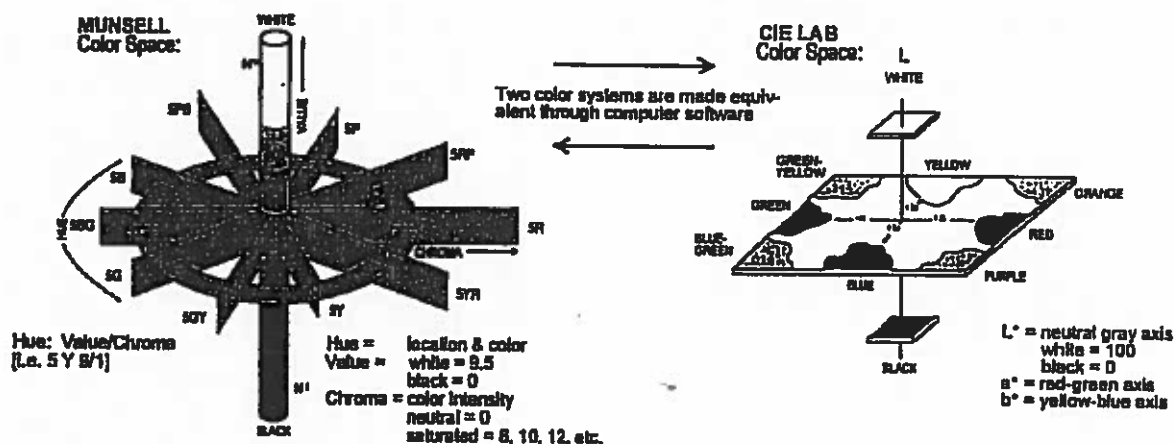
Enclosures: Lab Data Sheets

LABORATORY DATA

PROJECT	DATE OF ANALYSIS
LAKE GENERAL STORE	FALL: 2007
SPACES	ANALYST
EXTERIOR / INTERIOR	Frank S. Welsh

EQUIPMENT AND METHODOLOGY

- **Equipment**
 - Bausch & Lomb stereomicroscope (10 - 105x)
 - Nikon SKE polarized light microscope
 - Schott halogen fiber-optic illuminator (3200K)
- **Evaluation of samples for original color**
 - Architectural paints discolor as they age
 - Attempts made to find cleanest & brightest evidence
- **Color assessment and matching:**
 - Visual matching in tungsten light 3200K
 - Colors named according to traditional usage
 - Mathematical color system: CIE LAB (L^* a^* b^*)
 - Visual color system: Munsell
 - Portable spectrophotometer (0 - 45° geometry)
 - General Illumination: Tungsten (2400K)
 - PC for spectrophotometric & CIE to Munsell software
 - Requisite samples bleached with U.V. radiation to attempt reversal (20% - 50%) of yellowing of oil binder



DESCRIPTION OF PRESENTATION OF LABORATORY DATA FROM THE ANALYSIS

- The following pages contain all of the requisite information found on each sample gathered during the laboratory analysis of the historically significant coatings.
- The information on these pages is the data from which the conclusions have been drawn that are presented in the summary of finishes.
- The key to abbreviations used in the data sheets is found on the following page.
- Illustrations diagramming the locations from which the samples were taken are included in the Field Note - Sample Location sheets.

LABORATORY DATA

KEY TO THE ABBREVIATIONS USED IN THE LABORATORY DATA SHEETS

For Layer/Coat:

- P = prime or sealer coating
- I = intermediate or second prime
- Gr = ground or base coating for marbling or graining
- F = finish for final coating

For Color Name:

- W = white
- YW = yellowish white
- YG = yellowish gray
- GY = grayish yellow
- BL = blue
- GRN = green
- BRN = brown
- MRB = moderate reddish brown
- MOY = moderate orange yellow
- POY = pale orange yellow
- LT = light
- MED = medium
- VRY = very
- PL = pale
- GRY = gray or grayish
- BLK = black

For Munsell Value:

- This is the color reference value in the Munsell Color System.

For Type of coating:

- O = oil
- D = distemper or calcimine
- Wsh = whitewash
- Vrn = varnish
- Stn = stain
- Pb = lead content

For Gloss:

- Fl = flat finish
- L = low gloss
- S = semi-gloss
- G = gloss
- H = high-gloss

For Age:

- orig = original
- er = early
- md = middle
- lt = late
- c = century

EXTERIOR

WELSH COLOR & CONSERVATION, INC. © 9/12/07

INTERIOR

WELSH COLOR & CONSERVATION, INC. © 9/14/07 Page 5 Project: Lake General Stone

Eligible

CLASSIFIED STRUCTURE FIELD INVENTORY REPORT
(Attach 4"x5" B&W Photo)

REGION RMR PARK/AREA NAME Yellowstone NPS ORGANIZATION CODE NO. _____

STRUCTURE NAME Lake Area Hamilton Store STRUCTURE NO. 4020

ORDER OF SIGNIFICANCE: National ☐ State ☐ Local ☒

TREATMENT RECOMMENDED:

Est. Cost of Treatment Recommended: \$ _____

☐ Preservation Date of this Estimate: _____ 197__
☐ Restoration
☐ Reconstruction Est. Interim Cost (other than routine maintenance)
☐ Partial Reconstruction pending completion of Recommended Treatment:
☐ Adaptive Restoration \$ _____

LOCATION OF STRUCTURE: Lake area

UTM REFERENCE: A 1 2 5 4 7 7 5 0 4 9 3 3 2 0 0 CLASS VI LAND ACREAGE (if not part of a complex or district: _____ acres.
Zone East ing North ing
USGS Map: Canyon Village, Wyo.

STUDIES REQUIRED:

☐ Historical Studies Plan
☐ Historic Resource Study
☐ Historic Structure Report
☐ Historic Furnishing Study
☐ Historic Structure Preservation Guide

KEY:

N - not needed
P - programmed
C - completed
U - underway
R - required, but not yet scheduled

STRUCTURE: Type of, and composition: store, frame

Physical Description: This store is a large frame building with shingle siding.
The structure has a Greek Cross plan. Its central block,
which has eight sides, is surmounted by an octagonal roof.
Each of the structures wings are one story in height, compared
to the central blocks two, and have gable roofs. The south-
west wing of the store has a large exterior stone chimney,
and between it and the southeast wing is the main entrance.
This entrance is flanked on both sides by bay windows in
those wings. The interior of the store has open beam
ceilings.

Historical Data: It is not known at present who built the store or when it was
constructed with the records at hand. However, there is some
indirect information that provide some possible answers. It is
known that in 1916 that Charles A. Hamilton, founder of the
park's Hamilton Store, Inc., rented a store near the Lake Hotel
in 1916. That store had been operated by E. C. Waters, the owner
(continue on reverse if necessary)

PRESENT CONDITION: Excellent ☐ Good ☒ Fair ☐ Deteriorated ☐
Ruins ☐ Unaltered ☐ Altered ☒ Original Site ☒ Moved ☐

Report prepared by: James Muhn

James Muhn

August

1978

Entered on LCS
FEB 7 - 1952
LOCATION IN PARK Lake

YELL
LAKE AREA--CANYON VILLAGE
IIS-4020
DC:
BUILDING NAME Store
No. 4020

USED AS General Store
Owned by Hamilton Stores, Inc.
Operated by Hamilton Stores, Inc.
Maintained by Hamilton Stores, Inc.
Constructed by Hamilton Stores, Inc.

YEAR BUILT
DRAWING No. OCCUPANCY

ORIGINAL COST, \$
Present value, \$

NUMBER STORES One NUMBER ROOMS 6
Cu. Ft. 176,718 Sq. Ft., Basement
1st floor 5,356 2d floor
Other

CONSTRUCTION TYPE Frame on concrete foundations
Walls, exterior Shingle
Walls, interior Wainscoting
Floors Hardwood Roof Shingle

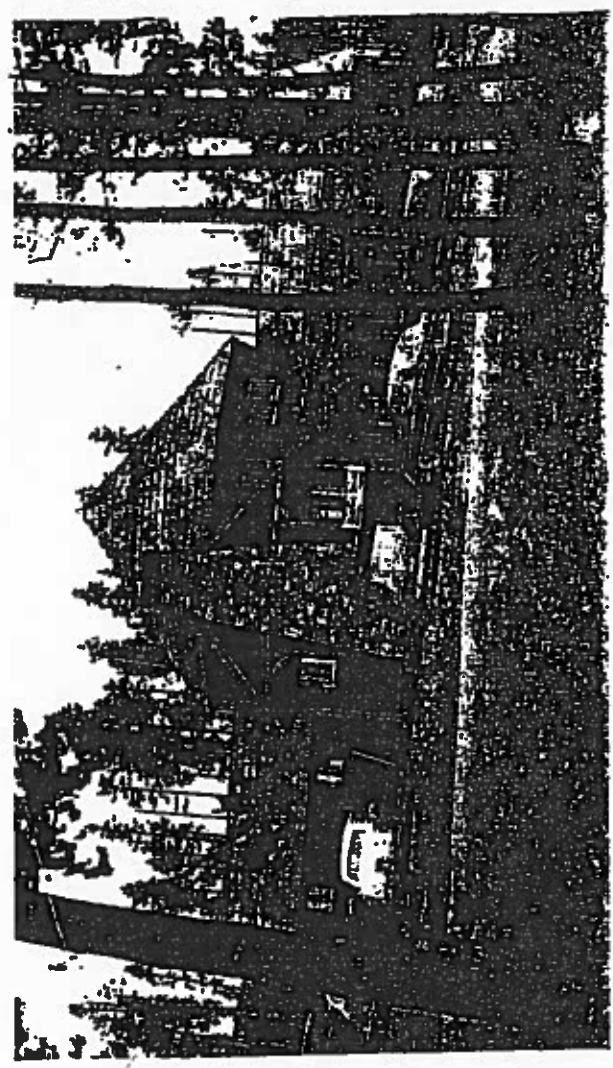
INTERIOR FINISH, Walls Painted
Floors Stained Ceilings Painted

UTILITIES, Water Yes Electric Yes
Sewer Yes Phone Yes

MECHANICAL EQUIPMENT:
Sanitary Fountain & lunch counter
Heating Fireplace Fuel Wood
Electric Lights H. W.

EXISTING CONDITION OF BUILDING:
Structural Good
Mechanical Good

FIRE PROTECTION:
Hydrant size Distance
Sprinklers



SKETCH PLAN
(Designate original and later additions, when constructed)

REMARKS:

Resource Name: HAMILTON STORES INC. GENERAL STORE
Resource Number: YELL HS-4020

Lake Historic District

Location: YELL, Teton County, WY

Photographer: HRA, 1996

View to: ~~FE~~

Location of Negatives: YELL NP Archives

Mammoth Hot Springs, WY

Photo/Roll No.: DH BW9 #9

Resource Name: HAMILTON STORES INC. GENERAL STORE
Resource Number: YELL HS-4020

Lake Historic District

Location: YELL, Teton County, WY

Photographer: HRA, 1996

View to: UP

Location of Negatives: YELL NP Archives

Mammoth Hot Springs, WY

Photo/Roll No.: DH BW9 #12

Resource Name: HAMILTON STORES INC. GENERAL STORE
Resource Number: YELL HS-4020

Lake Historic District

Location: YELL, Teton County, WY

Photographer: HRA, 1996

View to: UP

Location of Negatives: YELL NP Archives

Mammoth Hot Springs, WY

Photo/Roll No.: DH BW9 #13

Resource Name: HAMILTON STORES INC. GENERAL STORE

Resource Number: YELL HS-4020

Lake Historic District

Location: YELL, Teton County, WY

Photographer: HRA, 1996

View to: ~~FE~~

Location of Negatives: YELL NP Archives

Mammoth Hot Springs, WY

Photo/Roll No.: DH BW9 #10

50444 revised 3/81

CLASSIFIED STRUCTURE FIELD INVENTORY REPORT
(Attach 4" x 5" B & W Photo)

REGION: RMR PARK/AREA NAME: Yellowstone National Park PARK NUMBER: 1570
STRUCTURE NAME: Lake Hamilton Store STRUCTURE NUMBER: 4020
LOCATION OF STRUCTURE: Lake Concessions; Canyon Village, Wyoming, 15-min. USGS quadrangle

() NAT'L REGISTER: 0 date: MANAGEMENT CATEGORY: (A) (B) (C) (D)
(mm/dd/yy)
() NPS LEGAL INTEREST: NOP MGMT AGREEMENT: CC (

Check all of the following categories for which NPS has treatment responsibility:

Stabilization ☒ Cyclic maintenance ☒ Routine maintenance ☒ Approved ultimate treatment ☒

APPROVED ULTIMATE TREATMENT:

Preservation (PP)	Restoration (RR)	Reconstruction (CC)
Adaptive Preservation (AP)	Adaptive Restoration (AR)	Adaptive Reconstruction (AC)
Neglect (NG)	Remove (RM)	No Approved Treatment <u>(NO)</u>

Approval document: NO () Document date: (mm/dd/yy)

Estimated Treatment Costs:

Stabilization: \$ _____	date: _____	Level of Estimate: _____	Estimator: _____
Approved Treatment: \$ _____	date: _____	(A) (B) (C)	(Region) (DSC) (A&E) (
	(mm/dd/yy)		

DESCRIPTION:

() Period of Construction: HI Type of Structure: BU (

() Composition: WD Current Interior Use: OT; store (

If structure has been removed, how? () date: (mm/dd/yy)

Verbal description: The Lake Hamilton Store is a large frame building with walls of wood shingles. It rests upon a concrete foundation which is faced with random-coursed rubblestone. It has a central, two-story octagonal block from which four single-story, gable-roofed wings project. The southwest wing of the store has a large exterior stone chimney of native rubblestone which is battered towards the bottom. It is flanked by multi-light windows. Between this wing and the southeast wing is the main entrance. This entry features a full-light double door which is recessed and covered by a half-hipped roof. On either side of it, on the wings, are projecting bay window displays, each with its own half-hipped roof. A large cement patio extends from the front entry and contains wood benches. Other windows in the store are multi-light casement and fixed or are covered with wood shutters. The structure's condition is very good. Shingles on the roof and wall surfaces are regular and in good condition. Dimensional lumber rafters cut beneath the eave ends are also in good condition. The interior of the store features large open-beam ceilings and elaborate bronze chandeliers with colored glass panels, owls, and acorn motifs.

[CONTINUED]

Report prepared by: Historical Research Associates, Missoula, MT date: December 1983

CONTINUATION SHEET, LCS STRUCTURE 4020

The Lake Hamilton Store was constructed by C.A. Hamilton in 1921 and completed in 1922. This store replaced an earlier facility built by E.C. Waters ca. 1900, which was located adjacent to the Lake Hotel. E.C. Waters, owner of the Yellowstone Lake Boat Company, had several concessions next to the hotel which, in 1901, conflicted with the hotel's expansion plans. Hamilton took over the original store's lease in 1917. He built the present store, located some distance from the hotel but still easily accessible for hotel guests, just one year before major expansion and remodeling of the hotel in 1922-1923. Park records suggest that Hamilton's new store consisted of only the central part, the wings being added at later dates.¹

¹"History of Improvements at Yellowstone National Park" [by Newell F. Joyner], Yellowstone National Park Files: 101-02, "History -- Historic Structures," YNPLA; "Superintendent's Annual Report for Yellowstone National Park, 1921-1922," YNPLA; "The Chronology of Yellowstone National Park, 1806 to 1939" [by Chester A. Lindsley], unpublished manuscript, YNPLA.

The Lake Hamilton Store is a large frame building with walls of wood shingles. It rests upon a concrete foundation which is faced with random-coursed rubblestone. It has a central, two-story octagonal block from which four single-story, gable-roofed wings project. The southwest wing of the store has a large exterior stone chimney of native rubblestone which is battered towards the bottom. It is flanked by multi-light windows. Between this wing and the southeast wing is the main entrance. This entry features a full-light double door which is recessed and covered by a half-hipped roof. On either side of it, on the wings, are projecting bay window displays, each with its own half-hipped roof. A large cement patio extends from the front entry and contains wood benches. Other windows in the store are multi-light casement and fixed or are covered with wood shutters. The structure's condition is very good. Shingles on the roof and wall surfaces are regular and in good condition. Dimensional lumber rafters cut beneath the eave ends are also in good condition. The interior of the store features large open-beam ceilings and elaborate bronze chandeliers with colored glass panels, owls, and acorn motifs.

NATIONAL PARK SERVICE - HISTORIC STRUCTURE SURVEY FORM

1

Resource Name and No.: Hamilton Stores, Inc. Lake General Store/HS-4020

Smithsonian #: 48YE852

LCS#: 50606

National Register Status and Date: Determined Eligible-- SHPO 8/04/1994

1. **HISTORIC NAME:** Hamilton Stores, Inc. Lake General Store
2. **RESOURCE'S CURRENT PARK #:** HS-4020
3. **OTHER NAMES:** Lake Hamilton Store
4. **OTHER STRUCTURE NUMBERS:** N/A
5. **TYPE OF RESOURCE:** Building
6. **HISTORIC DISTRICT:** Lake Historic District
7. **MULTIPLE PROPERTY NAME:** Historic Resources in Yellowstone National Park
8. **PARK:** Yellowstone National Park **SUBUNIT:** Lake District
9. **LOCATION IN PARK:** The district is located in the southeast quarter of the park, on the northwest shore of Yellowstone Lake.
COUNTY: Teton **STATE:** Wyoming
10. **TOWNSHIP, RANGE, SECTION, AND ¼ ¼ SECTION:** Unsurveyed
11. **USGS MAP NUMBER AND NAME:** 44110-E4/Lake Quadrangle
DATE: 1986 **SCALE:** 1:24,000
12. **UTM REFERENCES (ZONE/EASTING/NORTHING):** 12/548016.879/4932940.44
GPS USED TO OBTAIN UTM DATA: Yes
13. **NPS ROAD AND TRAIL ROUTE NUMBER:** N/A
14. **CONSTRUCTION DATE:** 1922
DATE ESTIMATED OR DOCUMENTED: Documented
DATE SOURCE: Susan A. Tenney, Draft National Register of Historic Places Inventory-Nomination/DOE Form Historic Resources of Yellowstone National Park (Partial Inventory: Lake District - Excluding Fish Hatchery), National Park Service, Rocky Mountain Regional Office, Denver, Colorado, March, 1984.
15. **PEOPLE ASSOCIATED WITH CONSTRUCTION (ARCHITECT, ENGINEER, BUILDER) AND THEIR ASSOCIATION:** Hamilton Stores, Inc., Builder; Kirk, Architect.
16. **HAS RESOURCE BEEN MOVED:** No
DATE ESTIMATED OR DOCUMENTED: N/A
DATE SOURCE: N/A
17. **HAS RESOURCE BEEN MODIFIED:** Yes
Knotty pine porch removed 1951
18. **RESOURCE CONDITION:** Good
19. **CURRENT FUNCTIONS:** General Store
20. **HISTORIC FUNCTIONS:** General Store/cafe
21. **NPS OWNERSHIP:** N/A
OTHER FEDERAL OWNER: N/A
LOCAL OWNER: Hamilton Stores, Inc., fee simple.
22. **SETTING/LANDSCAPE DESCRIPTION:**
The Lake Historic District sits on the north shore of Lake Yellowstone near the confluence of Pelican Creek and the Yellowstone River; the Absaroka Mountain Range is to the east and the Grand Canyon of the Yellowstone is to the north. The district is bordered by the lake shore to the east and the Grand Loop highway to the west. Lake Village, comprised of the Lake Hotel complex, Hamilton Stores, Inc. buildings, and the Lake Lodge complex, is

NATIONAL PARK SERVICE - HISTORIC STRUCTURE SURVEY FORM

2

Resource Name and Number: Hamilton Stores, Inc. Lake General Store/HS-4020

situated on a spur road off the main highway between Fishing Bridge and Bridge Bay.

The Lake Hotel complex is located on a long, flat bluff at the southern end of the Lake Historic District, between the access road from the modern Grand Loop Road and portions of the original Grand Loop Road that paralleled the lakeshore. The old highway is now used as a service road between the hotel, Hamilton Store buildings, and Lake Lodge. The area between the hotel and the old highway is sandy and vegetated with lodgepole pine. The lodgepole forest encroaches upon the complex from the east, west, and north. Various native grasses, predominately tufted hairgrass, sedges, and cinquefoil, flourish in the open meadow in which the hotel buildings are situated. A small creek flows in a ravine to the west of the hotel. The hotel faces south, and provides a spectacular view of the lake and the surrounding mountains. The service buildings are located on the north side of the hotel, and are easily accessed by the spur road from the highway. A large parking area is located directly behind the hotel. The maintenance buildings are clustered to the west of the lot, the Hotel Annex is to the southeast of the parking area, and the cabin group, with its interior access roads, is located to the northeast.

The Hamilton Stores, Inc. buildings are located to the east of the hotel complex, on the same grassy bluff, and include a general store, service station, dormitory, root cellar, storage cabin, and comfort station. The service station, general store, and comfort station are situated in a linear pattern on the north side of the old Grand Loop Highway, and face Yellowstone Lake. The utility buildings are clustered behind (north of) the store around an asphalt parking area. The front of the Hamilton Store has

One-quarter mile to the north of Lake Hotel, Lake Lodge is situated on a grass and evergreen covered slope overlooking the northwest shore of the lake. The lower, level portions of the site feature native grasses and wild flowers; the site slopes up from the lodge on the north and west sides. These slopes are vegetated with mature, even-aged stands of lodgepole pine. The main north/south access road from the Lake Hotel cabin area bisects the grassy meadow between the front of the lodge and the lake shore. It continues north past the lodge and terminates in a loop road to the west and south providing access to the nine groupings of guest cabins. There is a large unpaved parking lot directly north of the lodge. At this point the gradient of the site increases so that the parking lot and the cabin groupings situated above it to the west are laid out on a series of stepped lots with the loop road as a boundary. The majority of guest cabins are placed in staggered rows adjacent to the interior access roads. There are indentations for parking at regular intervals along the access roads and on the west loop road. There are few trees within the lower groupings while the upper cabins are surrounded by mature trees.

The employee dormitories and service buildings are located to the rear (west) of the lodge. The Powerhouse is located closest to the lodge, and the Employee Pub/Linen building, the Personnel building and the Seagull Dormitory are located to the west of the Powerhouse. The larger Mallard Dormitory is set into the slope of the hill further west. The slopes on either side of these buildings are surrounded by grasses and trees while the walkways to and between them are unpaved and the circulation patterns are generally informal, following desire lines. There is a large open parking lot in front of the Mallard Dormitory that is also unpaved and unplanted.

The front of the general store is accessed via a relatively new set of concrete stairs and a handicapped ramp with a metal pipe railing. The building is separated from the Grand Loop Road by a concrete curb with an area of gravel between the curb and the concrete steps.

23. **DIMENSIONS:** 115'(L) 115'(W) 25'(H)
LAYOUT/SHAPE: Irregular
NUMBER OF BAYS: 8
NUMBER OF STORIES: 2½

24. **MATERIALS OF BUILDINGS:**
FOUNDATION: Stone

NATIONAL PARK SERVICE - HISTORIC STRUCTURE SURVEY FORM

3

Resource Name and Number: Hamilton Stores, Inc. Lake General Store/HS-4020

EXTERIOR WALLS: Wood, shingle

FRAMING SYSTEM: Wood

ROOFING: Wood, shingle

OTHER FEATURES: Stone

25. MATERIALS OF STRUCTURES, SITES, AND OBJECTS:

SUBSTRUCTURE: N/A

SUPERSTRUCTURE: N/A

26. ARCHITECTURAL CLASSIFICATION/STYLES:

NATIONAL REGISTER CATEGORY: Other

OTHER STYLES: Rustic

27. NARRATIVE DESCRIPTIONS:

EXTERIOR SUMMARY:

This 1½ to 2½-story frame building is constructed on a stone-faced concrete foundation. The walls are finished with wood shingles. The conical and gable roofs are finished with wood shingles. The main octagon plan has five wings. Windows are fixed sash.

EXTERIOR EXPANDED:

The wood-frame Hamilton General Store is constructed on a concrete foundation faced with stone and has stone rubble piers on the exterior. The plan is octagonal with rectangular wings. The main mass of the building is a two-and-a-half story octagon with a conical roof. Four major one-and-a-half story gable-roofed wings extend from the southeast, southwest, northeast, and northwest sides of the octagon. A smaller one story gable-roofed wing with a lean-to addition extends from the north side of the octagon.

The log superstructure of the store is exposed on the exterior of the buildings. The corners of every wing are supported with a log column on stone piers. Each braced column supports a purlin, with a beveled end, which supports the log trusses that are exposed at the cathedral ceiling of the store. The end of each wing features two more columns. These braced columns support the log beam that supports eleven artificial joist ends. These joists occur at the exterior only and do not penetrate the building.

The gable roofs of the wings are lower than the eaves of the main conical roof. Each gable roof has deep eaves and exposed rafter tails. The main conical roof has exposed log rafter ends. The roofs are finished with wood shingles of which every fifth course is doubled. An exterior stone chimney and vents penetrate the roofs. The walls are finished with wood shingles and corner boards. A water table demarcates the first floor level. Windows are fixed sash. Doors are wood panel with one light.

The south elevation is the facade of the store. At the south wall of the octagon is a projecting, one story, open porch. The hip roof with exposed rafter ends, is supported by two log columns. A pair of doors, centered at the porch, are the main access to the store. At each side of the porch is a bay window with a hip roof. The large three-light window at the front of each bay has a six-light transom. Each side window of the bays have a two-light transom. The south elevations of the southwest and southeast wings feature two four-light fixed windows. This main entry is accessed via a large three-sided concrete deck which extends between the southwest and southeast wings. Three concrete stairs and a concrete ramp, parallel to the southwest wing, access the deck. The second story of the south wall of the octagon features a pair of four-light fixed windows.

The end of the southeast wing features the exposed log structure. Centered between the two middle log columns is a set of three four-light fixed windows. The second story of the southeast wall of the octagon features a four-light fixed window at each side of the intersecting gable roof of the southeast wing.

NATIONAL PARK SERVICE - HISTORIC STRUCTURE SURVEY FORM

4

Resource Name and Number: Hamilton Stores, Inc. Lake General Store/HS-4020

The east elevation of the southeast wing features two four-light fixed windows symmetrically arranged. The east elevation of the octagon features three shuttered windows at the first story level. The second story features a pair of four-light fixed windows. The east elevation of the northeast wing features one shuttered window at the left.

The end of the northeast wing features the exposed log structure. A lean-to addition is located at the left and a loading dock at the right. A centered door accesses the delivery area of the building. A shuttered window is located at each side of the door. The second story of the northeast wall of the octagon features a four-light fixed window at each side of the intersecting gable roof of the northeast wing.

The north elevation of the northeast wing features two shuttered windows. The second story of the octagon features a pair of four-light fixed windows.

The smaller north wing features a concrete lean-to addition with a frame roof. All windows are shuttered at the north wing.

The north elevation of the northwest wing features two four-light windows. The end of the northwest wing features the exposed log structure and three centered four-light windows. The second story of the northwest wall of the octagon features a four-light fixed window at each side of the intersecting gable roof of the northwest wing.

The west elevation of the northwest wing features two four-light fixed windows symmetrically arranged. The west elevation of the octagon features three shuttered windows at the first story level. The second story features a pair of four-light fixed windows. The west elevation of the southwest wing features two four-light windows, one at the center, one at the left. At the right is a three panel door with four lights. The end of the southwest wing features the exposed log structure at either side of a stone chimney. The chimney, of stone rubble, tapers as it rises to a concrete cap. A four-light fixed window is located at each side of the chimney. The second story of the southwest wall of the octagon features a four-light fixed window at each side of the intersecting gable roof of the southwest wing.

INTERIOR EXPANDED:

Hamilton Stores, Inc. declined permission to access the interiors of its buildings for purposes of this inventory.

28. INTEGRITY QUALITIES

LOCATION: Y WORKMANSHIP: Y DESIGN: Y
FEELING: Y SETTING: Y ASSOCIATION: Y MATERIALS: Y

29. INTEGRITY STATEMENT:

The exterior of the Hamilton General Store retains its historic character and fabric. The building reflects a high degree of integrity and is an excellent representative of the significant period of its past.

30. ELIGIBLE UNDER CRITERIA (A, B, C, D): A,C

CRITERIA CONSIDERATIONS: N/A

CONTRIBUTING OR INDIVIDUAL: Individual

31. HISTORY/STATEMENT OF SIGNIFICANCE:

SUMMARY: This building is significant under Criterion A and C at the State Level for its association with the Historic Contexts: "Concessions in Yellowstone National Park 1871-1966" and "Architecture in the National Parks 1872-1966."

EXPANDED: Charles Hamilton began construction of his new store at Lake in 1919 with plans to open for the 1920 season. In September 1920, Superintendent Horace Albright inspected the store, which was about one-third complete. Albright's impressions of the store at that point were the following - he did not like the use of both logs and 2 x 10s as rafters. The central portion had log rafters and the wings used the cut timber. He thought it "looked badly." He also did not like the drop siding; he preferred the ship lap siding used on the William Nichols residence at Mammoth Hot Springs. He also mentioned that Hamilton had decided to add a chimney which had not

NATIONAL PARK SERVICE - HISTORIC STRUCTURE SURVEY FORM

5

Resource Name and Number: Hamilton Stores, Inc. Lake General Store/HS-4020

been on the approved plans for the building, however he had no problem with the addition. Albright also did not like the flat roof of the porch.

Albright consulted the NPS landscape architect, Charles Punchard, about the concerns plus the color of paint that should be used. Hamilton's architect, Mr. Kirk, wanted to paint the building a reddish brown color almost like that used on the Nichols home at Mammoth and the roof painted green. Mr. Hamilton spent part of 1922 "cleaning up" around his residence and store. He had the store's concrete foundation faced with stone and made plans for plantings around the store the following spring. Horace Albright liked the Lake store, but felt Hamilton had spent three times what he should have because of labor problems and his neglect to follow the plans and specifications of landscaping values which he had to redo. In 1938, Hamilton reshingled the roof and restained the exterior of his store and repainted the interior after installing new fountain equipment.

In 1951, the NPS architects suggested to Hamilton, who had requested permission to replace the knotty log porch elements with straight logs, that the most desirable solution was to remove the deteriorated logs, but not replace them with anything. However, if Hamilton wanted to maintain the open porch appearance than he could replace with straight logs. In addition to the porch work, Superintendent Rogers asked that all advertising signs be removed from the exterior except for the store sign. In 1954, Hamilton Stores' official Trevor Povah wanted to add a 4' canopy over the front door as he thought the "building looks pretty naked since the removal of the logs."

Source: Horace Albright, "Monthly Report for October, 1919."

"Report of Construction to Mr. D.R. Hull by Horace Albright, October 27, 1922." YNP Archives.

Horace Albright to Charles Punchard, 29 August 1920.

National Archives. RG 79. Entry 7, Yellowstone National Park -900.

Edmund Rogers, "Annual Report for 1940."

Edmund Rogers to Charles Hamilton, 17 July 1951. YNP Archives. Box: 079-63A-570, File: 2, Hamilton Stores. Bldgs. Equipment.

Trevor Povah to Edmund Rogers, 22 May 1954.

YNP Archives. Box: 079-067A-128, File: 3, C58.

32. **AREAS OF SIGNIFICANCE:** CONSERVATION, GOVERNMENT, ARCHITECTURE, COMMERCE
33. **LEVEL OF NATIONAL REGISTER SIGNIFICANCE:** State
34. **HISTORIC CONTEXT NAME:** Concessions in Yellowstone National Park, 1871-1966; "Architecture in the National Parks 1872-1966."
35. **REPRESENTATION IN OTHER SURVEYS:**
List of Classified Structures Inventory, 1976-77, National Park Service, Rocky Mountain Regional Office, Denver, Colorado

List of Classified Structures Inventory, 1983-84, Historical Research Associates, Inc.

36. **DOES STRUCTURE CONTAIN NATIONAL CATALOG OF MUSEUM OBJECTS:** No
37. **PRIMARY LOCATION OF ADDITIONAL DATA:**
SHPO:
OTHER STATE AGENCY:
FEDERAL AGENCY: Yellowstone National Park Archives Research Library
LOCAL GOVT:
UNIV:
OTHER: TW Services, Engineering Division; building/structure data base
NAME OF REPOSITORY:

38. **SURVEY PHOTOGRAPHS:**

NATIONAL PARK SERVICE - HISTORIC STRUCTURE SURVEY FORM

6

Resource Name and Number: Hamilton Stores, Inc. Lake General Store/HS-4020

PHOTOGRAPHER: D. Hartmans

DATE OF PHOTOGRAPH: 1996

NEGATIVE LOCATION: Yellowstone National Park Archives, Mammoth Hot Springs, Wyoming

ROLL & NEGATIVE #: DEBW-9 #3-13

39. OTHER MEDIA:

MEDIA ID #: TYPE OF MEDIA:

DATE OF MEDIA:

ARTIST NAME:

LOCATION OF MEDIA:

PHOTO ROLL:

FRAMES:

40. RESEARCH SOURCES/BIBLIOGRAPHY:

Yellowstone National Park Maintenance Files

Yellowstone National Park Research Library and Archives

TW Services Engineering Records

41. REPORT PREPARED BY:

ORGANIZATION: Historical Research Associates, Inc. DATE: 1999

ADDRESS: P.O. Box 7086

CITY: Missoula STATE: MT ZIP: 59807-7086

PHONE #: 406 721-1958

42. PROJECT TITLE: Survey and Evaluation of Historical Buildings in Yellowstone National Park.

43. ATTACHMENTS:

USGS QUAD MAP WITH SITE PLOT: X

ORIGINAL PHOTO (NO POLAROID): X

SITE MAP (INCLUDE SCALE AND NORTH ARROW): X

FLOOR PLAN: X

Lake Hamilton Store



Identification:

Preferred Structure Name: Lake Hamilton Store

Structure Number: HS-4020

Other Structure Name(s):
1. Lake Area General Store

Park: Yellowstone National Park

Park District: YELL South Unit

Historic District:
1. Lake District

Structure State: Wyoming

Structure County: Teton

Region: Intermountain

Cluster: Rocky Mountain

Administrative Unit: Yellowstone National Park

LCS ID: 050606

UTM:	Zone	Easting	Northing	Source	Datum
1.	12	548017	4932940	GPS-Differentially Corrected	NAD 27

Historical Significance:

National Register Status: Determined Eligible - SHPO

National Register Date: 08/04/1994

National
Historic
Landmark?:

No

Significance
Level:

State

Short
Significance
Description:

This building is significant at the state level under Criteria A and C at the state and local level for its architecture and its role in the developing tourist program of the National Park system.

Long
Significance
Description:

The Lake Historic District has a period of significance of 1889 - 1940s. The Lake District is significant at the state and local level under Criteria A for its role in the developing tourist program of the National Park system and under Criteria C for its architecture.

Park Service buildings in the district are historically significant under Criteria A for their association with the growing tourist business in the Lake area. These buildings also are historically significant under Criteria C as examples of Rustic architecture found in the national parks.

In 1891, the War Department built a log soldier station at the Lake Hotel site to manage the growing tourist activity in this area. The Park Service replaced this structure, now razed, in 1921 with a new ranger station having an attached community room. This unique combination of offices and communal facilities was the third construction of a chain of similar buildings in the Park. The Park Service constructed other buildings shortly after the Ranger Station, such as the Fire Cache, to accommodate the increased tourist presence in this region.

The Lake Hotel and Lodge and their numerous cabins and auxiliary buildings are historically significant under Criteria A for their role in Yellowstone's development of tourist accommodations. The distinctive architectures of the Colonial Revival Hotel and the Rustic Lodge with their associated cabins and other buildings are historically significant under Criteria C.

The Yellowstone Lake area early became a focus of fishing, boating and back country activities. An important element in the expansion of the tourist facilities in the Lake District was the Northern Pacific Railroad. The railroad operated a branch line that brought visitors into the Yellowstone area. At the time of the construction of the Lake Hotel from 1889 to 1891, William Wylie operated a tent camp for tourists at this site. After 1892, those touring the park would spend their fifth and last night in Yellowstone at the Lake Hotel. By 1904, the hotel facilities had expanded to accommodate 446 guests in 210 rooms. By 1916, park concessionaires were catering to an increasing number of automobile tourists visiting Yellowstone. An auto camp had been built at the Lake area by now. These motorists created a new demand for these specialized accommodations. In 1921, the Yellowstone Park Company expanded its operations by building the Lake Lodge as its new recreation lodge and dining room using the picturesque rustic style reminiscent of the 1903 Old Faithful Inn. After World War II, an increase in tourism at the Park resulted in a major expansion and improvement of the Hotel and Lodge facilities. In 1951, construction of 116 additional rustic cottages and the girls' dormitory took place as well as rearranging existing cabins and other improvements.

The Lake Historic District includes the following notable buildings and structures:

- the Old Boathouse (LCS #050625) - the NPS Boathouse (LCS #050605)
- the Lake Hotel (LCS #050815) - a Service Station (LCS #050607)
- the Lake Hamilton Store (LCS #050606) - an employee dormitory (LCS #050608)
- the Caretaker's Residence (LCS #050624) - the Lake Powerhouse (LCS #050603)
- Lake Ranger Station (LCS #010836) - the Lake Lodge (LCS #050609)
- the Lake Lodge Boiler House (LCS #050610) - a Linen Building (LCS #050611)
- a Laundry Building (LCS #050812) - a Barn (LCS #010639)

Immediately adjacent to the Lake Historic District is the Lake Fish Hatchery Historic District. The few buildings in this District sometimes incorrectly are included in the Lake District. There are numerous non-contributing buildings in the Lake District, especially in the Lake Lodge area, ranging from administrative buildings to guest cabins.

Construction Period:

Construction Period: Historic

Period:

Chronology:

	Physical Event	Begin Year	Begin Year AD/BC	End Year	End Year AD/BC	Designer	Designer Occupation
1.	Built	1922	AD			Hamilton Stores Inc.	Other
2.	Designed	1922	AD			Kirk	Architect
3.	Altered	1951	AD			Hamilton Stores, Inc.	

Function and Use:

Primary Function: Department Store (General Store)

Historic Function:

Function:

Primary Current Use: Department Store (General Store)

Current Use:

Structure Contains Museum Collections?: No

Structure Contains Museum Collections?:

Other Functions or Uses:

Other Functions or Uses:

Other Function(s) or Use(s)	Historic or Current
No records.	

Physical Description:

Structure Type: Building

Type:

Volume: 20,000 - 2,000,000 cubic feet

Square Feet: 5358

Material(s):

	Structural Component(s)	Material(s)
1.	Framing	Log
2.	Roof	Shingle
3.	Foundation	Concrete
4.	Walls	Shingle
5.	Framing	Wood

Short Physical Description: A 1½ to 2½-story, Rustic Style, octagonal building w/ 5 wings set on a stone-faced concrete foundation. The walls are finished with wood shingles and decorative logs. The conical and gable roofs are finished with wood shingles. Windows are fixed sash.

Long Physical Description: Dimensions: 115' (L) x 115' (W) x 25' (H) approximately. A 1½ to 2½-story, Rustic Style, octagonal

Description: building w/ 5 wings set on a stone-faced concrete foundation. The walls are finished with wood shingles and decorative logs. The conical and gable roofs are finished with wood shingles. Windows are fixed sash. The main mass of the building is a two-and-a-half story octagon with a conical roof. Four major one-and-a-half story gable-roofed wings extend from the southeast, southwest, northeast, and northwest sides of the octagon. A smaller one story gable-roofed wing with a lean-to addition extends from the north side of the octagon. The log superstructure of the store is exposed on the exterior of the buildings. The corners of every wing are supported with a log column on stone piers. The end of each wing features two more columns. The gable roofs of the wings are lower than the eaves of the main conical roof. Each gable roof has deep eaves and exposed rafter tails. The main conical roof has exposed log rafter ends. The roofs are finished with wood shingles. An exterior stone chimney and vents penetrate the roofs. The walls are finished with wood shingles and corner boards. A water table demarcates the first floor level. Doors are wood panel with one light.

The south elevation is the facade of the store. At the south wall of the octagon is a projecting, one story, open porch. The hip roof with exposed rafter ends, is supported by two log columns. A pair of doors, centered at the porch, are the main access to the store. The south elevations of the southwest and southeast wings feature two fixed windows. This main entry is accessed via a large concrete deck. Three concrete stairs and a concrete ramp, parallel to the southwest wing, access the deck. The second story of the south wall of the octagon features a pair of fixed windows. The end of the southeast wing features the exposed log structure. Centered between the two middle log columns is a set of three fixed windows. The second story of the southeast wall of the octagon features a fixed window at each side of the intersecting gable roof of the southeast wing.

The east elevation of the southeast wing features two fixed windows. The second story features a pair of fixed windows. The end of the northeast wing features the exposed log structure. A lean-to addition is located at the left and a loading dock at the right. A centered door accesses the delivery area of the building. The second story of the northeast wall of the octagon features a fixed window at each side of the intersecting gable roof of the northeast wing.

The north elevation of the northeast wing features two shuttered windows. The second story of the octagon features a pair of fixed windows. The smaller north wing features a concrete lean-to addition with a frame roof. The north elevation of the northwest wing features two windows. The end of the northwest wing features the exposed log structure and three centered windows. The second story of the northwest wall of the octagon features a fixed window at each side of the intersecting gable roof of the northwest wing.

The west elevation of the northwest wing features two fixed windows symmetrically arranged. The second story features a pair of fixed windows. The west elevation of the southwest wing features two windows, one at the center, one at the left. At the right is a three panel door. The end of the southwest wing features the exposed log structure at either side of a stone chimney. The chimney, of stone rubble, tapers as it rises to a concrete cap. A fixed window is located at each side of the chimney. The second story of the southwest wall of the octagon features a window at each side of the intersecting gable roof of the southwest wing.

Interior features were not available for this description.

Condition and Impacts:

Conditions:	Condition	Year Assessed
1.	Good	2002

Impact Level: Low

Primary Tenants/Occupants

Structure - Single Entry Report

Page 5 of 7

Impact:

Other Impacts:

Other Impact Type

1. Weather
2. Structural Deterioration
3. Volcanic/Earthquake Activity

Management - Legal:

Legal Interest: Fee Simple Reservation

Fee Simple 12/31/2018

Reservation

Expiration

Date:

Management Concession Contract/Permit

Agreement:

Management 12/31/2018

Agreement

Expiration

Date:

Management - Category:

Management Should Be Preserved and Maintained

Category:

Management 09/28/2002

Category Date:

Management - Treatment:

Ultimate
Treatment:

Structure Ultimate Treatment (UT)	UT Document	UT Document Date	UT Responsibility	Was UT Approved?	Was UT Completed?	UT Completion Date
1. Preservation	Resource Management Plan	03/30/1995	Other	Yes	No	

UT Estimate Level	UT Estimator	UT Cost Estimate	UT Cost Estimate Date	UT Cost Actual
1. Similar Facilities	Support Office	354000	08/08/2002	

Interim Other

Treatment

Responsibility:

Interim 0

Treatment

Cost:

Interim 06/06/2002

Treatment

Cost Estimate

Structure - Single Entry Report

Page 6 of 7

Date:

Routine Other

Maintenance

Responsibility:

Cyclic Other

Maintenance

Responsibility:

Management - Description:

Short In 1951, the knotty pine porch was removed by Hamilton Stores, Inc.

Management

Text

Documentation:

References:

	Source	Reference Number	Other Information	Sequence
1.	Other	TW Services Engineering Records		1
2.	Other	1976 List of Classified Structures Inventory		2
3.	Other	Smithsonian #48YEB52		3
4.	Other	1983 List of Classified Structures Inventory		4
5.	Other	1997 HRA YELL LCS Survey		5
6.	Other	1952 NPS Building Survey		6
7.	Other	YELL Maintenance Files		7
8.	Other	National Register Lake District Nomination	This nomination was not formally submitted.	8
9.	Other	YELL Research Library and Archives		9
10.	Other	SHPO Determination of Eligibility, Aug 4, 1994		10

Documentation Level: Fair

Level:

Last Updated By: Hanson, Chuck


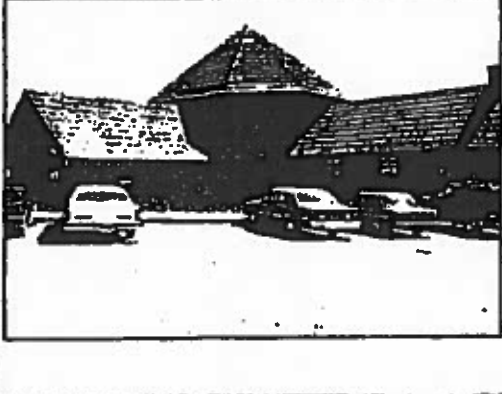
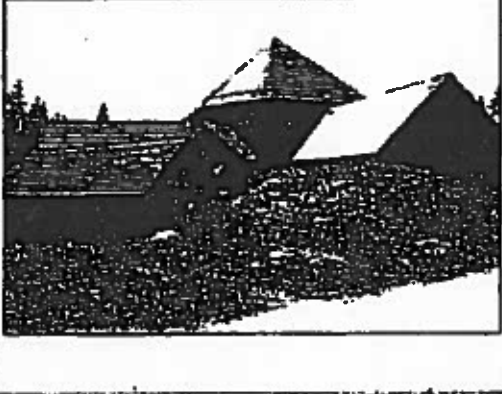
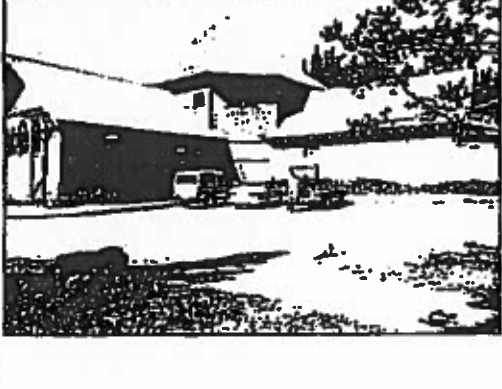
By:

Last Updated: 02/12/2003 12:41pm

Graphics:

Graphics:

	Graphic	Caption	Graphic Date/Year.	Sequence
1.		HS-4020, Lake General Store, View to North	June 1996	1

				
2.		HS-4020, Lake General Store, View to East	June 1996	2
3.		HS-4020, Lake General Store, View to SE	June 1996	3
4.		HS-4020, Lake General Store, View to West	June 1996	4

Certified By:

Certified By:

	Month	Year
1.	October	2002