

MAMMOTH HOT SPRINGS HOTEL

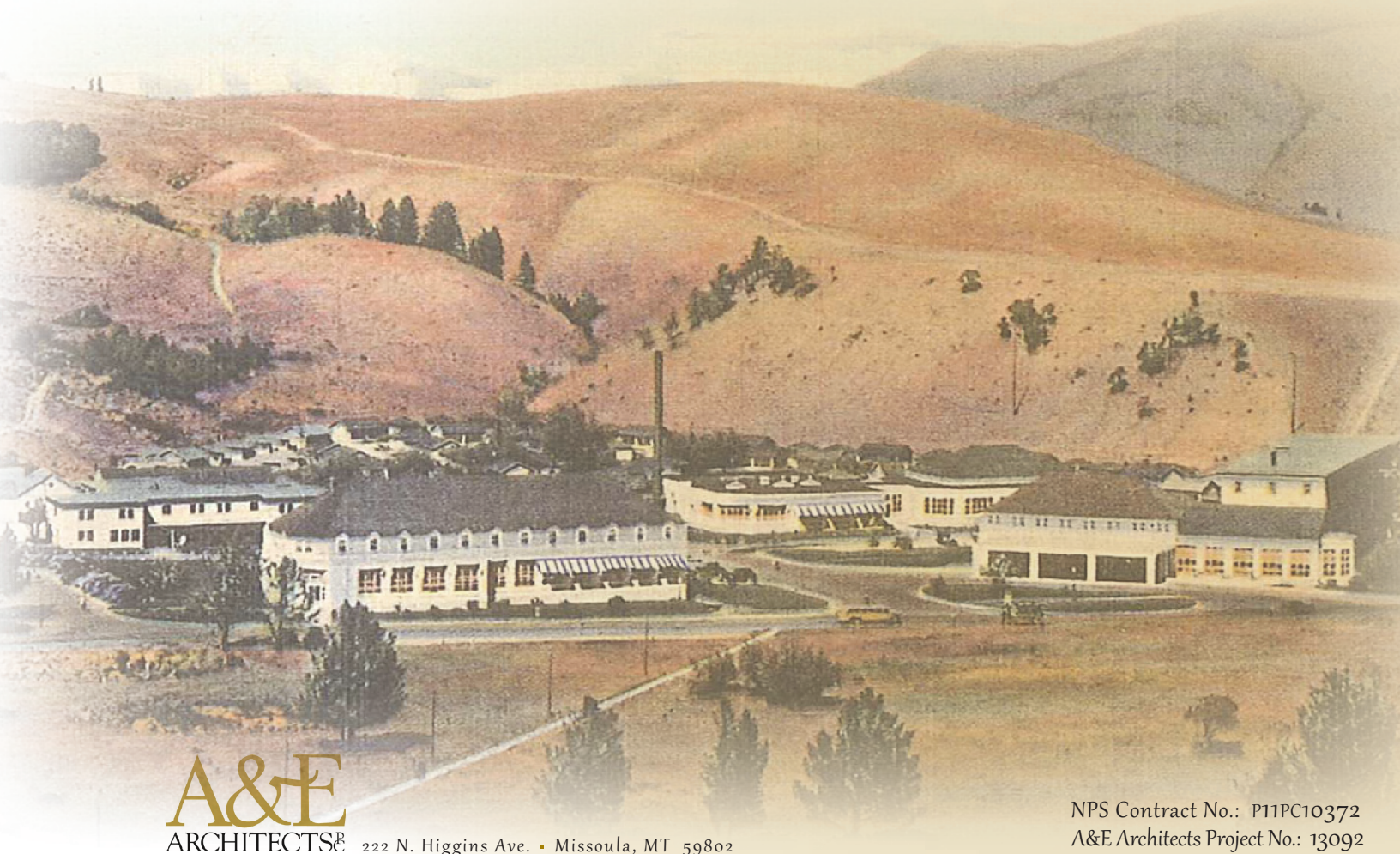
Historic Structures Report

Yellowstone National Park

March, 2015



NATIONAL PARK SERVICE
YELLOWSTONE NATIONAL PARK
Mammoth Hot Springs, WY



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MAMMOTH HOT SPRINGS HOTEL

HISTORIC STRUCTURE REPORT

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EXECUTIVE SUMMARY

This Historic Structure Report (HSR) provides historical and architectural information pertinent to the Mammoth Hot Springs Hotel. Located at Mammoth Hot Springs, the administrative headquarters for Yellowstone National Park, the first iteration of this Hotel was built by the Yellowstone Park Improvement Company (Figure E1). However, the current appearance of the hotel building dates to the mid-1930s reconstruction of the entire hotel complex at Mammoth Hot Springs. Between 1936 and 1938, the majority of the buildings associated with the then-existing hotel were razed to make room for a new complex of Art Moderne-style buildings designed for the site by Robert Reamer.

The purpose of this report is to identify the significant character-defining architectural features of the Mammoth Hot Springs Hotel and to provide general guidance for treatment. *Part 1A* provides general contextual information pertinent to the Mammoth Hot Springs Hotel, while *Part 1B* contains information about the development and use of the current hotel site and the hotel building. *Part 1C* documents the existing appearance and condition of the hotel, and enumerates its character-defining architectural features.

Part 2, Treatment and Use provides a recommendation for an appropriate level of preservation treatment for the building, which is listed as a contributing building in the Mammoth Hot Springs Historic District. This section of the HSR includes actions designed to preserve the character-defining features of the building and achieve the ultimate treatment. Also included in this section is a “Basis of Design” report with Schematic Design for the repurposing and rehabilitation of the hotel.

DJ&A Engineers was contracted to complete the first phase of a multi-phase project that will eventually result in the seismic stabilization of the Mammoth Hot Springs Hotel in Yellowstone National Park. In support of this project, DJ&A was tasked with reviewing and updating the 2010 Condition Assessment reports and provide an Historic Structures Report. DJ&A teamed with A&E Architects and other sub-consultants to perform those tasks associated with Phase 1 of this project. James R. McDonald of A&E Architects, along with staff, conducted the Condition Assessment of the hotel in the summer and fall of 2014. McDonald documented the building's significant architectural elements, identified areas of deterioration, and formulated the preservation treatment recommendations. Beaudette Consulting Engineers performed the structural assessment that informed some of the treatment recommendations. Associated Construction Engineering completed an analysis of the mechanical, electrical, plumbing, and fire suppression systems. Janene Caywood, CRCS, prepared the historical data sections of this document. Caywood conducted research in the Yellowstone Park Archives, Library, and Museum Collections (all located in the Yellowstone Heritage and Research Center in Gardiner, Montana). She also consulted secondary references, including Mary Shivers Culpin's *A History of Concession Development in Yellowstone National Park, 1872-1966*, which provided information regarding the history of the Yellowstone Park Company.¹ In addition, Ruth Quinn's *Weaver of Dreams: the Life and Architecture of Robert C. Reamer*, provided background information regarding Robert Reamer's body of work for the Yellowstone Park Hotel Company.²

Major Findings: Mammoth Hot Springs Hotel represents one of a complex of Art Moderne-style buildings designed in 1936 by Robert Reamer to transform the then-existing Mammoth Hot Springs Hotel into a “lodge style” facility. This conversion was consistent with National Park Service policy, which promoted the construction

¹ Mary Shivers Culpin, 2003, *A History of Concession Development in Yellowstone National Park, 1872-1966*. National Park Service, Yellowstone Center for Resources, Yellowstone National Park, Wyoming, Document No. YCR-CR-2003-01.

² Ruth Quinn, 2004, *Weaver of Dreams, The Life and Architecture of Robert C. Reamer*. Gardiner, Montana, Leslie and Ruth Quinn Publishers.

of facilities that appealed to the majority of park visitors, who by that time were accessing the parks in their own automobiles.

The hotel building consists of two structural components; the four-story “Guest Wing” built in 1913 as an addition to the old hotel, and the two-story “Lounge Building,” designed in 1936 and constructed in 1937. As originally designed, the 1913 wing contained 124 guest rooms. Subsequent remodeling has resulted in the conversion of some guest rooms into offices for concession employees. The lounge building originally contained two primary interior spaces: a lobby with a registration desk to accommodate guests checking into both the cottages and the hotel rooms, and the lounge proper. Besides the reception area, the lobby contained men’s and women’s restrooms, a porter’s room, and a telegraph office. The lounge, now known as the “Map Room,” originally was intended for the exclusive use of the hotel guests; those staying in the cottages were supposed to use the services provided in the recreation building behind the lounge.

The current conditions that influenced the treatment recommendations in this report include the fact that neither of the hotel’s two components (the 1913 guest wing and the 1937 Lounge Building), meet modern seismic standards; both components require retrofitting. Secondly, some of the original intended uses of space within the Lounge Building have been usurped by other uses. For example, the lounge (Map Room) currently accommodates a variety of NPS administrative uses (meeting, conferences, etc.) that require that the room be closed to guests. This is exacerbated by the fact that the Recreation Hall, originally intended for use by cottage guests, is now used exclusively by concessions staff. While both hotel and cottage guests are welcome to use the lounge / Map Room, they are often prevented from doing so when the room is reserved for other uses. Similarly, the office space in the second floor of the Lounge Building is not configured to meet current concession and administrative needs. By moving concession staff to the currently vacant Haynes Photo Shop, and reconfiguring the existing second-floor office space to accommodate large meetings, guests will once again be able to enjoy the lounge / Map Room.

Other issues include the fact that gift shop operations have gradually expanded into the lobby, which in turn diminishes the space for guests checking in or out of the hotel. Also, the hotel is now open during the winter months, and the concessioner offers ski rentals. This rental facility currently is housed in a trailer moved into the site during the rental season. As currently configured, the lobby portion of the Lounge Building does not have sufficient space to accommodate the gift shop and seasonal ski rental. For these reasons, the rehabilitation treatment includes the construction of a two-story, architecturally compatible addition to the west side of the Lounge Building. A one-story addition will be added to the rear (north) wall, to accommodate a new, more formal entrance for the guests, the majority of whom enter the building from the rear parking area. The rear addition will not be visible from the building’s façade.

The year-around use of the hotel and the opportunities to use the hotel for meetings requires that the building be made comfortable for the visitor. The heating and ventilation systems will be upgraded to provide a more even heat in the building. Insulation will be added to the walls and ceilings, and windows will be replaced to meet energy considerations. All efforts will be made to upgrade the mechanical and electrical systems to save on energy and potentially to meet LEED requirements. All of this will not only provide a quality hotel for the visitor experience in the park, but will also preserve this historically significant building.

Administrative Data

Common Name: Mammoth Hot Springs Hotel

Historic Name: National Hotel (1893- 1904); Mammoth Hotel (1904-1936); Mammoth Springs Hotel and Cottages (1939-1965); Mammoth Motor Inn (1966-1977)

Smithsonian Number: 48YE486

Historic Structure Number: HS-2025

LCS Number: 10936

FMSS Number: 3830

Locational Data: USGS Mammoth 1986 Quadrangle (unsurveyed)

UTM point references: Zone 12, 523530 m E; 498365 m N (NAD 83)

Proposed Level of Preservation Treatment: The proposed level of preservation treatment for the Mammoth Hot Springs Hotel is *rehabilitation*, which is defined as “as the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values.”³

Related Studies: Historic Structures Report: Mammoth Hot Springs Hotel, Yellowstone National Park, November 1995⁴; National Register of Historic Places registration form for the Mammoth Hot Springs Historic District, 2000; List of Classified Structures, updated 2008.

Date of listing in the National Register: The Mammoth Hot Springs Historic District (NRIS Number 02000257) was listed in the National Register of Historic Places on March 30, 2002.

Period and level of significance: The period of significance identified for the Mammoth Hot Springs Historic District is 1891 to 1948. The district is listed at the state level of significance.

National Register Criteria and Areas of Significance: The Mammoth Hot Springs Historic District is listed under National Register Criteria A and C. Areas of significance include: Entertainment/Recreation, Architecture, Military, and Conservation.

National Register Statement of Significance:

The Mammoth Hot Springs Historic District has statewide significance as the administrative and concession headquarters of the largest national park in Wyoming. The district is significant under Criterion A for its historical association with the development of Yellowstone National Park, and more specifically, with the development of administrative and concession policies in Yellowstone and the national park system. The district's location, near one of the major natural curiosities in the park, the Mammoth Hot Springs Terraces, and at the juncture of the first entrance road to the park, resulted in its selection as the site of the first administrative headquarters and the site of the first concessions in the first national park in the United States. The first hotels in Yellowstone were located at Mammoth Hot Springs, as well as the first retail store, photograph shop, and filling station, the successors of which still operate within the district. Yellowstone Park historian, Aubrey Haines, called mammoth “the most important place name related to the Park’s concession business.” The army era in the national parks is also associated with the district, which includes Fort Yellowstone, the best-preserved post representing the early military efforts to protect the nation’s natural resources. (Fort Yellowstone has been separately nominated as a National Historic Landmark district). The

³ Director’s Order 28 (NPS-28) Cultural Resource Management Guideline, Appendix A: Glossary, NPS Office of Policy (http://www.nps.gov/online_books/nps28/28appena.htm, accessed 10/12/2014).

⁴ James R. McDonald Architects *Historic Structures Report: Mammoth Hot Springs Hotel, Yellowstone National Park*, Report prepared for TW Recreational Services and Yellowstone National Park, Mammoth Hot Springs, Wyoming, November 1995. This report covered the entire hotel complex at Mammoth, not just the hotel building.

district is also significant for its association with early history of the National Park Service, reflecting the influence of that agency on park development in areas, such as preserving natural features and scenic resources, responding to the popularity of the automobile, creating museums and educational programs, and incorporating master plans in park design. The district is also associated with the history of New Deal era public works programs, having benefitted from several projects that provided funding and manpower for improvements and new construction.

Mammoth Hot Springs is also significant under Criterion C for its architecture. Fort Yellowstone, within the district, reflects the layout and architecture of a typical western army fort of the late nineteenth century, and is remarkable for its level of integrity, the masonry displayed in its native sandstone buildings, and the substantial quality of its construction. The buildings of the military period are representative of the work of the United States Quartermaster Corps and Reed and Stem. Buildings erected after the military era in the administrative area of the district are significant for their representation of the work of architects of the National Park Service, and the landscape of the district reflects the influence of the agency's master plans and the efforts of its landscape architects. Government buildings of the post-military era include representative examples of the French Renaissance and English Tudor style architecture. The concession area buildings are notable for their reflection of the evolution of park commercial architecture from the late nineteenth through the mid-twentieth centuries. Included with the district are concession buildings which are excellent representatives of Colonial Revival, Rustic, Prairie, and Art Moderne styles. The work of architects hired by concessioners, including Robert C. Reamer and Fred Wilson, is also represented in the district.⁵

⁵ R. Laurie and Thomas Simmons, "National Register of Historic Places Nomination Form Mammoth Hot Springs Historic District," 2000, Section 8 pages 1 and 2.



FIGURE E1
EXISTING LOCATION MAP

Mammoth Hot Springs Hotel

Mammoth - Yellowstone National Park



PART 1 - DEVELOPMENTAL HISTORY

A. HISTORICAL BACKGROUND AND CONTEXT

The Beginning of Concession Development in Yellowstone National Park

Mammoth Hot Springs was one of the first areas within Yellowstone National Park to be developed by private operators. In 1871, a year before the signing of the Organic Act that created the park, entrepreneurs Harry Horr and James McCartney, built a small log ‘hotel’ at Mammoth Hot Springs.⁶ Immediately after the signing of the act, the newly formed Department of the Interior began receiving requests for hotel leases upon which to develop tourist facilities within the park. While acknowledging the need to open the park to visitors, the Secretary of the Interior was reluctant to issue leases for any purpose, choosing instead to wait until Congress should appropriate funds to manage the park. In part because of this delay, until the early 1880s, McCartney’s Hotel was one of only two tourist hotels inside the park boundary—the other being Marshall’s Hotel in Lower Geyser Basin.

In 1882, however, a group of wealthy businessmen applied to the Department of the Interior for a lease that would allow them to build a hotel in the park, to operate one or more steamboats on Yellowstone Lake, and to establish stage lines and livery accommodations to connect points of interest inside the park with all railroads and highways extending to the park boundary. The company’s three principals, Carroll Hobart and Henry Douglas, both of Dakota Territory, and Rufus Hatch of New York City, were all associated in some capacity with the Northern Pacific Railroad Company. Early in 1883, the railroad company began construction of a branch line from Livingston, Montana, to the park’s north entrance at Gardiner, Montana. Tourists would require lodging, and the investors in the improvement company proposed to capitalize on the new tourism market by building hotel accommodations inside the park. Minnesota Senator, William Windom, transmitted the proposal to the department personally. Because of this influence, and over the objections of then-Park Superintendent, Patrick H. Conger, the department negotiated a lease with the consortium. In 1882, the newly established Yellowstone Park Improvement Company (YPIC) received a lease from the Department of the Interior to build hotels at several locations inside the park boundary.

By the winter of 1882/1883, the YPIC had begun construction of the National Hotel at Mammoth Hot Springs. The company hired architect, L. F. Buffington of St. Paul, Minnesota to design the turreted, Queen Ann-style building.⁷ Located between Fort Yellowstone on the west and the Mammoth Hot Springs terraces on the east, the main portion of the hotel opened to receive visitors on July 30, 1883.⁸ However, just two years later, the YPIC was bankrupt, and its assets taken over by the newly formed Yellowstone Park Association (YPA)—the primary shareholders of which also happened to be heavy investors in the Northern Pacific Railroad Company. Under protest from the YPIC attorneys, the YPA acquired the government leases granted to the improvement company. The YPA completed the hotel at Mammoth (Figure H-1), and opened temporary tent-style lunch stations at several locations within the park.

⁶ This log building was located in Clematis Gulch, just north of the Mammoth terraces.

⁷ Mary Schrivers Culpin, *For the Benefit and Enjoyment of the People: A History of Concession Development in Yellowstone National Park, 1872-1966*, (Yellowstone National Park: Yellowstone Center for Resources, 2003), p. 12.

⁸ Lee H. Whittlesey, *‘This Modern Saratoga of the Wilderness’: A History of Mammoth Hot Springs and the Village of Mammoth in Yellowstone National Park*, Unpublished National Park Service manuscript, 2010-2014), pp 133-134. Manuscript available at Yellowstone Center for Resources, Yellowstone National Park.



Figure H-1. The façade of the Mammoth Hotel (originally named the National Hotel) as it appeared in 1901 (Photo No. H-4129, Haynes Foundation Collection, Montana Historical Society, Helena, Montana).

Despite the growing popularity of the park, the hotel concession continued to struggle financially. Besides its hotel at Mammoth Hot Springs, the YPA operated the hotel at Lake, the Fountain Hotel in Lower Geyser Basin (completed the same year as Lake Hotel), and the Upper Geyser Basin Hotel (also known as Hobart's Hotel) built by the Yellowstone Park Improvement Company on the site of the present day Old Faithful Inn. The Department of the Interior considered the Upper Geyser Basin Hotel inadequate, and wanted the YPA to replace it with a new facility.

Although the YPA went as far as hiring an architect to draft the plans for a new hotel in Upper Geyser Basin, the financial footing of the company was uncertain, and it could not proceed with the construction. In order to continue its influence over hotel development and operation in the park, in 1898, the Northern Pacific Railroad, acting through its subsidiary, the Northwest Improvement Company, purchased a controlling interest in the YPA. With control of the YPA in hand, the railroad looked for an appropriate purchaser, which it found in E. W. Bach, Silas Huntley, and Harry W. Child, the owners of the Yellowstone Park Transportation Company, who had held and profitably operated the concession for transportation services in the park since 1891. In 1901, the Northwest Improvement Company sold its share in the YPA to the Yellowstone Park Transportation Company principals, who continued to operate the hotel concession under the name of the YPA. The same year, Silas Huntley died, leaving Harry W. Child to preside over both the transportation company and their newly acquired hotel concession.

One of Child's early decisions as YPA president was the 1903 hiring of a young California-based architect, Robert C. Reamer, to work in Yellowstone. Reamer had been recommended to Child by his former employer, Elisha S. Babcock. Reamer worked on projects for Babcock's Coronado Beach Company in San Diego from the mid 1890s through 1902, during which time he was responsible for alterations to the Del Coronado Hotel, as well as the design of new buildings in the resort complex. Babcock encouraged Reamer to accept a

position with Child, indicating that the association would likely result in other profitable connections with the Northern Pacific Railroad.⁹ Indeed, Reamer's 1903 foray into Yellowstone National Park marked the beginning of a 35-year relationship between the architect and the YPA and its successor companies [the Yellowstone Park Hotel Company (YPHC) and the Yellowstone Park Company (YPC), which would eventually hold the concession to all of the park's hotels, lodges, and transportation services.¹⁰ Although the company did occasionally employ other architects for design work in Yellowstone, its president, Harry Child, and his successor, W. M. "Billy" Nichols, hired Reamer to design virtually all of the major additions and alterations to the park's hotels until Reamer's death in 1938.

In 1906, Harry Child asked Reamer to prepare at least two conceptual designs for a new hotel at Mammoth—to replace the old National Hotel that the YPA had inherited from the YPIC. However, the company was also considering upgrades to its other facilities, including a major hotel construction project at Canyon. Perhaps because of these reasons, neither of Reamer's proposals for a new building at Mammoth Hot Springs progressed beyond the conceptual design phase.¹¹ In 1913, however, Reamer did preside over the remodeling of the Mammoth Hotel, during which the top floor of the building was removed and a new flat roof installed (Figure H-2). Also part of the remodel was the construction of a new four-story wing, attached to the east end of the old hotel. The hotel company built the new wing for the Mammoth Hotel with day labor and without the benefit of construction drawings. According to W. M. Nichols, President of the YPHC, "Reamer does much better to build as he goes along rather than to draw up a set of specifications and be tied down to them".¹² No construction drawings for the remodel of the old Mammoth Hotel have been found, indicating that Reamer may have followed that procedure for the guest wing component of the 1913 work.

⁹ Quinn, *Weaver of Dreams*, pp 29-32.

¹⁰ In 1936, the Yellowstone Park Hotel Company, Yellowstone Park Lodge Company, and Yellowstone Park Transportation Company, and three other small companies, merged to form the Yellowstone Park Company, with W. M. Nichols serving as President and Vernon Goodwin serving as Vice President. Culpin, *For the Benefit and Enjoyment of the People*, p. 129.

¹¹ Quinn, *Weaver of Dreams*, p. 60.

¹² W. M. Nichols to Lieut. Col. L. M. Brett, Superintendent Yellowstone National Park, April 18, 1914. Letter on file at Rocky Mountain Regional Office, National Park Service, Denver Colorado.



Figure H-2. Photograph of the remodeled Mammoth Hotel taken in 1914, after the Reamer-designed remodel. The new wing is located at the far right of the photo. (Photo No. H-6058, Haynes Foundation Collection, Montana Historical Society, Helena, Montana).

The Establishment of the National Park Service and the Beginning of Comprehensive Planning Efforts

The creation of the National Park Service in August of 1916 brought sweeping changes to park concessions throughout the national park system. The agency's first director, Stephen T. Mather, and his assistant, Horace Albright, conducted an inspection of the national parks during the summer of 1916. Recommendations for Yellowstone resulting from this tour included the consolidation of similar concession services under separate companies. The Yellowstone Park Hotel Company would continue to operate the park's hotels, while transportation and camp ground services (both previously provided by several different operators) would be consolidated under the Yellowstone Park Transportation Company and Yellowstone Park Camping Company, respectively.¹³

Besides the reorganization of concession businesses, the new National Park Service brought a "concerted, businesslike approach to the operation of the national park system."¹⁴ Included in the new approach was the need for planned development of both concession and administrative facilities. In 1918, Secretary of the Interior, Franklin Lane, issued a statement establishing that landscape preservation and harmonization would guide all park development and use. To that end, in 1918 the service hired its first landscape architects, or "landscape engineers," Charles Punchard, Daniel Hull, and Thomas Vint. The men of the Landscape Division were charged with locating and designing park roads, with designing improvements built by the park service, and with reviewing the plans proposed by the concessioners.¹⁵ Working with park service employees, the

¹³ Culpin, *"For the Benefit and Enjoyment of the People,"* p. 60.

¹⁴ Ibid. p. 61.

Landscape Division was responsible for the master plans developed for each of the national parks beginning in the late 1920s.

In 1919, Horace Albright returned to Yellowstone National Park as its first civilian superintendent. Albright supervised the park's concessions operations closely, including Harry Child's two companies, the Yellowstone Park Hotel Company and the Yellowstone Park Transportation Company. Prior to the establishment of the National Park Service, the concessioner's leases had included a provision that required approval of new construction by the Secretary of the Interior. However, these approvals were often sought after the fact. With its new cadre of landscape architects and engineers, the National Park Service was determined to ensure that development did not destroy the natural features of the parks. Gone were the days of concessioner's architects building as they go. Henceforth, the agency asserted its right to approve general development plans (including the siting of new buildings), construction drawings for new buildings, and major additions to existing buildings, as well as grounds improvement work such as landscaping and the placement of roads.

By the end of the 1920 season, Albright had assessed the facilities and operations of the hotel company and made recommendations for improvements and additions to most of its hotel buildings, including the hotels at Mammoth, Old Faithful, Lake, and Canyon. For Mammoth, he recommended, "... the (hotel) company needed to enlarge the Mammoth Hotel dining room, more rooms added with some baths, and the hotel should be painted."¹⁶

Over the next decade, Child complied with most of Albright's recommendations, beginning with an addition to the Lake Hotel. In 1922, he hired Reamer to design the addition. In 1927, the hotel company proceeded with the construction of another new wing at Old Faithful Inn (also designed by Reamer), which was finished just prior to the 1929 Wall Street crash and the beginning of the Great Depression. During the first half of the 1930s, park visitation declined dramatically, with the most substantial drop seen in rail passengers. As rail passengers constituted the majority of hotel clientele, the hotel company suffered the greatest losses. During the 1933 season, only two of the hotel company's facilities, Old Faithful Inn and Canyon Hotel, opened. The improvements to Mammoth Hotel recommended by Albright in 1920 would not occur until the mid 1930s, by which time the agency had adopted a different approach to providing lodging for park visitors.

Effects of the Great Depression on Park Concessioners

One of the nation-wide trends recognized by both National Park Service officials and by the major park concessioners during the depression years, was the preference of park visitors for lodge-style accommodations, i.e., facilities where guests stayed in individual cabins (some equipped with cooking facilities), oriented around a main lodge containing a dining facility or cafeteria, and space for leisure activities. Yellowstone already possessed four such complexes, Old Faithful Lodge, Lake Lodge, Roosevelt Lodge, and Mammoth Lodge—all operated by the Yellowstone Lodge and Camps Company under the same ownership as the hotel and transportation companies. In general, these lodge-type facilities had fared better financially during the hardest years of the depression.

In 1934, Thomas Vint, Chief National Park Service Architect, suggested that the Mammoth Lodge be removed and that the Mammoth Hotel should be converted to a lodge-type facility, with cabins surrounding a few central buildings. W. M. Nichols, president of the hotel company since the 1931 death of Harry Child, hired

¹⁵ Linda Flint McClelland, *Presenting Nature: The Historic Landscape Design of the National Park Service 1916-1942*, (Interagency Resources Division, National Register of Historic Places, US Department of the Interior, 1993), p. 115.

¹⁶ Excerpt from Albright's report to National Park Service Director, Stephen Mather, dated 21 October 1920, quoted in *For the Benefit and Enjoyment of the People*, 67-68.

Reamer to redesign the complex. Reamer proposed razing all but the 1913 wing of the old hotel and building a new “Lounge Building,” a separate dining room, and a separate recreation building. Guests would stay in single or double cottages located behind the new lounge and recreation buildings and in the hotel rooms in the 1913 wing. Reamer argued against simply moving the old Mammoth Lodge cabins to the site of the hotel. Rather, he designed both single and double wood-frame cabins, with lapped exterior siding.

The conversion of the Mammoth Hotel began in 1936 with the razing of the old hotel and its small ancillary buildings and the construction of the new dining hall, which housed a formal dining room as well as a cafeteria.¹⁷ Nineteen thirty-seven saw the completion of the “Lounge Building,” followed by the recreation building. Construction of the Mammoth cottages began in the spring of 1938. After execution of Reamer's redevelopment scheme, the Yellowstone Park Company renamed the complex Mammoth Springs Hotel.

The Impact of Mission 66 on the Yellowstone Park Company

In 1955, National Park Service Director, Conrad Wirth, initiated Mission 66, a long-range program designed to bring park operations across the country up to an acceptable standard. The target date for completion of the program was 1966—the fiftieth anniversary of the National Park Service. Officials from all of the national parks were expected to provide suggestions for improvements in all areas of management including the state of its concession facilities. A committee of four from Yellowstone, consisting of Superintendent Edmund Rogers, Chief Ranger Otto Brown, Landscape Architect Mattson, and Chief Naturalist Dave Condon, prepared a list of specific recommendations for specific developed areas within the park, including: Lake and Fishing Bridge, West Thumb, Old Faithful, Tower Fall, Roosevelt, Mammoth, and Canyon. It also suggested new development at Bridge Bay. The plan would increase guest room capacity by slightly more than 5,000—at a cost to the concessioner of \$13,654,000 in new construction and another \$721,200 for rehabilitation.¹⁸

Because the YPC owned most of the hotel, lodge, and boating facilities, the company would be required to undertake the improvements. Its new 20-year contract, dated February 3, 1956, contained a provision that required it to begin the building program by April of that year. Although the company was able to secure a loan to begin the initial building program, in the long run it did not have the financial wherewithal to meet the ambitious obligations mandated by the Mission 66 program. In addition, the level of service provided by the company had declined, prompting complaints from visitors. After several years of looking for a buyer, in 1966, the YPC sold its Yellowstone franchise to the Goldfield Corporation, including the Mammoth Hotel and its associated buildings.¹⁹ Goldfield Corporation sold to General Host just a few months later.

General Host, however, did not fare much better than the YPC. According to Culpin, “As part of the government contract with General Host, Inc., the company agreed to invest a minimum of \$10,000,000 by December 1975, or its 30-year contract would terminate.” General Host failed to meet this deadline, and although given a two-year extension, in 1976 a study team investigating the concession contract recommended that it be terminated. Subsequent to the canceling of the General Host contract, and the former Yellowstone Park Company was sold to the United States government for 19.9 million dollars.”²⁰ From 1976 to the present, the former YPC buildings (including the Mammoth Hot Springs Hotel) have been operated by a series of concession/resort companies, the most recent being Xanterra Parks and Resorts.

¹⁷ Cammerer to Rogers, July 30, 1936. Folder 7, Box 6, Series I: Subject Files, Subseries C: Facilities Management 1920-1976, Yellowstone Park Company Records, 1892-1979 (Catalogue No. YELL 185385), National Archives and Records Administration, Yellowstone National Park (hereinafter NARA YELL).

¹⁸ Culpin, *“For the Benefit and Enjoyment of the People,”* p. 105-107.

¹⁹ Ibid p. 115.

²⁰ Ibid p. 114.

B. CHRONOLOGY OF DEVELOPMENT AND USE

Development and Use of the Mammoth Hot Springs Hotel Site

The Mammoth Hot Springs Hotel is located on the north side of the Grand Loop Road within the Mammoth Hot Springs area of Yellowstone National Park. The hotel building and the adjacent dining hall both stand within the original footprint of the old National Hotel, which first opened its doors in 1883. When the park began working on its first Master Plan in the late 1920s and early 1930s, planners recommended an almost complete reconfiguration of then existing concession buildings at Mammoth Hot Springs.

The Mammoth Hot Springs and the formations are the most remarkable in the world. Consequently, the setting should be unencumbered by artificial works of man. All building along the road to Golden Gate should be removed, including the Lodge and its out-buildings, residences of employees of the Government, including the house and out-buildings of the U. S. Commissioner immediately adjoining the Hymen Terrace, the Curio Shop and other building owned by Mrs. Pryor, the old log hotel structure and Whittaker's store and gas station...²¹

Within the Yellowstone Park Hotel Company's lease, they recommended the following:

The hotel, the largest part built in 1883, is ugly, a fire trap, and past the stage of satisfactory usefulness for the type of patronage it caters to. It should be replaced by an attractive, architecturally suitable, and appropriate, fireproof structure.²²

A 1934 plat for the Mammoth area shows that the hotel, as well as improvements on adjacent concessioner's lease sites (a store and gas station west of the hotel), all were slated for removal (Figure H-3)²³ A new 'Hotel Group,' consisting of five separate buildings, was to be added at the base of the hill behind the old hotel, while the area where the hotel stood would be converted to green space. All remaining concession services would be moved to a new building east of the hotel, on the north side of a new landscaped boulevard or "esplanade."

²¹ Gilmore D. Clarke "Report to Accompany Plan of Mammoth Hot Springs Area, Yellowstone National Park," June 1930, p. 7-8. File 328, Box L-56, Series I: Master Plans & Reports, Park Facilities and Maintenance Records 1918-Present (Catalogue No. YELL 182386), NARA YELL.

²² Ibid.

²³ Drawing No. YEL 3124-B, 1934. File 007: 1933 Master Plan for Yellowstone NP, Folder 1 of 3, Subseries A: Master Plans, 1932-1931, Series II: Management and Accountability 1881-2009, undated, Maps and Drawing Collection (Catalogue No. YELL 145676), NARA YELL.



Figure H-3. Detail of Sheet No. 7, dated 1934, part of the Master Plan for Yellowstone National Park, Mammoth Hot Springs area. Light blue dashed lines indicate the buildings recommended for removal, while the orange shaded areas within dashed lines indicate proposed new construction. Note that the entire hotel (including the 1913 wing) was slated to be removed.

In June of 1936, however, Sanford Hill (the park's Resident Landscape Architect), working with representatives of the hotel company, approved an alternative development plan for the hotel lease site: "A general plan of procedure for the reconditioning and development of the present hotel was agreed to by the operators [the YPC] and the Park."²⁴ In July of 1936, Reamer produced a conceptual drawing of the new complex (Figure H-4), and on July 30th, National Park Service Director, Arno Cammerer, sent a telegram to

²⁴ Sanford Hill (Resident LA) and Howard Gregg (Assistant LA), "Report to the Chief Architect Period June 1 – June 30, 1936." File 2 (Reports to Chief Architect by Sanford Hill and Howard Greg), Box L-56, Series I: Master Plans & Reports, Park Facilities and Maintenance Records 1918-Present (Catalogue No. YELL 182386), NARA YELL.

the park's superintendent, approving the razing of the old hotel to make room for the new Mammoth Hot Springs development.²⁵

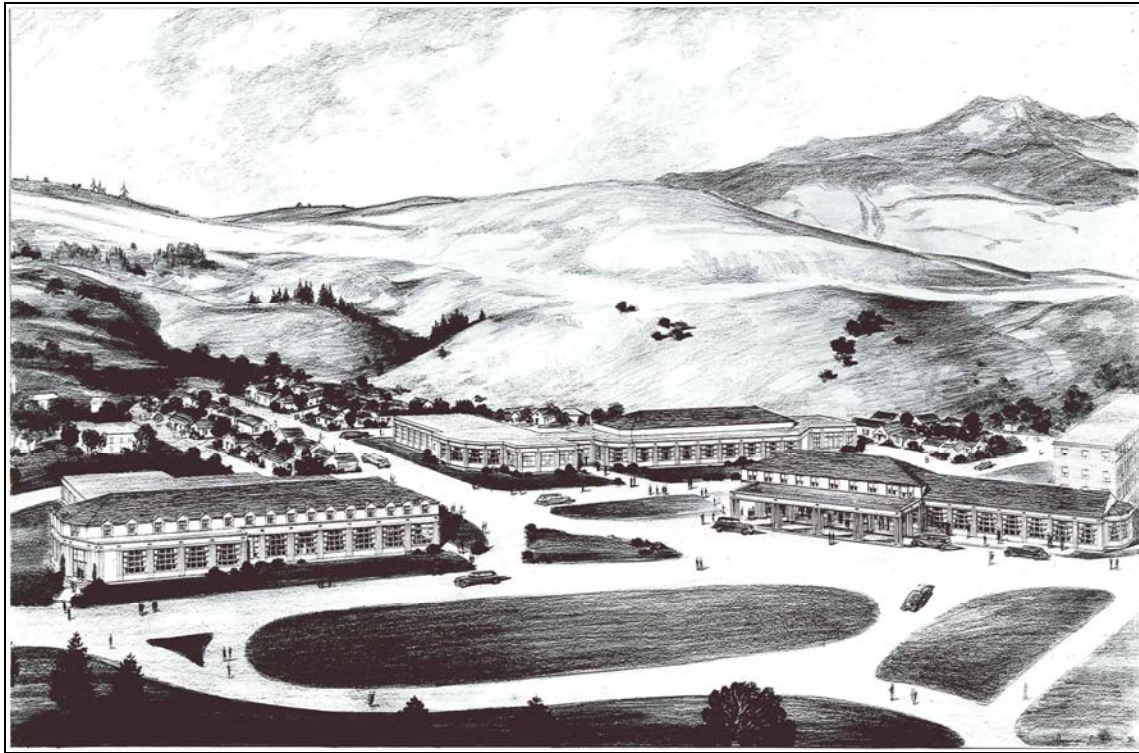


Figure H-4. Architect's drawing of the new development at Mammoth Hotel, titled "Mammoth Springs Lodge." (Photo No. H-36494, Haynes Foundation Collection, Montana Historical Society, Helena, Montana).

Chief Landscape Architect, Thomas Vint, also visited the park in June to review the company's plans for the cabin group. Reamer had prepared two versions for the cabin area, one with the cabins arranged in a regular grid pattern (as shown in Figure H-4), and a second, with the cabins facing onto five irregularly shaped landscaped areas and a row of cabins lining the base of the cliff at the rear of the hotel complex. Vint approved the latter version.²⁶ He also approved Reamer's architectural drawings for the new lounge and the dining room. Company president, Billy Nichols asked Reamer to finalize the cabin layout plan and forward it to the Branch of Plans and Design.²⁷ To make way for the new dining room and Lounge Building, in August of 1936, company crews began demolition of the old hotel (Figure H-5). By the end of the summer, the first floor and the stud partitions for the new dining room had already been built (Figure H-6).

²⁵ Cammerer to Rogers, July 30, 1936. Folder 7, Box 6, Series I: Subject Files, Subseries C: Facilities Management 1920-1976, Yellowstone Park Company Records, 1892-1979 (Catalogue No. YELL 185385), NARA YELL.

²⁶ Drawing No. 8906-B "Approved plan for new mammoth hotel development" Approved and dated 1936, Note drawing 8906-A showed the cabins arranged in a regular grid pattern. Drawing No. 8906-B, File No. 401, Subseries A: Architectural Drawings 1903-2006, undated, Maps and Drawing Collection (Catalogue No. YELL 145676), NARA YELL.

²⁷ "Monthly Narrative Report to Chief Architect Major & Minor Roads, Trails, and Projects other than E. C. W.," File (same as report name), Box L-56, Series I: Master Plans & Reports, Park Facilities and Maintenance Records 1918-Present (Catalogue No. YELL 182386), NARA YELL.



Figure H-5. Looking northeast towards the old Mammoth Hotel being razed to make way for the new dining room and lounge buildings, August 14, 1936. The roof of the 1913 wing, the only portion of the old hotel left standing, is indicated by the white arrow.
(Photo No. 31109; Box X-29, Freezer 1, Yellowstone Photo Archives.)



Figure H-6. Foundation and wall framing for the new dining room, October 24, 1936.
(Photo No. 20773; Box W-16, Freezer 1, Yellowstone Photo Archives).

Early in 1937, Resident Landscape Architect, Sanford Hill, was in the park to discuss the Bureau of Public Road's Mammoth Plaza Road contract with Superintendent Rogers. During his visit, Hill completed preliminary drawings of the layout of parking areas and roads in the vicinity of the new hotel buildings, which would be built under the contract. The plan was to "... start work at a point between Pryor's Store and the new Hotel Dining Hall, and continue (east) through the Mammoth Plaza as far as possible, keeping within the \$100,000 limit."²⁸

Regional Landscape Architect, Howard Baker, inspected the Mammoth project site in June of 1937. He noted that "The Master Plan for this area [Mammoth Hot Springs] is becoming fairly well tied down with the projects under construction and the proposed immediate construction program."²⁹ He found the YPC's construction crews still working to complete the dining room and lounge buildings. Although they had not finished these buildings by the official opening date of June 20, he felt they would be done soon, and would then begin the construction of the recreation building and cabins.

By July of 1938, the YPC's lodging complex at Mammoth was nearing completion. Once again, Howard Baker inspected the site:

The Mammoth hotel and cabin developments were nearing completion and present a very fine appearance. The cabin area was especially well handled and is a marked improvement over the general run of cabins now existing within Yellowstone National Park.³⁰

Baker's only concern was that the area around the hotel dining room and the recreation building needed walks, curbing, and planting. "It is hoped that the park operator appreciates the need for this work as it certainly will enhance the appearance of the new development."³¹

By the end of the 1938 construction season much of the YPC's new "lodge-style" complex at Mammoth was complete (Figure H-7). In the decades since completion, although the functions of some buildings within the complex have changed, the site has undergone relatively little modification: The complex as a whole, and the hotel itself, appear much as they did in 1938. Exceptions include some modifications to the green spaces adjacent to the hotel building. Also, pedestrian sidewalks have replaced the narrow curbing that defined the lawn east of the lounge/hotel wing and in front of the dining room.

Figure H-8, shows the evolution of the hotel footprint, from its original appearance in 1883 through 1937 when the YPC completed the transformation of the old hotel to a lodge style facility.

²⁸ Sanford Hill "Field Inspection Narrative Report, March 11 to March 24, 1937." Folder: Field Inspection Sanford Hill Mar. 1937, Box L-56, Series I: Master Plans & Reports, Park Facilities and Maintenance Records 1918-Present (Catalogue No. YELL 182386), NARA Yellowstone. Because the new construction associated with the hotel varied from the 1934 Master Plan, the National Park Service had to "readjust" its plan for the Mammoth area by orienting new road construction to the three main buildings (dining room, lounge/hotel wing and recreation building) associated with the Mammoth Hotel project. Hand-written notation on Sheet 2D, accompanying Sheet No. 12, Mammoth Site Plans, 1939 Master Plan. File No. 017, Subseries A: Master Plans, 1932-1971; Series II: Management and Accountability, 1881-2009, undated, Maps and Drawing Collection (Catalogue No. YELL 145676), NARA YELL.

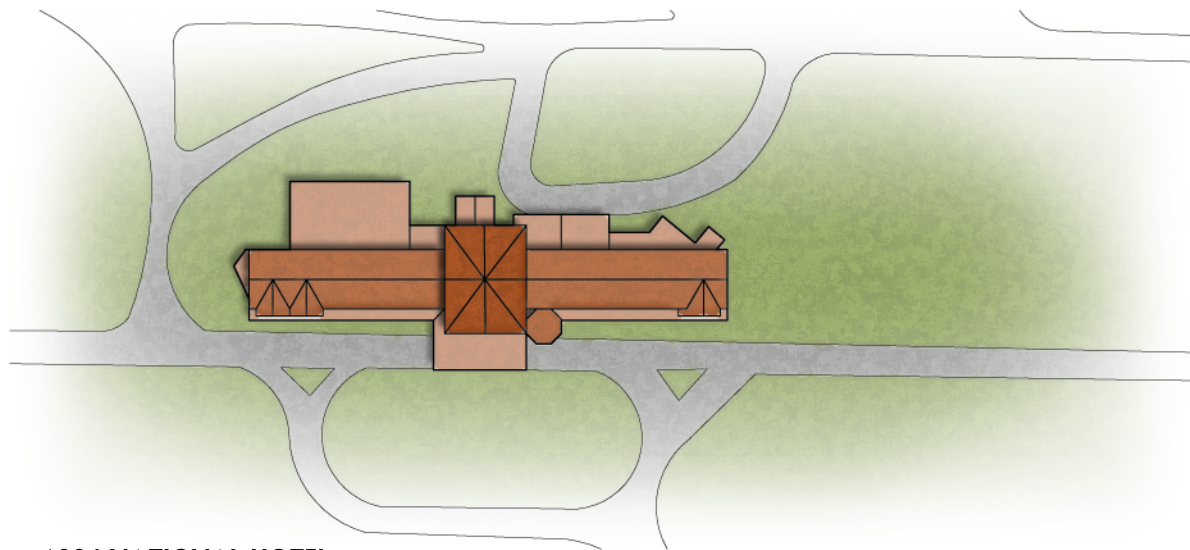
²⁹ Howard W. Baker, "Report to the Chief Architect on Yellowstone National Park, June 5 to 22, 1937." Folder (same as report title), Box L-56, Series I: Master Plans & Reports, Park Facilities and Maintenance Records 1918-Present (Catalogue No. YELL 182386), NARA YELL.

³⁰ Howard W. Baker, Regional Landscape Architect "Report to Chief Architect on Inspection Trip to Yellowstone National Park, July 18 to August 4, 1938." File No. 601-15.1 July 18 – August 4; Box L-56, Series I: Master Plans & Reports, Park Facilities and Maintenance Records 1918-Present (Catalogue No. YELL 182386), NARA YELL.

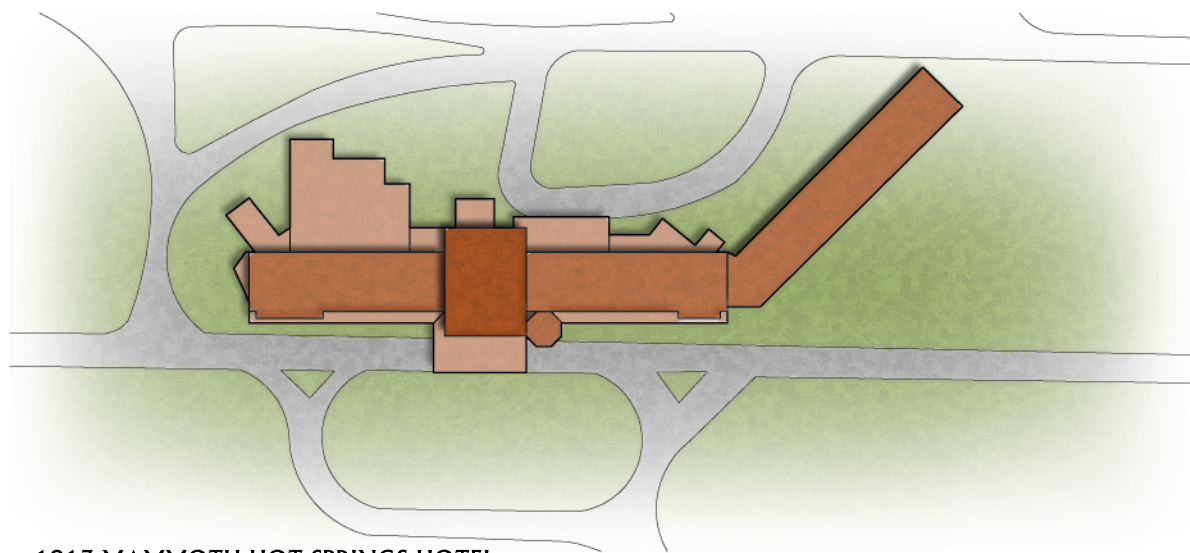
³¹ Ibid.



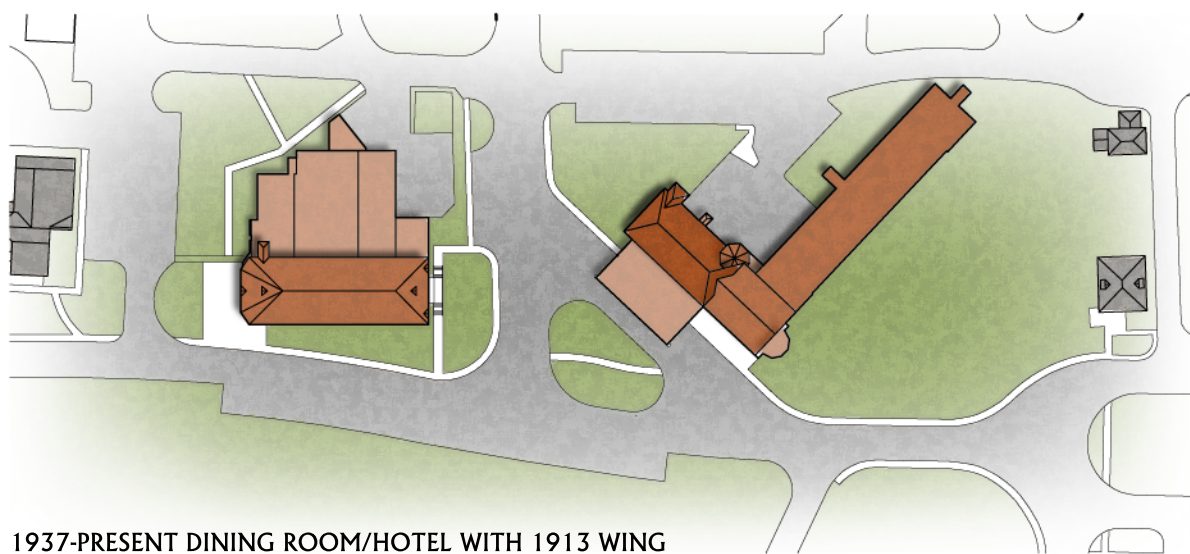
Figure H-7. "Mammoth Springs Hotel from Capitol Hill" 1938
(Photo No H-38615, Haynes Foundation Collection, Montana Historical Society, Helena, Montana).



1884 NATIONAL HOTEL



1913 MAMMOTH HOT SPRINGS HOTEL



1937-PRESENT DINING ROOM/HOTEL WITH 1913 WING

Mammoth Hot Springs Hotel

Mammoth - Yellowstone National Park

FIGURE H-8



Development and Use of the Mammoth Hot Springs Hotel

Planning and Execution of the Mammoth Hot Springs Hotel 1934 TO 1937

The current Mammoth Hot Springs Hotel represents one component of the YPC's reconfiguration of its Mammoth hotel to a lodge style facility.³² The company's decision to convert its hotels at both Lake and Mammoth had been made in 1934. In October of that year, William Nichols sent a letter to Robert Reamer asking if he had completed "pretty pictures" of the proposed lodge style facilities at both sites. Nichols was headed to Washington DC to attend a meeting arranged by the Secretary of the Interior, and wanted to have the plans as well as a cost estimate available to discuss: "I don't know that we want to show them in Washington, but they might be of benefit to us there. I hope you make awfully pretty pictures ... as that's what those birds in Washington like to see." Nichols wanted to have secure approval of the plans in order to begin construction in 1935.³³

It was not until July of 1935, however, that Reamer produced "blue prints of sketch floor plans" for the new buildings at Mammoth: "These plans are not developed to any great extent but are being forwarded to you for a general criticism which I hope to have before Mr. Vint comes to Seattle."³⁴ Reamer pointed out that the new part of the hotel (called the Lounge Building on his blueprints) would be oriented at right angle to the 1913 wing. He anticipated that Nichols would object to the proposed location of the telegraph office in the lobby, but felt that it was a better option than extending the rear wall of the building, as doing so would "put some of the hotel guests in a pocket and also reduce the parking space in the rear." He pointed out that the octagonal stairway would extend only to the second floor and then "take the space of one of the bedrooms in the 1913 wing. He also noted that the "lounge" component of the building was separated from the business lobby "for obvious reasons."

Nichols and his construction manager, Mr. Brown, spent several days reviewing the plans and replied with a lengthy critique. They wanted some reorganization of the business lobby, stating that the telegraph desk should to be "shoved out on the porch," to keep the noise out of the lobby space. He also wanted to reduce the number of doors leading from the front porch to the business lobby from three to one. This reduction, coupled with placing the manager's office at the end of the registration counter near the front (south) wall of the building would maximize the space in the lobby for people checking in. " ... you will remember that when people are being registered, they line up and we want as much space as possible between the front door and the registration desk." Besides these interior modifications, Nichols indicated that he wanted the width of the *porte-cochere* to be increased from 14 feet to at least 20 feet, so that it would be wide enough for two cars to pass; "... it will be used by sage brushers coming in to the park to register and it is very possible one man may be waiting outside, and another drive up behind him who is ready to go to his cabin" ³⁵

³² The YPC considered a variety of options to transform the Mammoth Hotel complex to a lodge type facility with rental cabins to satisfy "sage brushers," i.e., those touring the park in their own personal automobiles. In 1934, the YPC and Reamer had discussed removing most of the old hotel to make way for new public buildings to be used by hotel and cabin guests. However when Nichols met with Thomas Vint in the Grand Canyon in 1935, Vint suggested that simply removing the top story of the old hotel and "fixing up the front a little bit," might be sufficient. WMN to Robert C. Reamer, October 8, 1934 and May 8, 1935. Folder 7, B ox 6, Subseries C: Facilities Management 1920-1976, Series 1: Subject Files, Yellowstone Park Company Records 1892-1979, NARA YELL.

³³ WMN to R. C. Reamer, October 8, 1934. Folder 7, B ox 6, Subseries C: Facilities Management 1920-1976, Series 1: Subject Files, Yellowstone Park Company Records 1892-1979, NARA YELL.

³⁴ Robert C. Reamer to W. M. Nichols, July 26, 1935. Folder 7, B ox 6, Subseries C: Facilities Management 1920-1976, Series 1: Subject Files, Yellowstone Park Company Records 1892-1979, NARA YELL.

³⁵ WMN to R. C. Reamer, August 7, 1935. Folder 7, B ox 6, Subseries C: Facilities Management 1920-1976, Series 1: Subject Files, Yellowstone Park Company Records 1892-1979, NARA YELL. Apparently, Reamer and Nichols compromised, on two entrances to the lobby.

Between the fall of 1935 and the spring of 1936, the YPC continued to contemplate its options for its Mammoth facility. In May of 1936, Nichols wrote to Reamer detailing his discussions with Thomas Vint. Apparently, Nichols had a new proposal which involved cutting a 50 foot hole through the middle of the old hotel, allowing people to drive through to get to their cabins behind the building. Vint objected, stating that unless all of the original 175 feet of the old hotel were to be removed, he would “prefer to see the building remain as is, with a couple of stories off and then work out some road by which people could conveniently go around back of the hotel.”³⁶ Nichols told Reamer, “I realize this scheme for Mammoth Hotel isn’t as desirable as the one you made up, but the estimated (sic) cost of the recreation hall and new lobby was about \$50,000.00 and I would rather go a bit slow on that until we find out how travel at Mammoth develops.”³⁷

After studying the available plans and information on the old hotel to determine “quantities,” Reamer replied to Nichols with the following:

If your program is to cut down the height of the building, improve the appearance of the old portion with certain changes on the ground floor so as to enable you to use the building until a later date when you would go through with the ultimate improvement, why spend the money.... About 40% of the money spent on the old building would be a total loss if 175 feet are eventually removed. ...

The only thing you are going to gain is something in the way of appearance and not too much of that. Removing 175 feet later would, of course, help the look as there would be less of it.³⁸

Reamer’s arguments persuaded Nichols to move ahead with his (Reamer’s) original scheme: “In view of your letter of May 27, it does seem kind of foolish to bite off this Mammoth proposition piecemeal, so I feel now that if we are going to do anything at all, we better make the whole improvement at once, and stay with the original scheme....” Nichols asked Reamer to provide preliminary sketches of the elevations of the dining room, lobby, and recreation hall, so that he might be able to show them to Vint. He also asked Reamer to be in the park to discuss the project.³⁹ Both Vint, and the park’s then-Resident Landscape Architect, Sanford Hill, met with YPC personnel and Reamer to approve both the general plan for development (see Figure H-4), as well as the elevations for the three new buildings (dining room, Lounge Building, and recreation hall).

Soon after returning to his office in Seattle, Reamer revised the first and second floor plans for the lobby to reflect some of the issues discussed in 1935.

In general the changes on the ground floor are, increase in the plumbing facilities, placing the manager’s office on the front and the addition of a bell boys’ room.

The changes in the second floor plan offers a more desirable location for your private office, the placing of the file room between the stenographers’ and the auditing department, a private office for Mr. Galusha (the accountant), and I believe, a better plan in general.⁴⁰

³⁶ WMN to R. C. Reamer, May 20, 1936. Folder 7, Box 6, Subseries C: Facilities Management 1920-1976, Series 1: Subject Files, Yellowstone Park Company Records 1892-1979, NARA YELL.

³⁷ Ibid.

³⁸ Robert C. Reamer to W. M. Nichols, May 27, 1936. Folder 7, Box 6, Subseries C: Facilities Management 1920-1976, Series 1: Subject Files, Yellowstone Park Company Records 1892-1979, NARA YELL.

³⁹ Ibid.

⁴⁰ Robert C. Reamer to W. M. Nichols, June 25, 1936. Folder 7, Box 6, Subseries C: Facilities Management 1920-1976, Series 1: Subject Files, Yellowstone Park Company Records 1892-1979, NARA YELL.

He indicated that he had “a crew” working on finalizing all the plans to be sent on for government approval.⁴¹ Nichols responded with suggestions for more changes to the ground floor and indicated that he did not like the layout for the second floor offices as well as one that he and Brown (his hotel manager) had provided earlier.⁴²

By early August, Reamer’s work had progressed to the point that he was discussing interior and exterior finishes for the lobby:

The lounge, as you know, is on the front and east end, practically all windows which are separated by pilasters approximately 3’-0” wide. The windows are divided into panes about 3’-0” square. The material between the glass panes is about 2 inches wide. The scheme proposes to divide all of the walls and ceiling into about 3’0” x 3’0” units of flush panels or glass, as the case may be, with 2” divisions between the panels. The divisions between the panels would be formed by a slight V on each side. The grain of the wood of the 2” divisions would follow around the panels. The grain of the panel wood to run up and down.

I hope you will not object to making the ceiling of the lounge flat. The first thought, and what the public would expect in a room of this size and purpose, would be for a ceiling that sloped up to the center like a chapel, but the proportion of the room does not seem to adapt itself to which kind of treatment. I believe a perfectly simple all-wood treatment with the same design carried on the walls ceiling and possibly the floors, would make an impressive room particularly after Mrs. Child has done her magician act with the furniture. It might be better to have the strips dividing the panels slightly darker than the panels.⁴³

Reamer also discussed the windows, which he felt should be wood sash, except the lights that opened which would have steel sash. For roofing, he proposed “a rather attractive looking copper roof,” or asphalt shingles, either of which would cost about \$28.00 per square. Finally, he suggested that the best way to get telegrams from the telegraph office in the first floor of the building to the second floor offices was the installation of a tube system.⁴⁴ Nichols wrote back to Reamer just a few days later, saying that the “suggested treatment is satisfactory to everybody including Mrs. Child...” Mrs. Child’s only concern was why the windows could not all be steel sash rather than just those that opened. Largely because of expense, Nichols decided on cedar shingles, which only cost between six and eight dollars a square.⁴⁵

On September 14, 1936, Reamer completed the plans and elevations for both the dining room and the lounge; Nichols submitted them to Edmund Rogers, and asked that he forward them on to the Washington office of the National Park Service.⁴⁶ Rogers waited until September 26 to submit the lounge plans to the director’s office, explaining that he had not sent them sooner because he expected Thomas Vint to visit the park to review them one last time. As Vint had not made it to the park, he was transmitting the plans for the lounge

⁴¹ Ibid.

⁴² Nichols to Reamer, June 29, 1936. Folder 7, B ox 6, Subseries C: Facilities Management 1920-1976, Series 1: Subject Files, Yellowstone Park Company Records 1892-1979, NARA YELL.

⁴³ Reamer to Nichols, August 7, 1936. Folder 7, B ox 6, Subseries C: Facilities Management 1920-1976, Series 1: Subject Files, Yellowstone Park Company Records 1892-1979, NARA YELL. Mrs. Child was the wife of one of the principals in the YPC.

⁴⁴ Ibid.

⁴⁵ Nichols to Reamer, August 11, 1936. Folder 7, B ox 6, Subseries C: Facilities Management 1920-1976, Series 1: Subject Files, Yellowstone Park Company Records 1892-1979, NARA YELL.

⁴⁶ Nichols to Edmund B. Rogers, Superintendent Yellowstone National Park, September 11, 1936. Folder 7, B ox 6, Subseries C: Facilities Management 1920-1976, Series 1: Subject Files, Yellowstone Park Company Records 1892-1979, NARA YELL.

(approved by Resident Landscape Architect Sanford Hill). However, Rogers retained the plans for the dining hall so that he could discuss them with Vint when he finally made it to the park.

It was not until October 21, that Assistant Director, Conrad Wirth, returned two copies of the plans for the lounge building to Edmund Rogers.⁴⁷ Although the Director had approved the plans, he wanted the operator to respond to the suggestions made by the service's Fire Protection Engineer, Frank L. Ahern. Apparently, the plans had been sent to Ahern by the Washington Office. Ahern questioned the advisability of using wood shingles, when fire-proof alternatives were available. He also suggested that automatic sprinklers would be suitable for fire control and that the open stairway leading from the lobby to the upper levels of the hotel wing should be enclosed at the third level and have a first floor emergency exit. Ahern couched all of his recommendations not as "positive requirements," but asked that they be "put up to the operators for their best judgment."⁴⁸

Ultimately, Nichols declined to install automatic sprinklers or use fire-proof shingles on any of the new Mammoth buildings. With regard to the shingles, when the blueprints for the new Lounge Building had been approved in early October, Nichols had gone ahead and ordered cedar shingles for both the Lounge Building and the dining room. As of November 7, the shingles had been delivered to the work site, and according to Nichols, the crews would soon be ready to install them on the dining room, the construction of which had begun as soon as the area was cleared of debris from the razing the old hotel.⁴⁹

As the approval process continued between the agency and the YPC, Reamer continued to supply Nichols with ideas for the lounge. In October, Reamer had sent Nichols a letter describing a wooden map of the United States that would be suitable for the lounge, to which the latter replied favorably:

I was very much interested in the way you go about making such a map. I had no idea how it was done, and I don't know if I know much about it now. Anyway, on the theory that it won't cost much more than the \$925.00 you estimate, go ahead and see what you can do. I think it will be a most interesting feature to have in the lounge.⁵⁰

While the dining room was under construction, demolition had continued on the portion of the old hotel that lay to the east, in the space to be occupied by the Lounge Building. In early November, most of the building slated for removal had been cleared from the site.⁵¹

⁴⁷ Conrad L. Wirth, Assistant Director to Superintendent, Yellowstone National Park, October 21, 1936. Folder 7, Box 6, Subseries C: Facilities Management 1920-1976, Series 1: Subject Files, Yellowstone Park Company Records 1892-1979, NARA YELL.

⁴⁸ Frank L. Ahern, Fire Protection Officer to John D. Coffman, Chief Forester, NPS, October 9, 1936. Folder 7, Box 6, Subseries C: Facilities Management 1920-1976, Series 1: Subject Files, Yellowstone Park Company Records 1892-1979, NARA YELL.

⁴⁹ Nichols to Rogers, November 7, 1936. Folder 7, Box 6, Subseries C: Facilities Management 1920-1976, Series 1: Subject Files, Yellowstone Park Company Records 1892-1979, NARA- YELL.

⁵⁰ Nichols to Reamer, November 5, 1936. Folder 7, Box 6, Subseries C: Facilities Management 1920-1976, Series 1: Subject Files, Yellowstone Park Company Records 1892-1979, NARA- YELL

⁵¹ W. M. N. to H. D. G., November 12, 1936. Frank L. Ahern, Fire Protection Officer to John D. Coffman, Chief Forester, NPS, October 9, 1936. Folder 7, Box 6, Subseries C: Facilities Management 1920-1976, Series 1: Subject Files, Yellowstone Park Company Records 1892-1979, NARA- YELL.

By the spring of 1937, the dining room was nearing completion and the YPC was anticipating beginning work on the Lounge Building (Figure H-9). However, the construction bids on some of the interior finishing materials for all three new buildings (the dining room, lounge, and recreation building) had come in much higher than anticipated. Because the dining room and recreation buildings, as designed, both had simple finishes, the only place to cut was the Lounge Building:

When the details were made for the interior finish for the office and Lounge Building, the understanding was the lounge room would be nicely treated with flush wall panels in Philippine mahogany, with a suitable cornice, the ceiling being Celotex to represent painted plaster. It was my idea that the entrance lobby should also be nicely treated, it being the front door to your hotel and not a rough lobby that might be put in where there no hotel.

The lobby as was detailed should make a very favorable impression on the tourists. The walls, counters, etc., were in Philippine mahogany with interesting details. It all would have looked very spiffy, but when I got the figures they were a great deal more than I anticipated and for more than a month I have been over... the figures to see what could be cut out.⁵²

⁵² Reamer to Nichols, February 12, 1937. Folder 8, Box 6, Subseries C: Facilities Management 1920-1976, Series 1: Subject Files, Yellowstone Park Company Records 1892-1979, NARA YELL.



Figure H-9. "New Mammoth Hotel Layout," Photo taken in March of 1937, looking east to the new dining hall and hotel wing, prior to construction of the lounge building (Photo No. 31113, Box X-29, Freezer 1, Yellowstone Photo Archives).

Reamer proposed deviating from the original design in the lounge building in three areas: 1) in the second floor, omit doors on the offices, and change the trim to fir, 2) in the business lobby, omit the wall panels and simplify the cornice, making it of fir, and 3) in the octagonal stair hall and elevator lobby, omit the wall panels. Savings on these three items would total \$3,420, for an adjusted total of \$5,798 for the interior of the Lounge Building. Reamer advised Nichols: "If you take the saving your lobby will be provided with the Registration, news, telephone and telegraph counters, back case for the news stand base, chair rail, simple cornice, toilet partitions, stairway railing, doors (except to your offices on the second floor), trim and the lounge panels, pilasters and cornice as per original details."⁵³

YPC hotel manager, H. C. Brown, replied to Reamer after discussing his proposals with Mrs. Child. She agreed with most of Reamer's suggestions, with the exception that the offices in the second floor needed doors. Mrs. Child did reiterate that she wanted the lounge room "as originally planned—trimmed in Philippine mahogany."⁵⁴

In early March, Reamer reported that the interior mill work for the lounge and recreations buildings, and for the ground floor of the dining room, were in production and would reach the construction manager (B. O. Hallin) in time for installation. He also reported on the progress of the wood map for the lounge: "The map is causing no end of interest. Two architectural magazines and the local papers have asked for photographs for publication,

⁵³ Ibid.

⁵⁴ H. B. Brown to R. C. Reamer, February 17, 1937. Folder 8, Box 6, Subseries C: Facilities Management 1920-1976, Series 1: Subject Files, Yellowstone Park Company Records 1892-1979, NARA YELL.

also a bank would like to put it on display for a week. I have promised nothing not knowing if you care for this kind of publicity.”⁵⁵ Nichols wholeheartedly embraced the publicity:

About the map – I am glad to know it is drawing so much interest. Get all the publicity you can for it and for yourself. If the bank will put it up in such a way that no one can carve their initials on it or damage it in any way, it is all right with me, and I will leave it to you to put some kind of an appropriate sign on it to the effect that it is made by you for the new hotel at Mammoth Hot Springs, Yellowstone Park – or something like that. I am most anxious to see a photograph of it.⁵⁶

By the end of March, Reamer had submitted his ideas regarding the exterior color for the new buildings: He noted that each had wood and plaster on the exteriors and suggested that they be different shades of the same color. “The design lends itself to a light color. My original thought was a dark ivory for the wood work and a cream color for the plaster.” He noted that the 1913 wing was painted a light gray with a dark green cornice, but he felt if the cornice were repainted a light color it would not be necessary to paint the body of the wing to match the new construction. He compromised on color by stating that he was not opposed to painting the new construction different shades of gray.⁵⁷

The grays I have in mind would probably be somewhat lighter than the wing but that should not be objectionable.

I hope this does not have to go to the Supreme Court as we should know soon what the colors are to be.⁵⁸

In a postscript to his letter, Reamer asked Nichols to comment on roof color.

Nichols discussed the issue of paint color with Mrs. Child. Although she liked the idea of a light cream and ivory combination, she wondered if it might not show dirt more than the gray. Nichols was also worried about being forced to paint the wing “before we are ready to.” He suggested using the gray pallet to begin with, and then change to the “cream combination,” in a year or two when “we could paint the whole thing at once, wing and all.” He asked Reamer to send some samples of the grays that he had in mind. He also stated that Mrs. Child felt the roof should be green to match the other buildings at Mammoth, and that the cornice on the wing could be painted the same green.⁵⁹

In early April, Reamer sent Nichols two slats with eight different color combinations for exterior paint colors to review.⁶⁰ Mrs. Child appears to have made the final decision, selecting cream color for the woodwork and light gray for the plaster. She felt that with this combination, the company could simply paint the dark green

⁵⁵ Reamer to Nichols, March 11, 1937. Folder 8, Box 6, Subseries C: Facilities Management 1920-1976, Series 1: Subject Files, Yellowstone Park Company Records 1892-1979, NARA YELL.

⁵⁶ Nichols to Reamer, March 15, 1937. Folder 8, Box 6, Subseries C: Facilities Management 1920-1976, Series 1: Subject Files, Yellowstone Park Company Records 1892-1979, NARA YELL.

⁵⁷ Reamer to Nichols, March 24, 1937. Folder 8, Box 6, Subseries C: Facilities Management 1920-1976, Series 1: Subject Files, Yellowstone Park Company Records 1892-1979, NARA YELL.

⁵⁸ Ibid.

⁵⁹ Nichols to Reamer, March 27, 1937. . Folder 8, Box 6, Subseries C: Facilities Management 1920-1976, Series 1: Subject Files, Yellowstone Park Company Records 1892-1979, NARA YELL.

⁶⁰ Reamer to Nichols, April 12, 1937. . Folder 8, Box 6, Subseries C: Facilities Management 1920-1976, Series 1: Subject Files, Yellowstone Park Company Records 1892-1979, NARA YELL.

cornice on the wing a light color. She also reiterated her feelings about roof color “as this meets with the approval of the Park Department and it may take some time to change it.”⁶¹

While Reamer and YPC personnel discussed the details of finishing colors, YPC's construction manager, B. O. Hallin, was dealing with a variety of setbacks that affected all of the company's construction projects. These included lumber strikes on the west coast which held up deliveries of joists for the lounge. Poor weather conditions in the spring, including snow and freezing temperatures also slowed work. Still, Hallin was optimistic that if the lumber were delivered by the third week in April, he thought the second story offices in the new lounge would be complete by June 1. However, the two public spaces (the business lobby and the lounge) would probably not be complete.⁶²

Hallin's predictions were proved true. Howard Baker, now serving as Assistant Regional Landscape Architect, spent two weeks in the park between June 5 and 22 of 1937. He reported that the YPC had opened its new dining room and lounge buildings on the opening date of June 20s, although neither building was complete. However, the company was using its entire workforce to complete the two new buildings, and he expected them to be finished soon. He found the structures to be “very attractive and a great improvement over the original hotel” yet was dissatisfied with a portion of the design.⁶³

The part of the old hotel that was incorporated in this scheme certainly is out of place as it is too high and the design is not in keeping with the new type. I think if the fourth floor could be eliminated, and the structure covered with a pitched roof, it might solve the problem. This is only an idea that has come to mind while thinking about the subject and I did not discuss it with Superintendent Rogers. For the present we have requested the Company to repaint the present dark green cornice to match the other trim on the buildings. If this is accomplished the evidence of the wing will be considerably reduced.⁶⁴

In early July, Nichols wrote to Reamer reporting that the prefabricated mahogany wall panels in the lounge were going up fast and complete around the map. He felt that it would be a “very handsome room,” and invited Reamer to come to the park to view his “latest creation.”⁶⁵ Reamer did go to the park in July, and while there was asked to work on some minor modifications to the new buildings, among them a proposal for new marquee over the lunch and dining room entrances. After returning to Seattle, Reamer developed some ideas for signage for the dining room and for the new hotel. Although Nichols liked his ideas, the estimates were too high “... so we will forget about the fancy stuff and put signs where, when and how the dearly beloved Landscape Department will let us.”⁶⁶ Reamer also supplied Nichols with a list of the woods used for each

⁶¹ H. B. Brown to Reamer, April 19, 1937. Folder 8, Box 6, Subseries C: Facilities Management 1920-1976, Series 1: Subject Files, Yellowstone Park Company Records 1892-1979, NARA YELL.

⁶² B. O. Hallin to Nichols, April 17, 1937. Folder 8, Box 6, Subseries C: Facilities Management 1920-1976, Series 1: Subject Files, Yellowstone Park Company Records 1892-1979, NARA YELL.

⁶³ Howard W. Baker “Report to the Chief Architect on Yellowstone National Park, June 5 to 22, 1937.” Folder: Report to Chief Architect by Baker, June 1937, Box L-56, Series I Master Plans & Reports, Park Facilities and Maintenance Records, 1918-Present, NARA YELL.

⁶⁴ Ibid.

⁶⁵ Nichols to Reamer, two letters both dated July 2, 1937. Folder 8, Box 6, Subseries C: Facilities Management 1920-1976, Series 1: Subject Files, Yellowstone Park Company Records 1892-1979, NARA YELL.

⁶⁶ Reamer to Nichols August 13, 1937; Nichols to Reamer, August 18, 1937. Folder 8, Box 6, Subseries C: Facilities Management 1920-1976, Series 1: Subject Files, Yellowstone Park Company Records 1892-1979, NARA YELL. Reamer also offered his suggestions as to how to correct a mistake on the map, where the maker had written “Baltimore” as the capitol of Maryland rather than “Annapolis,” thus offending some visitors from Maryland. Reamer suggested simply relabeling the capitol and asked Nichols if he has someone on staff, specifically a “very careful painter,” who could make the change.

state in the map that adorned the west wall of the lounge, indicating that his associate W. H. Fey made the map.⁶⁷

Later in August, Nichols wrote to Reamer asking for a more substantial alteration to the lounge building:

In the little hall at the bottom of the circular staircase you have a sort of an arch. ... Mrs. Child has an idea it might be well to fill in that arch with a partition and door to close off the lounge room and the wing from the hotel lobby, because next year when we have the cabins in operation, we will probably have more guests than we have this year, and we would like to prevent the cabin people from going into the lounge room, which was built primarily for the use of those using the hotel rooms.⁶⁸

Nichols asked Reamer to provide a sketch of the proposed partition. In closing, he reiterated how much the guests were enjoying the lounge and especially the map.⁶⁹

At the behest of the YPC, in September, government architects provided sketches of the signage to be placed on the new buildings at Mammoth to Superintendent Rogers. They recommended that the letters be made of cast bronze with a “dark statuary finish” and applied directly to the plaster wall of the buildings. They suggested that Reamer should “make the necessary details,” after which Rogers should review them once again for final approval.⁷⁰

In late November, the YPC sent preliminary plans for a covered walkway connecting the lounge building with the dining hall to the park superintendent, who forwarded them on to the Director through the regional office. It is unclear if Reamer designed this walkway, however, the project was “not recommended.”

While the advantages of the shelter for the convenience of the public is appreciated, the scheme presented is objectionable from both utilitarian and appearance standpoints. It offers little protection from driving rain and wind, and is not the most direct route from the hotel porch to the dining hall entrance.⁷¹

The Director suggested that the construction activities had “aggravated the demand for a covered walk,” and that the company should wait to see if the completion of the roads and walkways made a difference the following year. As an alternative to an above-ground structure, the Director asked that the company consider an underground tunnel.⁷²

By January, 1938, Reamer had still not completed either the plans for the partition or the work needed on the signs. This was likely due to his being ill with the circulation problems that had plagued him since 1935, which culminated in the amputation of one of his legs.⁷³ On January 4, Nichols sent Reamer a letter, which he

⁶⁷ Reamer to Nichols, August 2, 1937. Folder 8, Box 6, Subseries C: Facilities Management 1920-1976, Series 1: Subject Files, Yellowstone Park Company Records 1892-1979, NARA YELL.

⁶⁸ Nichols to Reamer, August 24, 1937. Folder 8, Box 6, Subseries C: Facilities Management 1920-1976, Series 1: Subject Files, Yellowstone Park Company Records 1892-1979, NARA YELL.

⁶⁹ Ibid.

⁷⁰ William Gebhardt, Associate Architect, “Memorandum to Mr. Rogers,” September 20, 1937. Folder 8, Box 6, Subseries C: Facilities Management 1920-1976, Series 1: Subject Files, Yellowstone Park Company Records 1892-1979, NARA-YELL.

⁷¹ J. W. Emmert, Acting Superintendent to W. M. Nichols, January 4, 1938. Folder 9, Box 6, Subseries C: Facilities Management 1920-1976, Series 1: Subject Files, Yellowstone Park Company Records 1892-1979, NARA- YELL.

⁷² Ibid.

⁷³ Quinn, *Weaver of Dreams*, p. 169-170.

began by jokingly commiserating with him about the recent surgery; “Just as long as you don’t part with anything above the neck, it will be all right. You can still lose a lot below the neck and still be a pretty good architect.” After that introduction Nichols immediately returned to company business, telling Reamer that the examples of the letters from the Oregon Brass Works were satisfactory and stating that he preferred the “oval face” type:

For the hotel, we intend putting the words “MAMMOTH SPRINGS HOTEL” on the panel immediately under the roof of the porte-cochere on the side facing my house. And on the North end of the porte-cochere roof, the word “HOTEL”, also in bronze letters. Can you make a sketch for this or a blueprint or something, as they will want to have a print to put in their archives.⁷⁴

Nichols also asked Reamer to design other signs for the hotel, and to consider the possibility of extending the roof of the porte-cochere east across the south wall of the lounge. He noted that the existing porte-cochere did not provide sufficient protection for the hotel patrons’ luggage. He also felt that that roofing the area would keep the lounge cooler during the summer. “I know we need this extra roof space for baggage, particularly in rainy weather, and while it would make the Lounge Room a little darker, I don’t think it would hurt the appearance of the room in any way.” Finally, he asked Reamer to finalize the plans for the partition. “There is no great hurry about this but we would like to have this mill work at Gardiner by, say, April 15; so, will you ... complete the drawings and order whatever we need.” Nichols closed his letter in the same vein as he began: “There ... I have given you enough work to keep you busy at home for a couple of days. Take things easy and behave yourself and, in a couple of months, no one will ever know you are working on one cylinder.”⁷⁵ Robert C. Reamer died on January 7, and may never have seen Nichols last letter.⁷⁶

After Reamer’s death, the YPC attempted to continue its longstanding relationship with other members of Reamer’s Seattle firm, the Metropolitan Building Company. However, Reamer would be difficult to replace. His importance to the firm is reflected in the company’s Executive Vice President’s letter to Nichols soon after his death:

Mr. Reamer was indeed a remarkable man. No one realizes better than myself what his passing will mean to those with whom he has been associated these many years. His genius and his sound judgment on all matters in his professional field were outstanding, and while another architect will be obtained to carry on his unfinished work and the work which would have come to him had he lived, it will not be possible to obtain another R. C. Reamer.⁷⁷

W. H. Fay, who had assisted Reamer with much of his Yellowstone work, replied to Nichols’ requests from early January. He provided a drawing of the layout for the oval faced letters to be applied to the hotel and made some alternative suggestions for extending the porte-cochere. Instead of extending it to the east, Fay thought extending it one bay’s width to the west (towards the dining room) would work better. He stated that Reamer had originally envisioned that the lounge windows would have Venetian blinds. And, he suggested that awnings mounted on pipe standards to shade the windows “could be arranged very nicely.” The drawback

⁷⁴ Nichols to Reamer, January 3, 1938. Folder 1, Box 7, Subseries C: Facilities Management 1920-1976, Series 1: Subject Files, Yellowstone Park Company Records 1892-1979, NARA- YELL.

⁷⁵ Ibid.

⁷⁶ Quinn, *Weaver of Dreams*, p.170.

⁷⁷ Andrew Steers, Executive Vice President, Metropolitan Building Company to W. M. Nichols, January 10, 1938. Folder 9, Box 6, Subseries C: Facilities Management 1920-1976, Series 1: Subject Files, Yellowstone Park Company Records 1892-1979, NARA- YELL.

was that the canvas would have to be removed and stored in the winter.⁷⁸ Nichols replied that he was glad that Fay was continuing to work on the park buildings, and that he approved of the blueprint for the letters. He wanted Fay to order the letters and have them delivered to the park by April 1.⁷⁹ Nichols continued his correspondence with Fay at least through June of 1938, mostly dealing with the need for plans for additional signs—all of which would have to go through several levels of review.⁸⁰

By August of 1938, roughly two years since beginning, the YPC's ambitious project to convert its Mammoth facility to a lodge style operation was nearing completion. The hotel and dining room were operating and the cabin group and recreation hall (intended for the cabin occupants) located behind the hotel were mostly finished. The YPC however, continued with the idea of building a covered walkway between the business lobby of the hotel and the entrance to the dining room. Instead of sending the project to the Metropolitan Building Company, it hired a new architectural firm to produce the plans, Douglas Hull McLellan, of Los Angeles, California. Even though the National Park Service administration had rejected the proposal the previous year, the YPC asked McLellan to prepare additional drawings, which he did in September.

The sketches for the addition between the hotel and the dining-room have just arrived and I hate to say it but I think you have done a damn good job. Goodwin, Brown and all of us are very well pleased with them. I want to show them to Mrs. Child, however, before giving you the green light.⁸¹

Nichols forwarded the plans on to Superintendent Rogers in early November, but had not heard back by December. Regardless of how the company felt about the plans they were once again rejected, and the covered walkway or arcade was never built. Rather, the completion in 1938 of the cabin group and recreation hall ended the YPC's last major investment in its Mammoth facility.

Modifications to the Mammoth Springs Hotel 1948 to the Present

Between the late 1930s and the end of the 1940s, the YPC made few changes to the Mammoth Hot Springs Hotel. Indeed, there were only two seasons between the completion of its Mammoth facility and the beginning of US involvement in World War II. Although the company had planned to begin the conversion of Lake Hotel to a similar lodge-type facility, the war status put all plans on hold. The YPC closed its hotels at Mammoth, Old Faithful and Canyon early in August of 1942, and with only intermittent service during the war years, the company invested little in its Mammoth infrastructure. During the first season following the end of the war (1945), visitation to the park surged, and increased again in 1946, when the YPC opened most of its hotels. However, 1946 was a difficult year for the company, due to its inability to find experienced help and the scarcity of building materials.

The following year, brought a new directive from the Secretary of the Interior, Julius Krug, regarding safety in the national parks. On June 17, 1947, Krug issued a memorandum which called for sprinkler systems in all hotels made of combustible materials that exceeded two stories in height. In fact, the YPC was in the process of installing sprinkler systems at Old Faithful Inn and at Canyon Hotel, but had not anticipated doing the same

⁷⁸ W. H. Fay to W. M. Nichols, January 18, 1938. Folder 1, Box 7, Subseries C: Facilities Management 1920-1976, Series 1: Subject Files, Yellowstone Park Company Records 1892-1979, NARA- YELL.

⁷⁹ Nichols to Fay, February 4, 1938. Folder 9, Box 6, Subseries C: Facilities Management 1920-1976, Series 1: Subject Files, Yellowstone Park Company Records 1892-1979, NARA- YELL.

⁸⁰ Nichols to Fay, June 25 1938. Folder 9, Box 6, Subseries C: Facilities Management 1920-1976, Series 1: Subject Files, Yellowstone Park Company Records 1892-1979, NARA- YELL.

⁸¹ Nichols to Douglas Hull McLellan, September 14, 1938. Folder 9, Box 6, Subseries C: Facilities Management 1920-1976, Series 1: Subject Files, Yellowstone Park Company Records 1892-1979, NARA- YELL.

at either Lake or in the 1913 hotel wing at Mammoth Hotel.⁸² Apparently, using an enhanced system of watchmen at Mammoth, the YPC was allowed to open the hotel.

In April of 1948, Regional Director, Lawrence Merriam, sent Superintendent Rogers a letter outlining the circumstances under which the YPC would be allowed to operate the Lake and Mammoth hotels during the 1948 season. If sprinklers were to be installed in 1948, all floors of the two hotels could be operated provided that proper “watchman service” was provided. If the company did not install sprinklers during the 1948 season, only the rooms in the first two stories could be used.⁸³ Merriam stressed that these two options were the only ones under which the YPC could operate without obtaining additional approval from the park service; he urged Rogers to discuss the issue with Nichols early in order to avoid last minute requests for approval before the season got underway.⁸⁴

Rogers notified Nichols of Merriam's memo on May 4, and received a reply on May 11: “Regarding Mammoth Hotel: provided the travel this summer is up to expectations and that the international situation does not grow worse to the extent of seriously curtailing operations in the Park, we will arrange with the Grinnell Company to install a sprinkler system in the Mammoth Hotel and General Office building this year.”⁸⁵ Nichols also complained about having to post signs in each room showing the locations of the exits: “I still question the necessity for these signs, or their efficacy, but in view of your letter we are taking steps to have them made as soon as possible and will install them as soon as received.”⁸⁶ Although Nichols agreed to the installation of the automatic sprinkler system, the plans for its installation were not approved until September of 1948—well towards the end of the season; the system was not completed until the following year.⁸⁷ Figure H-10 shows the business lobby as it appeared in the early 1950s.

⁸² Culpin, *For the Benefit and Enjoyment of the People*, p. 93.

⁸³ Lawrence C. Merriam, Regional Director to Superintendent, Yellowstone National Park, April 20, 1948. Folder 1 (Yellowstone Park Company – Buildings, January 1 – June 30, 1948 2 of 2), Box 24, Series VII Records of Buildings and Facilities, Commercial Visitor Services Records 1916-Present (Catalogue No. YELL 123367), NARA YELL.

⁸⁴ Ibid.

⁸⁵ W. M. Nichols to Edmund B. Rogers May 11, 1948. Folder 9 (Yellowstone Park Company Buildings, January 1 – June 30, 1948), Box 23, Series VII Records of Buildings and Facilities, Commercial Visitor Services Records 1916-Present (Catalogue No. YELL 123367), NARA YELL.

⁸⁶ Ibid.

⁸⁷ Lawrence Merriam (Regional Director) to Edmund B. Rogers, December 20, 1949. Box 24, Folder 4 (Yellowstone Park Company – Buildings and Building Equipment, 1949, 1 of 3), Series VII Records of Buildings and Facilities, Commercial Visitor Services Records 1916-Present (Catalogue No. YELL 123367), NARA YELL

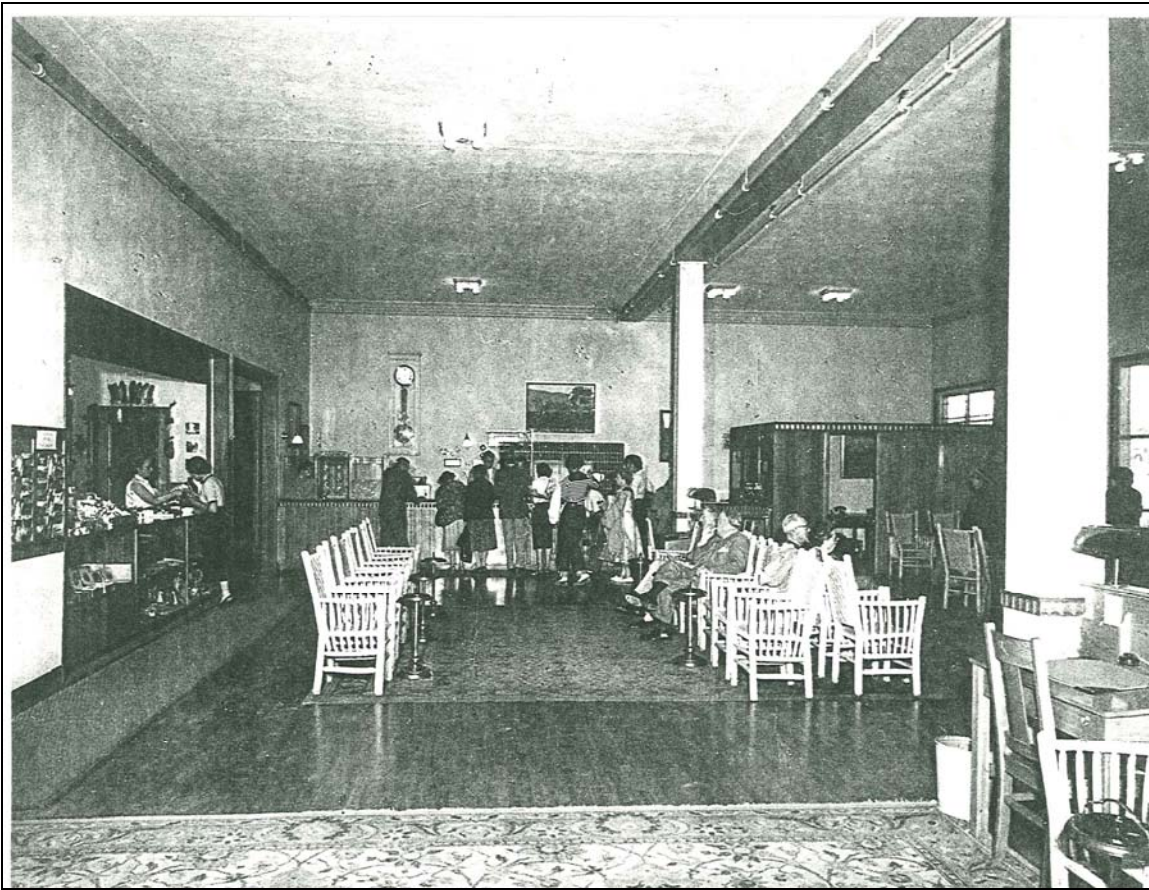


Figure H-10. "Mammoth Springs Hotel Lobby, 1954." This photo is looking east towards the registration counter and the manager's office both located adjacent to the wall separating the business lobby from the lounge / Map Room (Photo No. H-54079, Haynes Foundation Collection, Montana Historical Society, Helena, Montana).

During the 1950s, the YPC's Mammoth facility performed the poorest among all of its Yellowstone hotels, with a fifty-eight percent occupancy rate. Attempts to reverse the trend by advertising the facility's low costs were not successful, and by the early 1960s, both the agency and the company agreed that remodeling the facility to accommodate conventions, might reverse the trend. The YPC commissioned Orr Pickering & Associates of Billings, Montana to design modifications to the hotel building. This remodel would have resulted in the construction of an addition on the west end of the lobby (Figures H-11 and H-12), converting office space to meeting rooms, and the installation of a bar within the north end of the lounge (Figure H-13).

The National Park Service did not approve the modifications drafted by Orr Pickering, instead opting for some rearrangement of interior space, including the remodeling of the business lobby and lounge (aka the Map Room). In order to make the lounge more accessible, an opening was cut in the south half of the wall separating it from the business lobby. The large opening had no door, but did have fixed, frosted glass lights on either side of the opening, enhanced with a wood-patterned screen. This modification required moving the wood-inlaid map of the United States from the west wall of the lounge to the north wall, east of the pocket doors leading to the elevator hall. In the business lobby, the southwest corner of the space (the area originally occupied by the telegraph office) was remodeled into a gift shop. The registration counter, remained in its original location at the north end of the east lobby wall, but the manager's office south of the counter was displaced by the new entrance into the lounge. The area originally used for the news stand, was converted to a "travel center." In addition, because the National Park Service warned that the rates charged to customers

would be lowered unless the company's facilities were upgraded, the YPC placed new beds and furniture in its 124 hotel rooms at Mammoth.⁸⁸

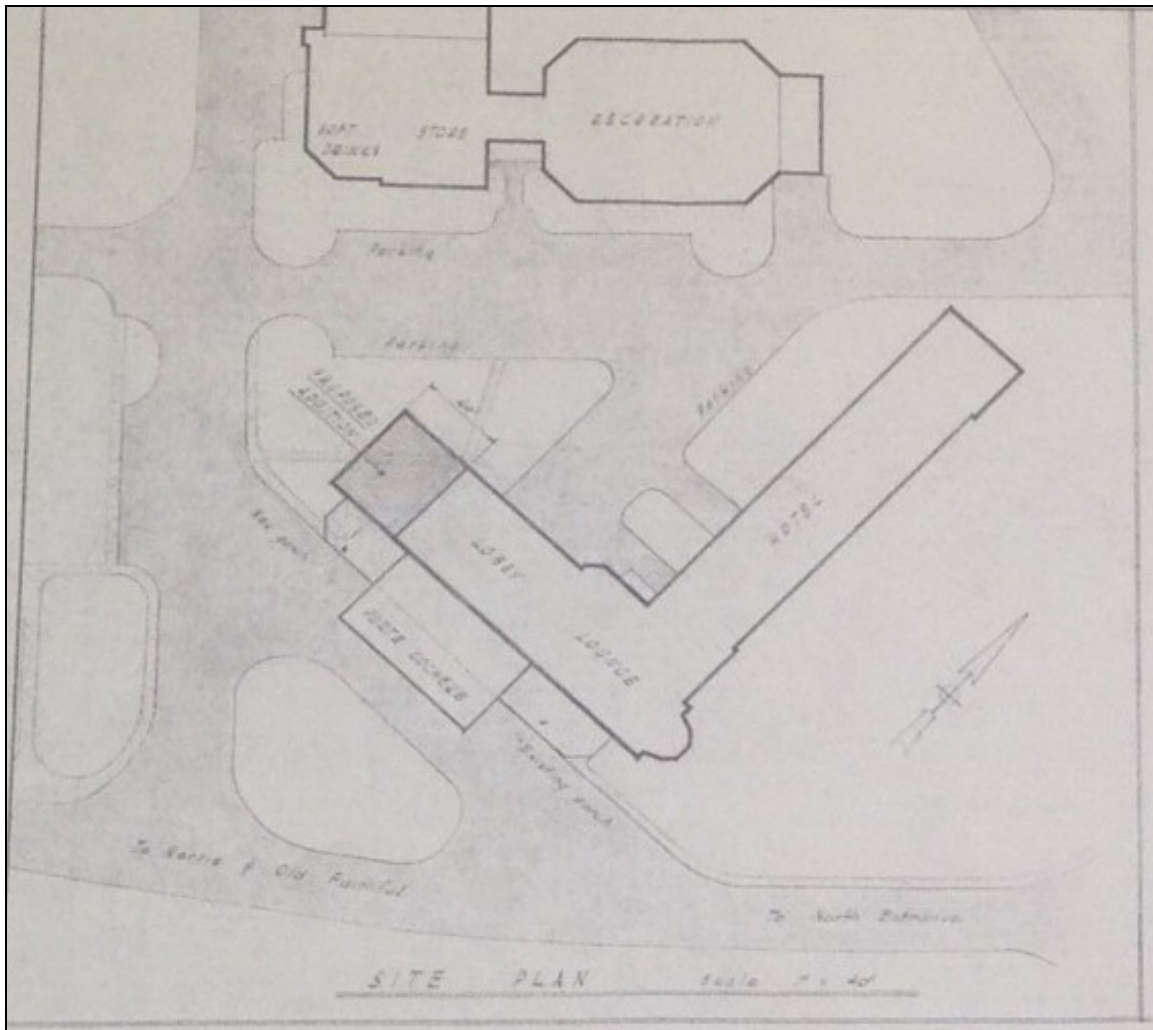


Figure H-11. Portion of Sheet 2, Site Plan and Elevation "Proposed Additions & Alterations to Mammoth Hotel Building." File 428, Subseries A: Architectural Drawings 1903-2006 & undated, Series V: Facilities and Maintenance 1903-2007 & undated, Maps and Drawing Collection (Catalogue No. YELL 145676), NARA YELL.



Figure H-12 Portion of Sheet 2, Site Plan and Elevation "Proposed Additions & Alterations to Mammoth Hotel Building." File 428, Subseries A: Architectural Drawings 1903-2006 & undated, Series V: Facilities and Maintenance 1903-2007 & undated, Maps and Drawing Collection (Catalogue No. YELL 145676), NARA YELL.

⁸⁸ James R. McDonald Architects, *Historic Structures Report Mammoth Hot Springs Hotel*, 1995, p. 30.

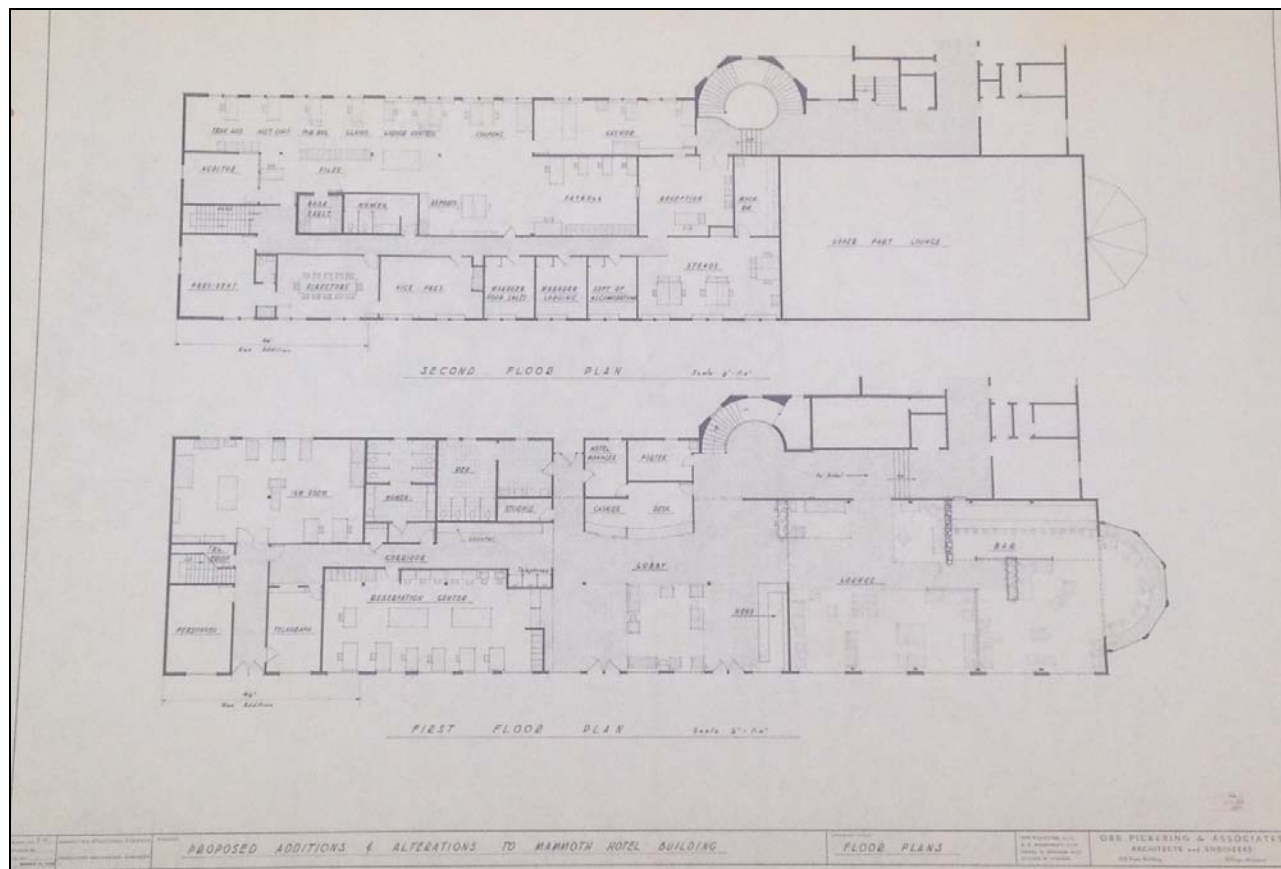


Figure H-13. Sheet 1 First Floor Plan, "Proposed Additions and to Mammoth Hotel Building." File 428, Subseries A: Architectural Drawings 1903-2006 & undated, Series V: Facilities and Maintenance 1903-2007 & undated, Maps and Drawing Collection (Catalogue No. YELL 145676), NARA YELL.

Few modifications were made during the 1970s, other than the installation of a free-standing wood stove on a circular base in the approximate center of the lobby sitting area (Figure H-14). In the early 1990s, this wood stove was replaced with a newer model. The new stove was placed in the area formerly occupied by the original registration desk, the latter function having moved into the area originally used as a news stand, and subsequently as a "travel center."

During the 1980s, after the YPC had sold its holdings, another round of improvements were made to the hotel. In 1980, the area for the gift shop was further enlarged by expanding into the lobby seating area (Figure H-15). This area had been used for some time as expanded space for the gift shop, by extending an awning over a counter and shelving unit. In 1986, the fire prevention systems in the building were upgraded, including: new fire doors, upgraded fire escapes, a new sprinkler system, additional fire alarm stations and horns, and smoke detectors in the hotel wing. About the same time, acoustic ceiling tiles were replaced with gypsum board. The fire escape located in the east wall of the lounge, north of the bay, may also date to 1986. In 1988, one of the first projects undertaken by the concessioner's new facilities manager was the installation of a pair of swinging doors in the opening in the wall separating the lobby from the lounge/Map Room.⁸⁹

⁸⁹ 2014, personal communication with James R. McDonald.



Figure H- 14. "Mammoth Motor Inn Lobby" 1976, showing the circular wood stove (Photo No. 31136-1, Box F-52, Bay 1, Yellowstone Photo Archives).



Figure H-15. "Gift Shop Construction at Mammoth Hotel," June, 1980. (Photo No. 31157-1 Box F-52, Bay 1, Yellowstone Photo Archives)

During the 1990's several projects were completed that enhanced the hotel. In 1994 the front registration desk was modified for better computerization of the registration process. Sometime after 1995, the original shell-shaped drinking fountain was reinstalled in the lobby. In 1997 the exterior metal stairs to the administrative offices and to the guest wing were enclosed to meet code and provide a safe stairway during the winter months. The exterior of the building, especially the guest wing, was repainted and some of the siding materials were repaired or replaced in-kind. Also, the United States map in the Map Room was conserved. The conservation project included the removal of the map from the wall. All of the individual pieces of wood were removed, cleaned, and then re-glued on the substrate and the map was reattached to the wall. The original brass railing was reinstalled to prevent visitors from touching the map surface.

Between 2000 and the present, several projects have been undertaken to enhance the visitor experience and protect the building from deterioration. In 2001 the exterior doors to the lobby were upgraded with new exiting devices. In 2002, an ADA accessible ramp was installed between the lobby and the first floor of the guest wing. The railing for the new ramp incorporates part of the original wall map railing not used in the map conservation project. In 2004 a gas fireplace was added to the lobby to be compatible with the adjacent historic fabric of the wall materials. This is used principally during the winter season.

Over a seven-year period between 2005 and 2012, most of the guest wing rooms were renovated. Bathrooms with a shower and toilet have been added to most of the rooms that previously lacked baths, and the then-existing bathrooms were renovated. Work included upgrades to the electrical system, plaster repair, application of new paint on the walls and the installation of new carpet in the rooms and corridors. Several of the rooms on the south end of the building were converted into guest suites.

In 2008 the windows in the Map Room were rebuilt to provide more stability to the window units. The glass was replaced with a low-e insulated glass to cut down on the ultraviolet light entering the space and damaging the map. New curtains were also added. The roof over the lobby and Map Room was replaced with wood shingles in-kind. In 2012 the public bathrooms in the lobby were renovated to meet ADA access requirements and to provide space for sustainable fixtures donated by Kohler.⁹⁰ In 2013 the exterior walls and windows were repainted.

The following architectural description, condition and photos show many of these changes to the hotel.

⁹⁰ During the 2012 renovation of the public bathrooms in the lobby, the architects found that the original west side bathroom windows had been filled in. The date of this modification is unknown, but likely occurred when the restrooms were enlarged.

C. ARCHITECTURAL DESCRIPTION

Exterior

The hotel consists of two architectural elements: the 1913 guest room wing and the 1937 lobby / Map Room addition.

The 1913 wing is a flat-roofed four-story wood frame structure connected to the northeast quadrant of the lobby / Map Room. It is rectangular in plan, terminating in projecting pavilions on the north and south ends of the east elevation. A three-sided stair tower forms the transition between the lower two floors of the guest wing and the north side of the newer lobby / Map Room. The exterior of the guest wing is finished with wide horizontal lapped wood siding, which is painted. An entablature terminates the siding at the roof and a narrow water table skirt board covers the joint between the siding and the poured concrete foundation. Window openings are uniformly spaced on each of the elevations. The windows are one-over-one double-hung; a decorative raised panel is located between the head of the third floor windows and sill of the fourth floor windows of the pavilion projections on the east side. Window heads are finished with a projecting cornice with architrave trim. A metal storm window has been added to the inside of each window. A new metal fire stair serving each floor is located at the north end of the wing; a flat roof covers this open stair. There is a covered stair addition on the center of the west side of the guest room wing, with finish materials similar to the exterior of the wing.

The 1937 stuccoed two-story addition combines the lobby and lounge, or "Map Room." A one-story portecochere projects from the main entrances and has a flat roof supported by doubled square columns with fluting. It provides a cover for a two-car wide drive-through for the full length of the lobby. The two-story lobby portion has a hip roof covered with wood shingles and a shallow eave; the first floor houses guest registration, the gift shop, activities desk, and bellman, while administrative offices occupy the second floor above the lobby. The one-story "Map Room" is attached to the lobby on the east side; it has a wood shingled gable roof also with a shallow eave. A five-sided window bay with a flat roof terminates the room on the east end. A concrete terrace outside the Map Room on the south side is separated from the sidewalk with a decorative wrought iron railing. A three-sided enclosed stair tower with a hip roof is attached to the northeast side of the building and has the appearance of a turret. An open stair serving the upper floor is also located at the back northwest end. The exterior walls are stucco finished at the top with a frieze running around the entire structure above the first floor windows and a detailed trim at the base to separate the foundation from the upper walls. There are ornamented medallions in the frieze above the windows; a scalloped trim board at the line of the Map Room eave also runs continuously around the building forming the top line of the frieze. Vertically fluted panels resembling pilasters are located at the building corners, between the windows on the south side, and at regular intervals on the north facade. Windows on the first floor of the south facade are wood framed and vary from 2-wide x 3-high at the lobby and gift shop, to 3-wide x 4-high at the Map Room facade. The projecting bay windows are 2-wide x 4-high. On the west and north elevations, and the second floor, the windows are wooden one-over-one double-hung, coordinating with the guest wing. On the second floor they are doubled with a center mullion; on the first floor the configuration of openings varies. The enclosed west stair has three vertical window openings each, with 1-wide x 4-high fixed lights; the openings are stepped to follow the run of the stair. There are two pairs of flush wood entrance doors on the south facade with single lights in the upper half. The rear entrance doors have full lights and are recessed in an alcove. The steps are protected by a shingled hip-roofed hood supported by square columns.

Interior

The 1913 wing interior retains plaster walls in the corridors with painted wood base, picture molding and architrave door trim. The transom openings above the doors have been filled in and painted over. Steam radiators located at regular intervals down the corridor are original. The flat ceilings are also plaster. An

exposed fire sprinkler system runs lengthwise down each side of the corridors close to the ceilings. The original pendant light fixtures remain. The floors are carpeted with the exception of the upper floors, which have a central carpet runner with exposed wood on each side. A recent improvement to the first floor corridor created a ramp up from the stair tower to the elevator adjacent to the guest room wing.

The guest rooms have plaster walls and ceilings, painted base and architrave trim. Plumbing fixtures are claw foot tubs, wall mount sinks and floor mounted, direct flush toilets in the original room baths. Sinks are located in bathrooms and / or in the rooms themselves. The floors are carpeted; all windows have drapery.

The lobby is a long rectangular room with two painted, square-fluted columns that support a painted center beam running the length of the room. The floors are finished tongue and groove maple. The walls are plaster with an applied decorative wood chair rail whose scalloped design echoes the similar exterior trim. The plaster ceiling is flat with painted molding at the walls. There are two large openings in the north wall; one is for the registration desk, the other leads to the enclosed stair tower and the corridor to the first floor guest rooms. The registration desk has a mahogany face panel and trim; there is a wood roll-down door to close the desk from view. The adjacent stair tower continues the plaster wall and decorative wood trim. This space creates the connection from the 1913 wing and the newer lobby and lounge. The stair is curvilinear and has a mahogany balustrade and wainscot on the perimeter wall. A short wood door with two recessed panels is located in the middle of the curved solid rail wall. Other interior wood doors in the lobby area feature three recessed panels. The double-door entry to the guest room corridor is set into a truncated arched opening with fixed transoms and sidelights. These doors have three divided lights each.

A freestanding information desk sits in the lobby next to the registration desk. It is of similar height to the registration desk and has a mahogany face and detailed wood trim. The south wall contains the entry doors and windows, all of which are trimmed in wood. There are low steam radiators in front of the windows. The mahogany trimmed windows to the Map Room are on the south end of the east wall of the lobby; the double glass doors in the east wall between the lobby and Map Room were added in 1991. A new freestanding wood stove and stack stand to the north end of the same wall. The window glazing in the Map Room entry is obscure / textured glass; the double doors have three lights each, and black metal handles and push bars.

The area at the west end of the Lobby has been partially infilled to create an entrance to the gift shop. Clear vertical tongue and groove boards have been used as a wall finish below a large soffit extending the width of the room from the entry doors; new cylindrical light fixtures have been added on the wall and soffit. A contemporary sign is positioned diagonally on the wall adjacent to the shop entry. A commercial-type storefront with metal frame door and windows create the shop entry. The gift shop is new construction with sheetrocked walls and ceiling; a lighting grid has been applied to the ceiling and uses new adjustable spotlight fixtures. The floors are carpeted. Various types of new display cases are arranged within the space and on the walls.

The Map Room is a long rectangular space with a five-sided window bay at the far east end. The walls are paneled floor to ceiling with 4' x 8' sheets of clear Philippine mahogany with flush joints. Honduran mahogany has been used for replacement or new trim. The north wall contains the inlaid wood map of the United States; a long wood rail extends the length of the map and serves to keep people away from it. The rail is supported by decorative metal brackets attached to the floor and wall. A double-door opening to the guest room corridor is also located in the north wall. These new sliding doors are mahogany, detailed to match the original finish in the room. The stucco ceiling is new, with original surface mount and new recessed light fixtures. There is a concealed fire sprinkler system in the ceiling. A continuous wood molding with a scalloped detail is located at the perimeter of the ceiling. The flat ceiling of the window bay is at a lower height than the rest of the room; a projection screen is mounted to it. There are several wall mounted speakers in the room. The floor is tongue

and groove maple. Furniture in the space consists of new stacking chairs, used for presentations, and some fully upholstered seating that matches the lobby furniture. Compatible wood writing desks and chairs, original to Canyon Hotel ca. 1930, are arranged along the south exterior windows.

Structural Systems

The building contains crawlspaces, but no basement areas other than an elevator equipment room. The crawlspace areas are provided with draft stops. The building's foundation system consists of cast-in-place concrete foundation walls, assumed to bear on conventional concrete spread footings. The top of the foundation walls extends to the bearing elevation of the main level floor joists. The guest wing floor is supported between the exterior concrete foundation walls by two rows of wood columns bearing on concrete strip footings running the length of the wing. The lobby wing is also supported between foundation walls by multiple rows of wood columns bearing on concrete spread footings running the length of the wing.

The floor systems for all floor levels in both the 2-story lobby addition and the 4-story guest wing of the building are wood frame construction. The framing on the first floor consists of diagonal board sheathing over 2"x12" joists spaced at 16 inches o.c. in the guest wing and diagonal board sheathing over 3"x10" joists spaced at 16 inches o.c. in the lobby wing. The joists are supported by built-up floor beams made of four 2"x12" members in the guest wing and three 3"x10" members in the lobby area. The floor beams are supported by the wood columns described above. The framing for the second floor above the lobby is 2"x12" joists spaced at 16 inches o.c. The floor joists are supported by a W18x50 steel beam spanning between interior columns above the lobby area. The steel beam changes to a W12x26 at the column in the gift shop and spans to the exterior wall.

The exterior wall systems are all wood frame construction. A steep pitched, steel and wood framed roof system covers the Map Room and second story administrative office area of the building. The framing over the Map Room consists of double angle steel trusses spaced at 16 feet with 2 x 8 I-beam purlins and 2 x6 wood rafters spanning between. The framing over the second story administrative office area is similar construction with more wood supports angled to the wood beams. The roofs of the porte-cochere and Map Room bow windows both consist of low-sloped wood framed systems. The framing wood joists with board sheathing. The guests wind roof system is slightly sloped wood framed rafters spaced at 16" with board sheathing.

Mechanical Systems- HVAC System

The majority of the hotel is steam heated from a central boiler plant located in the basement of the maintenance building northwest of the hotel. The steam is introduced to the hotel crawlspace via a utility tunnel. Most of the steam is a one-pipe system with the lobby addition being the only exception – this area has a two-pipe gravity return system. There are three main steam lines in the utility tunnel. Two are supply and one is a return line. One steam supply serves the lobby addition. The other rises up to the attic space prior to dropping down in the wall cavities to the radiators of the hotel guest rooms and corridors in the guest wing. Insulating of the existing pipes is recommended. The steam pressure in the central plant is maintained at around 7-10 psi.

The cast iron radiators are equipped with thermostatic traps and a combination of thermostatically controlled and manually adjustable supply valves for the two-pipe systems. The one-pipe radiators are equipped with a manually adjustable air vent with a liquid filled temperature-sensing element.

Temperature control has been a major problem in the building. A lack of understanding of the system by the guests requires the maintenance staff to have to enter the rooms and manually set the temperature to an

appropriate level. Un-insulated steam pipes located in the walls and attic spaces also contribute to this temperature control problem.

The bathrooms located inside the guest rooms are mechanically ventilated via two centrifugal fans located in the attic area. One fan serves the northern end of the guest wing and the other serves the south end of the guest wing. A third roof-mounted fan serves the central bathrooms for guest rooms without shower and bathroom facilities. Small wall-mounted air circulators with washable filters are also installed in the rooms with showers.

The 2nd story administrative area over the lobby is heated by a combination of electric baseboard and steam radiators units. Air conditioning is provided via window units.

The crawlspace is ventilated through the foundation wall with vents capable of being closed throughout the winter months. The space is not heated but receives appreciable heat gain from non-insulated steam and domestic hot water pipes.

The public rest rooms adjacent to the lobby are mechanically ventilated with an in-line fan located above the ceiling, which discharges out the north wall.

Thermostatic radiator valves provide temperature control for each steam radiator in the guest rooms. A large motorized valve controls the steam supply to the Map Room and the two-pipe systems have manually adjustable valves and thermostatic traps at each radiator.

Plumbing System

There are two domestic cold water entrances supplying the hotel via the utility tunnel. The cold water service lines are galvanized steel pipe. The hot water supply and re-circulating lines are also fed from the utility tunnel from the central boiler plant where the water is heated. The domestic hot water lines are copper pipes. None of the domestic water piping is insulated.

Hot water is supplied to the hotel at 140 degrees. A pair of thermostatic mixing valves has been installed in the crawlspace due to temperature control problems and pressure fluctuations in the domestic water system.

A small number of shower valves have been changed out to pressure balanced thermostatic mixing type as rooms have been remodeled. None of the plumbing fixtures in the guest rooms are ADA compliant.

Most of the sinks, water closets, and bathtubs in the rooms are considered historic and are refurbished as each room is remodeled. The trim is typically upgraded and matches the original fixtures.

Most of the original drain waste and vent piping is cast iron hub and spigot. Much of this pipe is encased in insulated troughs in the crawlspace. Recent modifications to the sewage system were done using PVC DWV Piping.

The building is fully protected with a dry pipe fire sprinkler system served by two dry risers that are located on the west side of the guest wing in a heated enclosure. This system was installed in the mid-1980's and is in good condition.

Electrical Systems - Existing Electrical Utilities

Mammoth Hotel had a utility upgrade in the 1980's using the 6 disconnect rule. Presently the utility feeds the current transformer cabinet and then is connected to 6 disconnects. The 6 disconnects feed panels inside the

building that pick up all electrical needs of the building. The disconnects are not labeled to identify the panel they serve. The maximum number of disconnects you can have for a service is 6 per the National Electrical Code (NEC). The service is old and has fulfilled its useful life, the parts will be harder to find and no more disconnects to the service are allowed. The addition of the elevator and all facts above, a new service will be required at the structural upgrade phase and will be planned out with the master plan of the renovation of the whole hotel in mind.

Existing Electrical Power Distribution

The existing electrical panels that are fed from the 6 disconnects are as follows:

Disconnect 1; 120/208 volt, 3-phase, fused at 150 amps. Feeds Panels L1A, L2A, L3A, L4A. These panels are stacked on each hotel floor and are connected with feed thru lugs; L1A – 1st Floor, L2A – 2nd Floor, L3A – 3rd Floor, L4A – 4th Floor. These panels feed the hotel rooms and suites. Panel L1A also has a 100 amp, 3-pole breaker that feeds the crawl space panel. The crawlspace panel also serves two small panels on the 2nd floor which feed electric heaters and a few receptacles.

Disconnect 2; 120/208 volt, 3-phase, fused at 100 amps. Feeds Panel L1B. This panel is located behind a false door in the main corridor 149 next to the spiral staircase. This panel feeds miscellaneous receptacles and lights in the front entry, Map Room, etc. This panel also has a 70 amp, 2-pole breaker that feeds a junction box in the crawlspace that splices and feeds a disconnect for the ski hut and feeds the 1st floor panel at the espresso area.

Disconnect 3; 120/208 volt, 3-phase, fused at 100 amps. Feeds Panel L2B. This panel is located in the 2nd floor office lounge. This panel feeds miscellaneous receptacles and lights in the office area, etc. This panel also has a 100 amp, 3-pole breaker that feeds a panel in the Network Room, and a 50 amp, 2-pole breaker that feeds the panel on the other side of the wall from L2B and feeds the office area.

Disconnect 4; 120/208 volt, 3-phase, fused at 100 amps. Feeds Panel L1C. This panel is located on the main floor in the corridor outside the gift shop. This panel feeds miscellaneous receptacles and lights on the main floor area, etc. This panel also has a 70 amp, 2-pole breaker that feeds a panel in the gift shop.

Disconnect 5; 120/208 volt, 3-phase, fused at 100 amps. Feeds Panel LEM. This panel is located behind a false door in the main Corridor 149 next to the spiral staircase (right next to panel L1B). This panel feeds lighting loads on the 1st floor.

Disconnect 6; 120/208 volt, 3-phase, main circuit breaker at 150 amps. This disconnect is an exterior panel with a main breaker located next to all the other service disconnects. This panel feeds the elevator, a panel in the Fire Room, elevator control and a receptacle located on each floor next to the stairs in the middle of the Hotel.

Handicap Accessibility

The Hotel is accessible by the main entrance doors to the first floor spaces. Accessible bathrooms are located within the lobby on the first floor. The first floor of the guest room wing is also accessible, but there are no accessible guest rooms. The elevator does not meet the minimum accessibility requirements of the code. There are handicap parking spaces in various locations around the hotel building.

CONDITION

Site

The building is located on a relatively flat site. No poorly drained areas of the site were observed, however, the drainage is poor against the building. Issues with the locations of downspouts and roof drainage are causing damage along the building base in those areas.

Landscaping around the building is mainly grass which is irrigated with a sprinkler system. The three cottonwood trees on the west end of the lobby appear to be in poor condition with some dead areas and rot. The lawn is well maintained.

The building is surrounded by paved access roads including the area under and along the porte-cochere on the front of the building. These roads are in good condition. Paved walkways are provided to all public entrances and appear to be in fair to good condition.

Paved parking is located on all sides of the building with the exception of the east side, which is all lawn. Handicapped parking spaces are provided at various locations around the building, but the front of the building is the only access to the hotel. All other entrances are not accessible.

Architectural

The exterior finish on the lobby and Map Room portion of the building is stucco with wood ornamentation panels, trim and moldings. Pre-existing deterioration of the stucco and some of the wood elements are beginning to become apparent. Substrate deterioration should be anticipated and may explain why the stucco is again telegraphing pre-existing cracks and defects. The stucco deterioration is occurring mainly on the north and west sides of the lobby wing. Long range planning should include rehabilitation and restoration of these elements rather than simple patching and painting. The wood elements will require stripping to bare wood, and rehabilitation. Priming and painting still needs to be addressed in some areas. The exterior finish on the 4-story guest wing of the building is wood lap siding and trim. Except for isolated instances, these elements are in generally good condition and should only require normal periodic maintenance painting for the foreseeable future. The exterior of the building has been painted within the last two to three years.

The majority of the exterior door and window elements on the building are wood. They are generally in good condition with some minor maintenance needed. All of the double-hung wood windows in the 4-story guest wing and in the 2-story area of the lobby addition are deteriorated, except for the newer windows in the stair towers. The windows do not meet the energy code. The windows in the guest wing will require updating to correct the loss of energy in the building. Tall, fixed wood windows occur at the main stair tower. There is some wood sill deterioration. The added glass for fire protection is trapping moisture inside the air space.

The large windows in the Map Room have been replaced in-kind and are in good condition. The large wood window units in the south wall of the lobby and gift shop are under the protection of the porte-cochere, except for the western-most one, and are in generally good condition. The windows in the gift shop are in good condition but the existing glass does not cut down the ultra-violet rays that are deteriorating the gift shop items.

The roof over the lobby and Map Room have a steeply pitched, wood shingle roof covering. There are some curled shingles on the south side of the roof which can potentially allow water into the building. The wood shingle roof on the back side of the Map Room slopes towards the guest wing and does not drain properly, causing damage on the east side of the building. A small dock roof on the west side of the guest wing also has wood shingles and is poor condition.

The majority of the low-slope roof areas of the building have a black EPDM single ply membrane roof covering. Incidental roof areas at the transition from the Map Room shingle roof to the south and southwest walls of the guest wing have a heat-weldable gray TPO membrane roof covering. The low-slope single-ply membrane roof covering for the porte-cochere, Map Room bow window, guest wing and guest wing stair towers is black EPDM. These roofs appear to be in good condition,

Finished wood maple flooring occurs in the Map Room and lobby, as well as the sides of the guest room corridors. The main stair and guest room corridors have carpet down the center and about one foot of finished wood on both sides. The wood floors are in good condition with the exception of some of the corridors.

The public restrooms in the lobby have been totally remodeled in the last couple years and are in good condition. The ceramic tile has been replaced along with the fixtures, stalls and lavatory areas.

The predominant wall finish in the lobby, second floor offices, and guest wing of the building is painted gypsum board or plaster. There are painted plaster ceilings in all areas of the hotel. Most of the plaster work is in fair to good condition. The lobby has a wood wainscot and wood trim that connects to the Map Room and to the main stair and guest room corridors. This wood is in good condition with some minor wear.

The Map Room has finished mahogany wood paneling (with a fire-retardant clear coating) on the walls. The wood paneling is dry and is worn or discolored in some areas because of the sunlight. The new windows have ultraviolet protection, thus eliminating some of the deterioration. There is no documentation that the wood paneling has a fire-retardant finish.

The majority of the interior doors are solid core wood in wood frames in the guest room corridors and paneled wood doors on the interior of the rooms. The lobby has mahogany wood paneled doors that are in good condition. A set of aluminum sliding doors occur at the gift shop.

A set of solid wood sliding doors occur at the north wall of Map Room 147. These historic doors are in good condition but do not achieve the required fire rating as discussed in the Life Safety section and the Deficiency section of this report. However a different solution could be designed so that the historic doors do not have to be changed. The guest wing could have a set of new fire doors separating that area, similar to what occurs on the second through fourth floors. Location will be important.

A general code review is located in Appendix D.

Structural

The basic framing defining the gravity support systems for the Mammoth Hotel has been outlined in the previous architectural sections of this narrative. This section will encompass the description of the lateral load supporting systems of the building as pertaining to wind and seismic loading. These brief overviews are preliminary in nature and should be considered as observations that may, in some cases, need further analysis for consideration.

The Hotel does not meet current seismic standards and is in danger of severe damage or possible collapse in the event of an earthquake resulting in massive injury or loss of life. This facility is located in Universal Building Code (UBC) Seismic Zone 4, the zone with the highest probability of damaging ground-motion. While such zoning and associated design requirements did not exist at the time of its construction, a Rapid Visual Survey of the structure (based on FEMA 273-NEHRP Guidelines for Seismic Rehabilitation of Buildings) indicates that the lateral resisting elements of the building and porte-cochere (shear walls and floor diaphragms) exceed the length-to-width ratios recommended by FEMA. In addition, there is an inadequate

load path to the foundation since there are few or no shear members below the first floor. The short wood columns between the first floor and foundation lack adequate connections top and bottom that would provide resistance to lateral movement. While a detailed seismic analysis may reveal more deficiencies than were visually identified, these listed structural instabilities must be addressed.

The horizontal lateral force resisting systems for this building consist of horizontal board sheathed roof decks and diagonally board sheathed floors. The horizontal lateral force resisting elements of the lobby addition consist of pitched straight board sheathed roof elements and diagonally board sheathed floors. Other horizontal elements consist of the low-sloped porte-cochere of unverified construction, the low-sloped roof above the Map Room bow window and the stair towers.

The vertical lateral force resisting systems are essentially the wood sided diagonally board sheathed exterior wall segments between windows and the plaster and gypsum sheathed interior walls with exception to the partition separating the Map Room from the lobby. This partition is sheathed with wood panels.

It is unclear whether the exterior sheathed walls were designed to be true structural diaphragms. Wall panel fastening and connection could not be verified. Hold-down anchors, which provide shear transfer continuity to the foundation, also could not be verified. Consequently, it is anticipated that the building would sustain substantial structural damage and distortion resulting from a design seismic event.

Although collapse or loss of life may not be probable, injury to occupants is likely. The extent of the resulting structural damage would likely require repair. A detailed seismic assessment, as recommended in a previous condition assessment, has been performed for this building. It does not appear that any corrective recommendations from that report have been implemented.

Although a gravity analysis is beyond the scope of this Condition Assessment, site observations indicate that the gravity systems most likely have adequate capacity.

Mechanical Systems

The heating system is provided by an antiquated one-pipe steam system into cast-iron radiators. The one-pipe radiators are equipped with a manually adjustable air vent with a liquid-filled temperature-sensing element. These valves are difficult to adjust resulting in guest discomfort, frequent maintenance intervention, and inefficient use of natural resources. Aside from comfort issues, the heating system is dangerous. One pipe feeds both the steam heat and domestic hot water system/ therefore the water enters the hotel at 140 degrees, which has caused scalding of hotel guests. Not only does the heating system threaten visitors, it also threatens the historic fabric of the building. For example, the un-insulated steam pipes located in the walls and attic spaces contribute to the temperature control problems, which in turn can cause damage to the historic wall finishes. When the hotel was constructed, it was a summer seasonal facility with no winter operation. Changes in visitor use patterns and expectations have resulted in the hotel being used both in the summer and winter.

Plumbing systems need to be upgraded to meet new code requirements. If budget allows on future projects, we would recommend changing the piping (CW, HW, SAN, VENT) systems in their entirety.

The fire sprinkler system does not meet present codes and has problems. The proposed system would need to be a dual interlock preaction system. This system would require both a fire alarm signal and a loss in air pressure to allow water into the piping.

Electrical Systems

The wiring is very old and original in the hotel rooms as knob and tube wiring, knob and tube wiring does not meet current standards or code. The wiring in the hotel rooms does not have a ground wire installed in the circuit. Conduit was used as the ground path in the areas of the upgrade in the 1980's, but over time the conduit became non-continuous and does not act like a ground. Part of the electrical system consists of knob and tube wiring and historic fixtures. This system is obsolete, has been difficult to maintain, has often been inappropriately modified to meet visitor needs, and does not meet code. Deficiencies relate to amperage capacity of the system, the presence of non-grounded outlets, and the number of outlets (total outlets vary from approximately 25% to 50% of number required by the current NEC Code).

Lighting in the corridors is dim and does not meet the Illuminating Engineering Society (IES) guidelines for foot-candles in a corridor. Emergency lighting, including, exit and egress emergency light fixtures will be included during each phase of construction and spaced according to the requirements of the current code.

The Fire Alarm System does not meet current code requirements for spacing in all public areas for notification.

Low-voltage cabling for phone and data has been surface mounted down the corridors and is not aesthetically pleasing. Concealment and re-routing of systems should be considered during each phase of the project with new network / phone rooms on each floor in a centralized location to limit the cable lengths to under 295 feet.

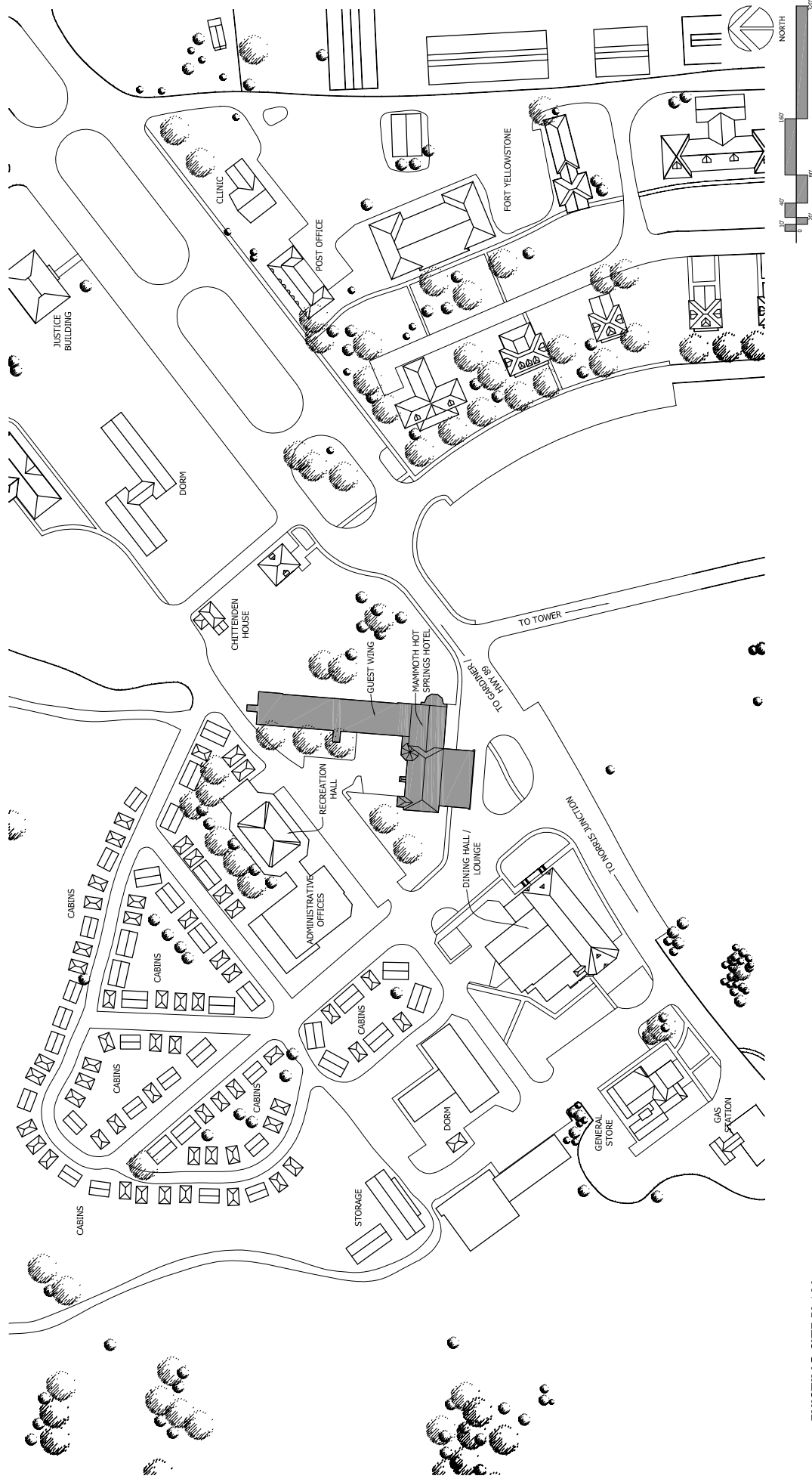
Affected elements of this fire system includes walls, doors, egress, and fire suppression. The wall between the guest wing and lobby and associated doors do not meet the NFPA requirement for one-hour fire-rated construction and must be corrected. There may be other such locations. A similar issue pertains to the elevator, which does not have the code-required two-hour-rated construction and has reached the end of its service life. Not only are the walls, doors, and elevator deficient, but so, too, is the current fire-suppression system, which is a deteriorated dry fire sprinkler system.

Historic Defining Characteristics

With regard to interior spaces, the level of preservation treatment may vary depending on whether the space is considered of primary or secondary significance. For purposes of this report, *primary* spaces are defined as those designed for public access and that retain their original plan and volume, as well as wall, floor, and ceiling finishes. In the hotel primary spaces include all of the public rooms (i.e. lobby, Map Room, gift shop and the main stairs and corridors) including its outside terraces and porte-cochere. Specific treatment recommendations for primary interior spaces will include those that result in the maximum retention of historic fabric, while accommodating updates associated with seismic considerations, health, fire and safety codes and with accessibility statutes. In addition, where sufficient documentation exists, some important small-scale architectural elements or furnishings may be restored in the primary public spaces.

Secondary spaces are defined as those originally designed for utilitarian purposes, i.e, spaces not generally seen by the public, and/or space that retains its original plan, but that has modern finishing materials. This also includes spaces that have been altered over the years to accommodate new uses or alteration of spaces. In the hotel, secondary spaces include the guest rooms, laundry, housekeeping, and storage areas, the utility area in the basement, and the service areas.

The following existing floor plans show the significant areas:



EXISTING SITE PLAN

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Mammoth Hot Springs Hotel

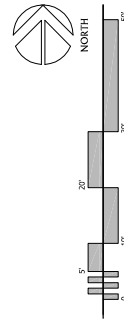
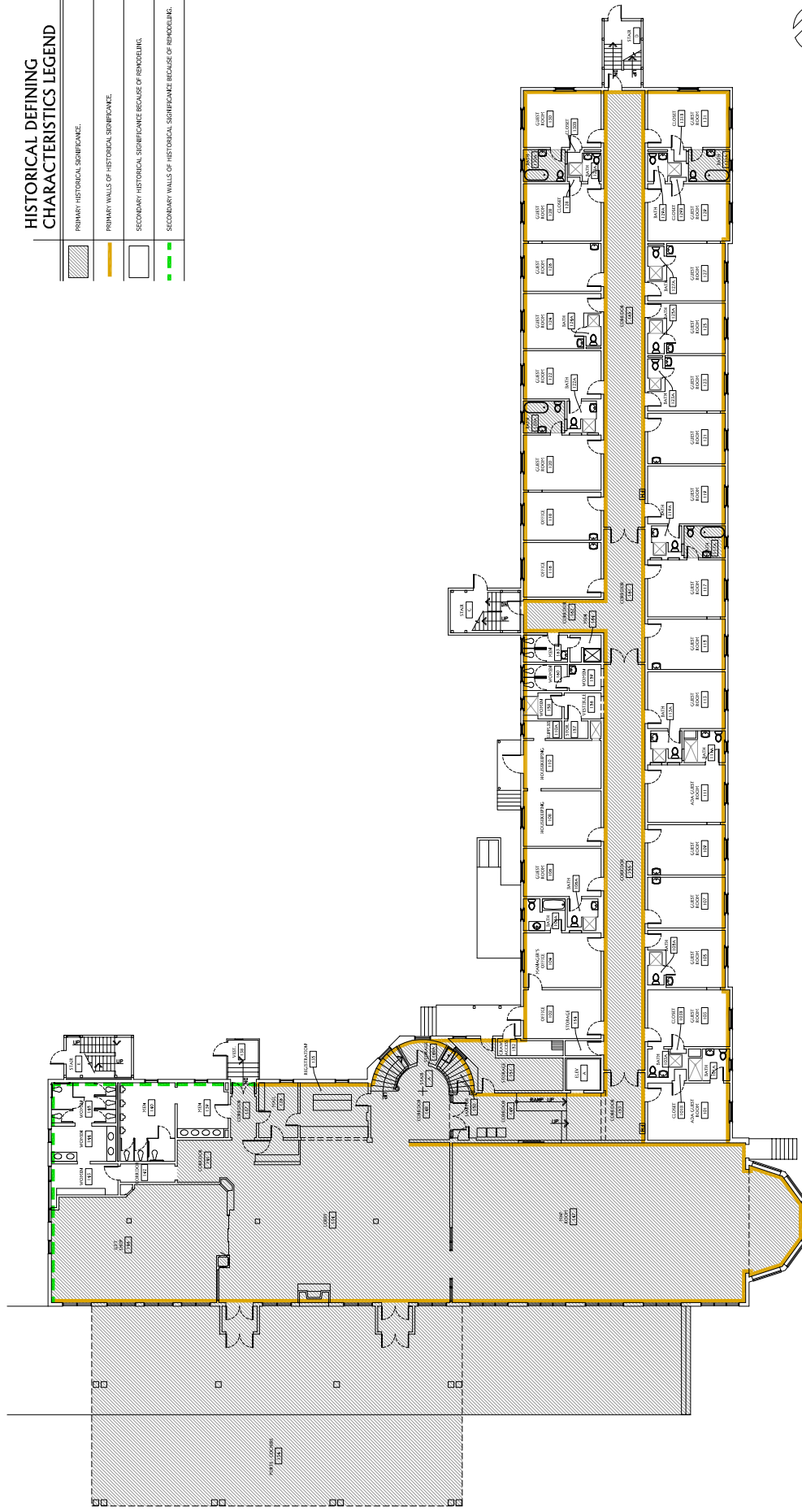
Mammoth - Yellowstone National Park



FIGURE 1
EXISTING SITE PLAN

HISTORICAL DEFINING CHARACTERISTICS LEGEND

	PRIMARY HISTORICAL SIGNIFICANCE.
	PRIMARY WALLS OF HISTORICAL SIGNIFICANCE.
	SECONDARY HISTORICAL SIGNIFICANCE BECAUSE OF RENOVATING.
	SECONDARY WALLS OF HISTORICAL SIGNIFICANCE BECAUSE OF RENOVATING.







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Mammoth Hot Springs Hotel Mammoth - Yellowstone National Park



FIGURE 2
EXISTING FIRST FLOOR PLAN

HISTORICAL DEFINING CHARACTERISTICS LEGEND

	PRIMARY HISTORICAL SIGNIFICANCE.
	PRIMARY WALLS OF HISTORICAL SIGNIFICANCE.
	SECONDARY HISTORICAL SIGNIFICANCE BECAUSE OF RENOVATION.
	SECONDARY WALLS OF HISTORICAL SIGNIFICANCE BECAUSE OF RENOVATION.

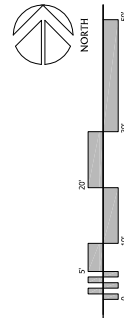
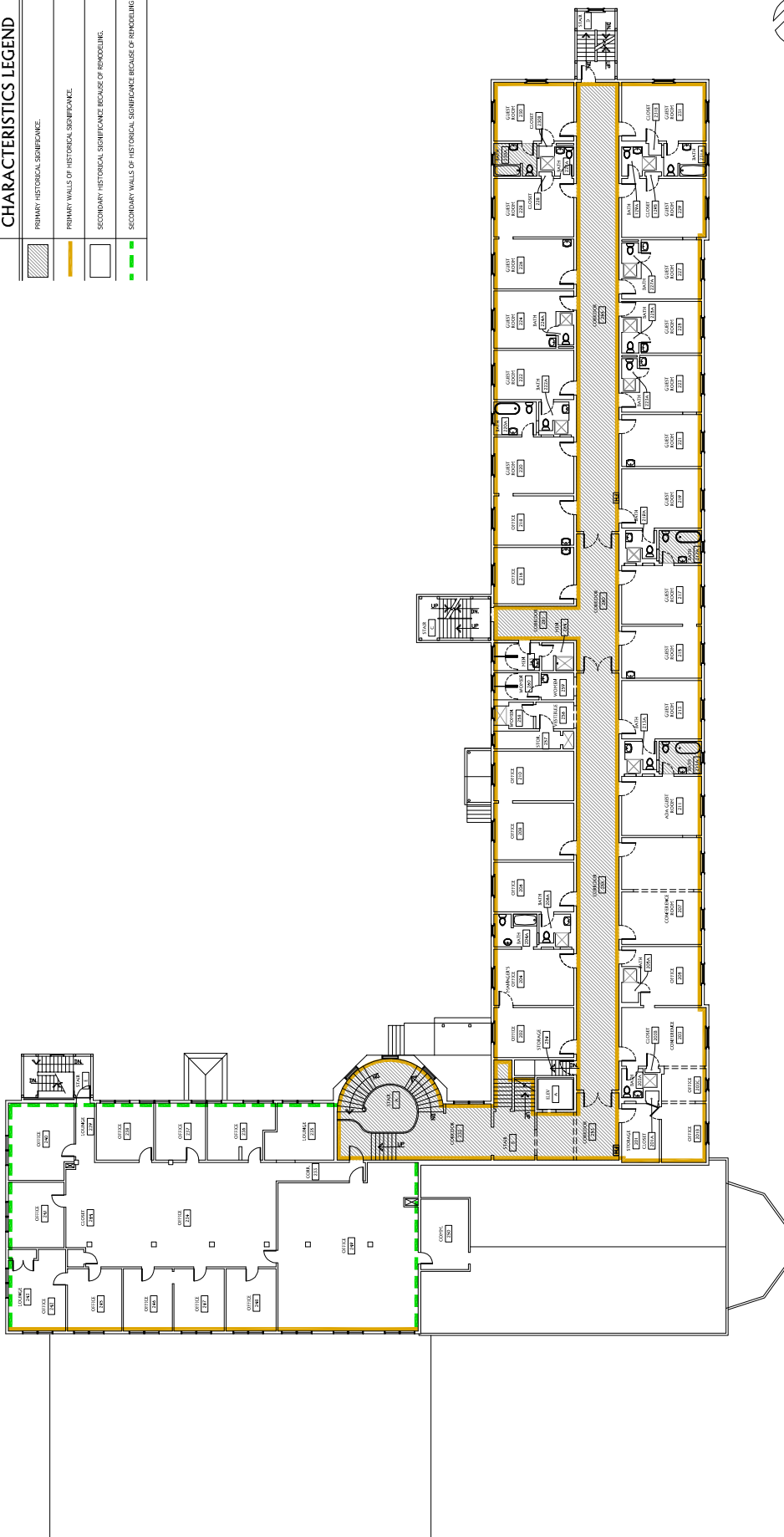






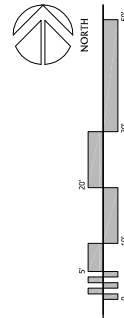
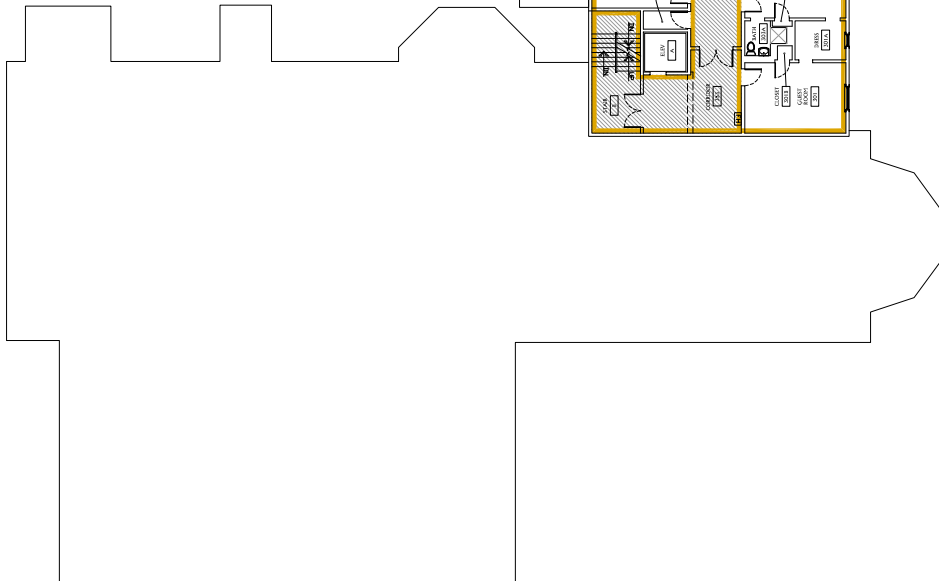
FIGURE 3
EXISTING SECOND FLOOR PLAN

Mammoth Hot Springs Hotel Mammoth - Yellowstone National Park

A&E
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HISTORICAL DEFINING CHARACTERISTICS LEGEND

	PRIMARY HISTORICAL SIGNIFICANCE.
	PRIMARY WALLS OF HISTORICAL SIGNIFICANCE.
	SECONDARY HISTORICAL SIGNIFICANCE BECAUSE OF REMODELING.
	SECONDARY WALLS OF HISTORICAL SIGNIFICANCE BECAUSE OF REMODELING.







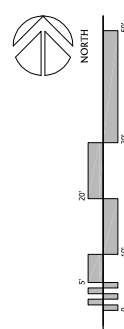
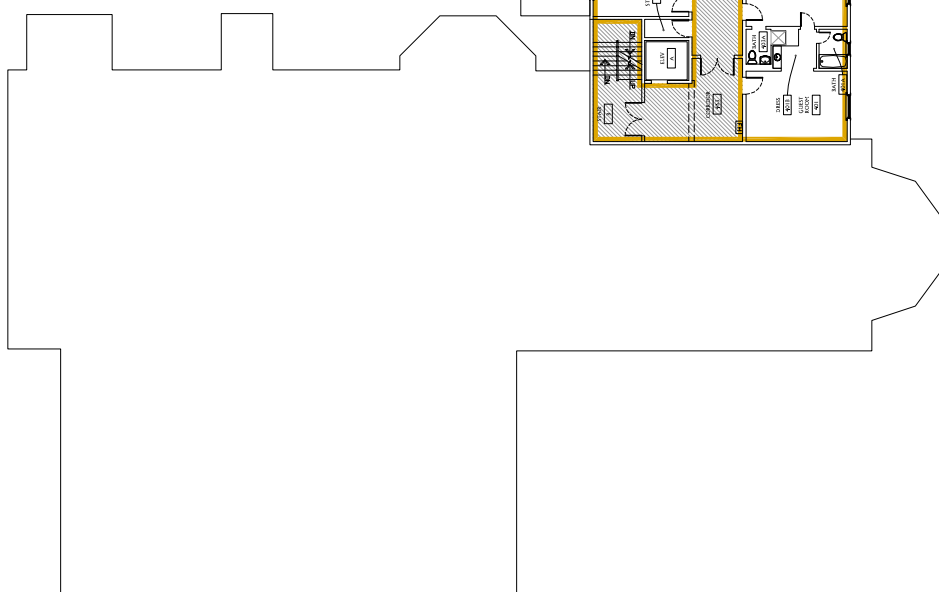
Mammoth Hot Springs Hotel Mammoth - Yellowstone National Park



FIGURE 4
EXISTING THIRD FLOOR PLAN

HISTORICAL DEFINING CHARACTERISTICS LEGEND

	PRIMARY HISTORICAL SIGNIFICANCE.
	PRIMARY WALLS OF HISTORICAL SIGNIFICANCE.
	SECONDARY HISTORICAL SIGNIFICANCE BECAUSE OF RENOVATION.
	SECONDARY WALLS OF HISTORICAL SIGNIFICANCE BECAUSE OF RENOVATION.



Mammoth Hot Springs Hotel Mammoth - Yellowstone National Park



FIGURE 5
EXISTING FOURTH FLOOR PLAN

PHOTOGRAPHS - EXTERIOR



Figure 6: Looking north at the Hotel



Figure 7: Looking north at a typical restored Map Room window. The windows are in good condition.



Figure 8: Looking northwest at the deteriorating sill along the restored windows



Figure 9: Looking north at the front facade and porte-cochere. The flat roof does not drain properly and causes problems of deterioration on the fascia and around the gutter areas.



Figure 10: Looking northwest at typical fluted wood columns on the porte-cochere. Note the deteriorating bases and tops of the columns. Paint is also peeling.



Figure 11: Looking east at a base of the interior columns. Note the rotted wood base.



Figure 12: Looking northeast at the winter vestibule that is added to the front for protection from the weather. This vestibule does not work very well and takes away from the entrance.



Figure 13: Looking north at the intersection of the porte-cochere roof and the wall of the front of the building. The upper office windows and lower gift shop windows are in need of repair. There is some rot in the sills and upper windows are loose.



Figure 14: Looking east at the building. There are several settlement cracks in this wall both on the interior as well as the exterior. Note the air conditioning unit and the filled in windows on this elevation.



Figure 15: Looking southeast at the intersection of the added egress stair enclosure and the original building.



Figure 16: Looking southeast at the upper section of the added egress stair enclosure and the original building. Note the rotted cornice and other wood trim on the original building.



Figure 17: Looking southeast at the rear of the Lobby portion of the building. Note the winter infill of the walls around the rear entrance to the lobby. The windows are in fair condition with aluminum storm windows added to them.



Figure 18: Looking northeast at the west side of the 1913 guest room wing. The wing is in good condition with some minor peeling paint and some rot around the laundry dock. The windows are in fair to poor condition. The window sash are loose and do not work very well. They are covered with aluminum storm windows.



Figure 19: Looking north at the intersection of the enclosed egress stair base and the wing. Note the electrical panels for the wing. Also there is some deterioration of the concrete foundation of the wing because of water penetrating into the base.



Figure 20: Looking east at one of the typical double-hung wood windows with the aluminum storm window.



Figure 21: Looking south at the north end of the wing. Note the later enclosed egress stair. The walls are generally in good condition having just recently been painted.



Figure 22: Looking southwest at the 1913 guest room wing. The wing is generally in good condition with the exception some peeling paint at the base and the windows.



Figure 23: Looking west at the bank of room windows on the east facade of the wing. The wood double-hung windows are in fair to poor condition and are covered with a poorly fitting aluminum storm window.



Figure 24: Looking west a typical wood double-hung with aluminum storm window.



Figure 25: Looking northwest at the egress door and stair from the Map Room. The stair is rusted and the gutter does not work very well from the intersection of the Map Room roof and guest wing.



Figure 26: Looking southwest at the foundation base under the exit stair. Water is penetrating into the concrete foundation and causing some deterioration.



Figure 27: Looking west at the end bay of the Map Room. The windows have been restored and are in good condition. There are some cracks in the base of the bay.



Figure 28: Looking southwest at the lobby towards the gift shop. The anodized aluminum storefront of the gift shop is not compatible with rest of the original charter-defining features of the rest of the lobby.



Figure 29: Looking northwest at the registration desk and stair to the second floor spaces. All of the woodwork is original to the building and in fair condition with some minor wear and dried wood.



Figure 30: Looking southwest at the fireplace in the lobby. This fireplace was added to the lobby.



Figure 32: Looking south at the front entrance doors that appear to be original to the lobby. Note the historic ceiling fixtures and aluminum storefront to the gift shop on the right.



Figure 33: Looking east at the lobby towards the Map Room entrance. Note the espresso cart on the left of the entrance and the bellman's desk to the right. Generally the historic plaster and woodwork is in good condition.



Figure 34: Looking west at the entrance to the gift shop. The aluminum storefront is not compatible with the rest of the lobby.



Figure 35: Looking west at the gift shop from the lobby. The materials are generally in good condition. The lighting fixtures are not very energy efficient.



Figure 36: Looking north at the gift shop.



Figure 37: Looking east at the gift shop towards the lobby windows. The space is very crowded.



Figure 38: Looking west at the corridor and entrance to the women's bathroom. The wood trim and the wood paneled doors are original to the space.



Figure 39: Looking north at the water fountain that had been removed and then replaced in the lobby. It is in good condition but is not easily operated.



Figure 40: Looking north at the back entrance from the lobby to the recreation hall and cabin area. The doors on the entrance and the doors to each side are original.



Figure 41: Looking east at the entrance door and lavatories in the men's restroom. This space has been remodeled in the last few years



Figure 42: Looking west at the urinal area. Note the tile floors and wainscot. The materials are in good condition.



Figure 43: Looking south at the toilet area. The ventilation of the space is poor.



Figure 44: Looking east at the window and cast iron radiator. The window is in fair condition. The heating system is not very efficient.



Figure 45: Looking east at the entrance to the Map Room. The doors and glass were remodeled in 1988 to be more compatible with the rest of the historic materials and design.

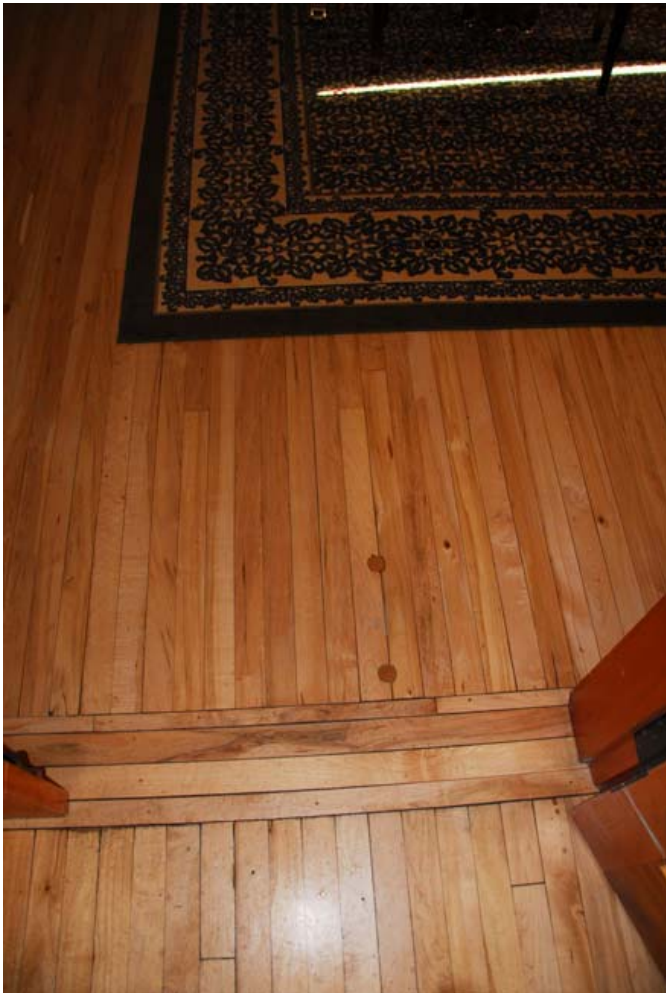


Figure 46: Looking down at the wood floor at the entrance to Map Room. The two round wood pieces were the holes for railing attachment when the map was on this wall.



Figure 47: Looking east at the Map Room. The wall paneling and the woodwork is all original to the space. The wood is dry and has some stains because of the ultraviolet light from the windows.



Figure 48: Looking east along the restored windows on the east and south sides of the Map Room.



Figure 49: Looking north at the bay window area and the exit from this end of the room.



Figure 50: Looking north at the restored map in the Map Room. There are still some areas that are starting to delaminate because of the heat within and behind the wall.



Figure 51: Looking northeast at the map and surrounding wall. The wood is weathered because the wood was exposed more to sunlight from the south before the windows were restored. Low E-glass was installed to cut down on the ultraviolet rays.



Figure 52: Looking west at the Map Room. The wood on the walls, the ceiling plaster and light fixtures are original to the room.



Figure 53: Looking north west at the Map Room. Note the sliding doors that were added to the room. They do not meet code for exiting unless they are kept open at all times.



Figure 54: Looking north at the stair to the second floor offices and rooms. The stair is original and in good condition.



Figure 55: Looking east at the entrance to the first floor room corridor. The entrance is original and the wood is in good condition.



Figure 56: Looking northwest at the windows along the stair from the second floor of the room wing. The light fixture is not original but is appropriate for the style.



Figure 57: Looking down at the stair from the second floor. The stair and wood are in good condition.



Figure 58: Looking down at the base of the windows along the stair. The windows are in poor condition because of addition of the interior fire glass required by code does not let the windows breathe and causes water to build up in the base.



Figure 59: Looking east at the wall and entrance to the second floor rooms. A fire door separates the stair space from the room corridor.



Figure 60: Looking west at the stair to the second floor offices over the lobby. The second floor of the offices and guest rooms are not on the same level.



Figure 61: Looking southwest at the stair and entrance door to the offices. The door is not original but the wainscot and trim are original.



Figure 62: Looking west along the office corridor. Note that the materials are all more modern because of the changes in the office spaces.



Figure 63: Looking southwest at a typical office on the second floor. Note the plaster cracks in the corner of the space and along the west wall. The windows are in fair condition.



Figure 64: Looking south at the reservation office. Note the individual cubicles and the modern materials on the walls and trim. The column is original to the space.



Figure 65: Looking east at the server room that was created in the attic over the Map Room.



Figure 66: Looking east at the unfinished attic space over the Map Room. There is only a partial floor to access the area.

PHOTOGRAPHS – INTERIOR - 1913 GUEST WING



Figure 67: Looking west at the area along the Map Room and to the lobby entrance from the guest wing.



Figure 68: Looking at some of the original doors and chair rail in the space. The wood is in good condition with some minor repairs.



Figure 69: Looking east at the entrance lobby to the first floor rooms. Note the steam pipe, fire suppression systems, and exposed conduit for the fire detection that have been installed in the historic space.



Figure 70: Looking north at the first floor corridor. Note the historic light fixtures in the center of the ceiling, original wood trim around the doors.



Figure 71: Looking at the door to the housekeeping room on the first floor.



Figure 72: Looking at the shelving in the housekeeping room.



Figure 73: Looking at the entrance to the housekeeping office.



Figure 74: Looking west at the office spaces. The areas are worn and in fair condition, which is seen by the general public as they proceed to the rooms beyond.



Figure 75: Looking at a typical floor detail in the corridors of the guest wing. There is a typical carpet with fir wood floors along the perimeter. The wood is somewhat worn but in fair condition.



Figure 76: Looking up at a typical doorway with the flush wood door, filled in transom window, and lowered ceiling covering the wood trim. Note the fire suppression and IT lines run across the space.



Figure 77: Looking west at Room 115, which does not have a bathroom and is typical of several rooms in the wing. Note the sink in the corner of the room. The room is generally in good condition with some wear around the doorways.



Figure 78: Looking northwest at the flush wood entrance door and the hooks for clothes.



Figure 79: Looking east at the room. Note the original light fixtures.



Figure 80: Looking west at the area to the men's bathroom and exit corridor. Note the modified chair rail and exposed fire suppression and detection systems.



Figure 81: Looking west at the exit door in the middle of the guest wing. Note the exposed systems.



Figure 82: Looking north at the first floor corridor on the north end of the wing. The materials and systems are typical throughout the wing.



Figure 83: Looking north at the door to the exit stair including the radiator and exposed systems.



Figure 84: Looking south at the typical lobby area to the second floor rooms.



Figure 85: Looking north at the second floor corridor which is typical of all floors.



Figure 86: Looking south at one of the offices on the second floor. Several rooms were opened up to create the space but a lot of the original trim and details exist.



Figure 87: Looking north at the office space.



Figure 88: Looking south at some of the original wood paneled doors and trim in the office space. They are in good condition.



Figure 89: Looking west at the lodging managers office. Again, the room is set within existing guest rooms.



Figure 90: Looking east at the office. Note the original doors, with the exception of the entrance door, and the original wood trim.



Figure 91: Looking west at the entrance to the women's bathroom in the corridor. The spaces have been remodeled and are in good condition.



Figure 92: Looking west at the exit in the middle of the guest wing. Note the vending machine and exposed systems.



Figure 93: Looking west at the exit stair from the upper floors. These stairs are quite stark and uninviting, even though they are also used as an entrance to the wing.



Figure 94: Looking west at the stair down to the exit from the second floor.



Figure 95: Looking south at the entrance to the men's bathroom.



Figure 96: Looking west at the toilets and toilet stalls in the men's bathroom. The area around the window is exposed to moisture from condensation in the winter months.



Figure 97: Looking east at the shower and changing room in the men's bathroom. Note the sink to the right. The ventilation within the spaces is very poor.



Figure 98: Looking north at the central fire doors in the guest wing. They are not very compatible with the rest of the spaces.



Figure 99: Looking northeast at the entrance door to Room 224 which is typical throughout the wing. The flush wood door and filled-in transom are not original to the building.



Figure 100: Looking west at the entrance from the room. Note the original historical light fixture which is typical throughout the rooms in the wing.



Figure 101: Looking west at the bathroom which has been added to the room. There is a toilet and shower which are very modern along with simple floor and wall materials.



Figure 102: Looking east at the window and wall surfaces. The window is in fair to poor condition with the aluminum storm window on the outside.



Figure 103: Looking at the base of a typical window. The sill is rotted in many places along with the bottom sash. The window does not fit well within the frame and in some cases the sash can't close properly.



Figure 104: Looking up at the head condition. Air leaks all around the window.



Figure 105: Looking southeast at the entrance to Room 309, a room without a bathroom. Note the fire suppression system and flush door.



Figure 106: Looking southeast at the room. The room is generally in good condition. Note the historic light fixtures.



Figure 107: Looking southwest at the room. Note the sink and mirror in the corner which is typical of all rooms.



Figure 108: Looking west at the entrance door to the room. Note the fire suppression system along the left wall.



Figure 109: Looking at a typical historic ceiling fixture that occurs in all of the rooms, with the exception of the office and operational spaces. Those were taken out and replaced with new fixtures.



Figure 110: Looking at a typical historic wall sconce that occurs in all of the rooms with the exception of the office and operational spaces. All of the historic fixtures have old wiring.



Figure 111: Looking at typical base detail that occurs in all of the rooms and in some cases reproduced where pieces were missing.



Figure 112: Looking at a typical transom detail within the room. Note all of the original trim and picture mold still exists. The transom has been filled in and there is a flush wood door.



Figure 113: Looking at a typical detail in the small room for clothes hooks. This is necessary in the smaller rooms where there is no room for an armoire or other closet space.



Figure 114: Looking down at the floor base and window sill. These details are original to the historic building, and even though some have been replaced in-kind, they are in good condition.



Figure 115: Looking at the trim at the head.



Figure 116: Looking at the trim along the jamb.



Figure 117: Looking west at the sink area and access to the toilet room for women at the center of the third floor corridor. The spaces have been cleaned up with new paint and flooring.



Figure 118: Looking west at the entrance to the women's showers along the third floor corridor. The showers have been remodeled and are generally in good condition.



Figure 119: Looking northeast at the entrance door to Room 317. This room has an original bathroom in a larger room.



Figure 120: Looking southeast at the room. Similar materials exist in all of the rooms and they have been well maintained.



Figure 121: Looking northeast at the room. Note the entrance to the bathroom and small cast-iron radiator in the corner. The upper floors tend to be cold during the fall and winter seasons.



Figure 122: Looking northwest at the room entrance door and other doors. The first infilled door space has a shower behind it in the next room. The closet door and bathroom door are original to the space. They are in good condition.



Figure 123: Looking south at the electrical in the center of the room. The electrical is minimal in the room and therefore, many things are plugged into a single circuit.



Figure 124: Looking north at the toilet in the bathroom.



Figure 125: Looking northeast at the claw foot tub, which is original. The tub has been modified for showers.



Figure 126: Looking southeast at the lavatory, which appears to be original to the 1938 remodel.



Figure 127: Looking at a detail of the window. There is some peeling paint, rot in the sill, and the aluminum storm window screens on the outside are in need of repair.



Figure 128: Looking south at the third floor corridor from the center of the wing. The women's bathroom is in the opening to the right. The historic ceiling fixtures exist throughout.



Figure 129: Looking south at the fire doors in the center of the third floor wing. Note the fire extinguisher cabinet next to the door opening.



Figure 130: Looking west at the central exit from the floor. The men's bathroom is to the left, as well as the vending machine area.



Figure 131: Looking southwest at a typical room door on Room 322.



Figure 132: Looking northwest at the room. Again everything is typical with the exception that this room has an original bathroom that has been modified with a shower.



Figure 133: Looking southwest at the room. Note the historic ceiling fixture.



Figure 134: Looking southeast at the entrance door and the doorway to the bathroom. The door to the bathroom is original to the 1938 period of the hotel.



Figure 135: Looking south into the modified bathroom at the shower. The shower has been updated over the years.



Figure 136: Looking east at mirror, sink, and light fixture that have been changed out over the years and not original to the period.



Figure 137: Looking northwest at a detail of a typical window in the wing.



Figure 138: Looking southeast at the entrance door to Room 325. This is a typical room with an added bathroom with a toilet and shower.



Figure 139: Looking at the door jamb that has been damaged, repaired and damaged again because of the change in locks and damage from abuse.



Figure 140: Looking southeast at the typical room materials and design that are original to the hotel.



Figure 141: Looking northeast at the room. The room is in good condition and has been well maintained with few exceptions.



Figure 142: Looking west at the entrance door to the room and the bathroom wall that was extended into the space.



Figure 143: Looking southwest at the sink in the room and the door to the bathroom.



Figure 144: Looking west at the shower in the bathroom. The materials and fixtures are very modest and not necessarily compatible with the room.



Figure 146: Looking northeast at the entrance door to the Room 401 suite.



Figure 147: Looking east at the living room in the corner suite. The materials are very similar to other rooms but the suite is larger after it was remodeled from two rooms.



Figure 148: Looking northwest at the entrance door and plaster wall finishes and trim. They are in good condition.



Figure 149: Looking northwest at the corridor from the living room to the bedroom area.



Figure 150: Looking northeast at the small cast iron steam radiator in the corner of the living room space.



Figure 151: Looking east at the newer shower in the center room of the suite.



Figure 152: Looking east at the toilet in the shower room.



Figure 153: Looking west at the modern vanity and sink in the corridor between the living room and the bedroom.



Figure 154: Looking southwest at the corridor opening, the second bathroom door, and another door to the main corridor in the bedroom space. The bathroom door is original to the building.



Figure 155: Looking northeast at the bedroom suite. Similar materials including original wood trim.



Figure 156: Looking east at the bedroom suite and the window. The window is in fair to poor condition.



Figure 157: Looking at the sill of a typical window in the suite that is typical of all of the rooms in wing. The wood sills are weathered and some have broken or rotted wood. The storm window does not work very well.



Figure 158: Looking north at the fourth floor corridor similar to the rest of the building.



Figure 159: Looking northwest at the entrance door to Room 430, a corner room with an original bathroom.



Figure 160: Looking northwest at the room with the corner windows that lets a lot of light into the space but only allows for the bed to be in the corner.



Figure 161: Looking southwest at the bathroom doorway and corner of the room.



Figure 162: Looking south at the closet door and bathroom doorway. The wood paneled doors are original to the hotel.



Figure 163: Looking northeast at the room. Lighting of the interior spaces in this room, as well as most rooms, is poor.



Figure 164: Looking southeast at the entrance door and the other doors on the south wall. Generally the materials are in good condition and have been well maintained.



Figure 165: Looking southwest at the bathroom with the original claw foot tub. The tub has been adapted for a shower. The window is in fair condition. Humidity is a problem in most bathrooms because of the lack of ventilation.



Figure 166: Looking northwest at the original sink, mirror, and light fixture. The fixtures are generally in good condition.



Figure 167: Looking east at a detail of one of the windows. The window is in fair condition. The windows are not very energy efficient.



Figure 168: Looking south at the closet in the room.



Figure 169: Looking north at the north exit door. This is normally a very dark area at the end of the hall.



Figure 170: Looking north at the exit stair, railing, and lighting. This stair is in good condition.



Figure 171: Looking south at the fourth floor landing.



Figure 172: Looking south at the third floor landing.

PART 2 – TREATMENT AND USE

A. MANAGEMENT PHILOSOPHY AND PRIMARY TREATMENT

The Mammoth Hot Springs Hotel and related buildings (Dining Room, Recreation Hall, and Cabins) contribute to the significance and eligibility of the Mammoth Hot Springs Historic District. The primary buildings are used to provide visitor lodging in the Mammoth area of the Park and the other buildings are used to support the primary buildings. The National Park Service and Xanterra Parks and Resorts, the concessionaire, propose to preserve and maintain the hotel and renovate the interior spaces to provide a lodging experience that is compatible with and that enhances the original character-defining features of the hotel, which have been identified in Part 1 of this document. This report only addresses the hotel. The level of treatment proposed for the hotel is *Rehabilitation*.

The Secretary of the Interior's Standards and Guidelines for Rehabilitation is defined as the act or process of making possible a compatible use for the property, or parts of a property, through repair, alterations, and additions, while preserving those portions or features which convey its historical, cultural or architectural values. When the physical condition of character-defining materials and features requires additional work, repairing by stabilizing, consolidating and conserving is recommended. Preservation strives to retain existing materials and features while employing as few new materials as possible. Work should be physically and visually compatible, identifiable upon close inspection, and documented for future research. The replacement material needs to match the old, both physically and visually, thus in-kind. Work will be required to improve energy efficiency and to address accessibility considerations and health and safety code considerations. Particular care must be taken not to obscure, damage, or destroy character-defining materials or features in the process of undertaking work to meet code and energy requirements.

In general, the new uses of the building will be compatible with the historical uses even though some of the rooms have been modified for modern conveniences, namely bathrooms added in the guest rooms. At this time the work proposed for the hotel will be the preservation of the main character-defining features on the interior and exterior of the building. The main public spaces such as the lobby, Map Room, and gift shop will have the existing materials refinished to bring back the character of the Art Moderne style as designed by Robert Reamer. The modified guest rooms will be rehabilitated with materials that are compatible with the historical period.

B. REQUIREMENTS FOR TREATMENT

As a federally owned property, rehabilitation treatment undertaken at the Mammoth Hot Springs Hotel must comply with all applicable federal laws, regulations, and policies. Proposed treatments will be reviewed for consistency with the Yellowstone *General Management Plan (YGMP)*, the National Environmental Protection Act (NEPA), and Section 106 of the National Historic Preservation Act (NHPA). Work shall also comply with several National Park Service Director's Orders, including *Director's Order 28: Cultural Resource Management Guideline*, which includes guidelines for code-related matters including design compatibility, accessibility, safety and security and energy conservation; and *Director's Order 58: Structural Fire Management*, which sets forth "...the operational policies and procedures necessary to establish and implement structural fire management programs throughout the national park system." Also the complex should comply with the Uniform Federal Accessibility Standards (UFSA).

National Park Service policy requires that any rehabilitation treatment comply with appropriate general and State of Wyoming building codes. The appropriate codes at this date are as follows:

2012	International Building Code
2012	International Existing Building Code
2012	International Electrical Code
2012	International Energy Conservation Code
2012	International Fire Code
2012	International Mechanical Code
2012	International Plumbing Code

Some code or legislative-driven treatments recommended in this report may result in adverse effects to the historic character-defining features of the contributing buildings. The impact of these treatments may be mitigated, however, by sensitive design that will result in improved life, health, and safety standards, while maximizing the preservation of the historic resource. See Appendix D for the Building Code Review.

C. ALTERNATIVES FOR TREATMENT

The following section of the report contains general and specific treatment recommendations. With regard to interior spaces, the level of preservation treatment may vary depending on whether the space is considered primary, secondary, or noncontributing. For purposes of this report, *primary* spaces are defined as those designed for public access and that retain their original plan and volume, as well as wall, floor, and ceiling finishes. In the hotel primary spaces include all of the public rooms (i.e. lobby, Map Room, gift shop and the main stairs and corridors) including its outside terraces and porte-cochere. Some of the guest bathrooms have original materials and fixtures. Specific treatment recommendations for primary interior spaces will include those that result in the maximum retention of historic fabric, while accommodating updates associated with seismic considerations, health, fire and safety codes and with accessibility statutes. In addition, where sufficient documentation exists, some important small-scale architectural elements or furnishings may be restored in the primary public spaces.

Secondary spaces are defined as those originally designed for utilitarian purposes, i.e. spaces not generally seen by the public, and/or space that retains its original plan, but that has modern finishing materials. This occurs in the guest rooms and public restrooms. This also includes spaces that have been altered over the years to accommodate new uses or alteration of spaces. In the hotel, secondary spaces include the laundry, housekeeping, and storage areas, the utility area in the basement, and the service areas.

Rehabilitation is appropriate while preserving the character-defining features and spaces. Treatments should preserve historic fabric to the maximum extent possible, while upgrading structural systems and utilities. No attempt will be made to restore the original interior plan and furnishings, or to reconstruct missing architectural features. When possible, new finishing materials should approximate the appearance of the historic materials.

The Mammoth Hot Springs Hotel rehabilitation will adhere to the *Secretary of the Interior's Standards and Guidelines for Rehabilitation*. Specifically, the work will preserve the historical Art Moderne character of the building as well as its character-defining characteristics. Specific treatment recommendations for the hotel and the site are as follows:

Site

- Provide a plan for re-grading the areas around the hotel to provide positive drainage away from the structure. This is especially required on the west and north sides of hotel lobby, and all sides of the guest wing.

- The dock area on the west side of the hotel guest wing that is used for laundry transfer should be screened with a fence or landscaping to separate the area from the entrances. Prepare a plan for this work.
- Screen all dumpsters, electrical transformers, and service areas. The screening should be a combination of fencing, and trees and shrubbery.
- Maintain the lawns, roads, and walkways around the hotel.
- Revise the parking area at the north entrance to the lobby to eliminate conflicts between pedestrians going to the cabins, service areas, and laundry.
- Provide a plan for trimming or removal of trees that are affecting the building, using a professional arborist. This should identify standing dead trees, trees with broken branches, or trees or shrubs otherwise compromised that would have an impact on the building or pedestrians. These mainly occur on the west side of the hotel. The park should develop a pruning and/or removal plan for this area that adheres to the basic principle that native vegetation should be disturbed as little as possible.

Mammoth Hot Springs Hotel (HS-2025)

Under the present concessionaire contract the hotel will be used year around. The hotel is in fair to good condition and the work primarily includes repair and maintenance, refinishing existing materials, and providing structural stabilization work to the building for gravity and seismic considerations. The building needs to be brought up to code. Specific recommendations are:

Hotel Exterior

- Maintain the exterior siding by preparing and repainting the areas of peeling paint. There is some wood siding base material on the south side of the guest wing that should be replaced in-kind. Also the area around the enclosed stairway on the north side of the lobby needs to be repaired. The materials need to be scraped and sanded, a primer coat and two finish coats need to be applied.
- Various decorative elements, especially on the south side porte-cochere (i.e. columns, column capitals, bases, facia,.) need to be repainted. The rest of the pilasters on the corners of the lobby/Map Room as well as adjacent trim need to be repaired or replaced in-kind and painted. The materials need to be scraped and sanded, a primer coat and two finish coats need to be applied. Some wood will have to be repaired and/or replaced.
- The deteriorated wood on the back dock area, as well as the stair and porch areas, need to be replaced as they are becoming a hazard.
- The windows are in fair condition. The double-hung wood windows should be replaced with energy efficient wood windows that match the existing windows in-kind. The current windows can't be restored with an insulated glass unit without totally rebuilding them. The windows in the Map Room have been restored and insulated low-E glass was installed to cut down on the ultraviolet which was causing problems with deterioration of the Map and mahogany paneling. The large fixed windows in the lobby and gift shop need to be restored for the same purposes.
- The wood shingle roof is still in good condition and should last at least another five to seven years. There is some curling of the wood shingles on the south side of the lobby/Map Room. At that time the roof needs to be sheathed with plywood and the roof tied to the walls to help with seismic stability.
- The high grade around the guest wing on the east and west sides needs to be pulled away and positive drainage established.
- Doors and hardware need maintenance and repair.

Hotel Interior

- The structural system is required to be upgraded throughout the hotel. This mainly occurs in the lobby/Map Room area as well as the guest wing. Moment frames need to be added around some of the

large windows in the Map Room, lobby and gift shop. Provide structural stabilization throughout to meet code and provide needed seismic stabilization.

- Continue to prep and paint the woodwork throughout the building. This goes for the base trim, door and window surrounds, and interior of the windows. The wood floors throughout the lobby and guest room corridors are showing wear. They should be replaced in the next remodel.
- The woodwork in the lobby, Map Room, gift shop, and related public spaces need to be refinished to bring back the original character of the Art Moderne architecture. Colors for the rest of the finishes will have to be determined and used throughout to enhance the architecture. Preserve and maintain the columns, ceiling beams, windows and doors.
- Renovate the lobby area to bring back some of the character of the 1937 building that was modernized. The gift shop which was inserted into the original lobby space needs to have its entrance wall redesigned to be compatible with the rest of the space. This may mean redesign of the gift shop to eliminate the congestion at the entrance to the lobby.
- The United States Map in the Map Room was conserved previously and is generally in good condition however several of the pieces in the center of the map are in need of additional conservation.
- Renovate the guest room wing to be compatible with the design of the 1937 lobby. The renovation should include but not be limited to the following:
 - a. Retain the hallway, with the historic lighting, trim around the doors, and present materials. Add accent lighting, color to the walls, and possibly a center carpet runner with side runners into the rooms at each door. Replace the wood floor and finish exposed along the edges.
 - b. Retain the original door openings unless not needed. Replace the wood flush doors with wood paneled doors similar to what remains on the interior.
 - c. The rooms in some cases are small and some have no bathrooms. Bathrooms have been added to some of the rooms but in some cases they do not work because of the lack of space. Several rooms may have to be combined to provide guest accommodations as well as provide compliant bathrooms. Relocate walls as necessary to accommodate new room sizes while retaining the doorways and especially the window locations. Remove the bathrooms in the hallways and repurpose these areas to guest rooms or vending room areas.
 - d. Provide ADA accessible rooms with bathrooms into the wing on several floors. Replace the elevator to provide access to all floors.
 - e. When the management offices are moved out of the building return these rooms to guest rooms.
 - f. Add color and pattern to the walls, ceilings and floor finishes along with furnishings that are compatible with the hotel. Upgrade finishes in the original bathrooms and within the new bathrooms to be compatible with this renovation.
 - g. Provide new compatible hardware on the entrance doors for security in the rooms. Maintain and replace as necessary the interior hardware that still exists.
 - h. Provide graphics for the corridors and room doors that is compatible with the historic integrity of the building.
 - i. Provide new electrical, mechanical, and plumbing systems to the rooms.
 - j. Replace the existing fire suppression and detection systems to meet code and place them within the walls of the rooms.
 - k. Restore wood trim include bases, window surrounds and picture mold and replace as necessary.
- The fire suppression, detection, and fire alarms should be upgraded throughout the building and buried within the structure as much as possible.
- The electrical and mechanical systems should be upgraded throughout the building and buried within the walls.

D. BASIS OF DESIGN PHASE 1 OF THE MAMMOTH HOTEL RENOVATION

Overview

The Mammoth Hot Springs Hotel (Hotel), built in 1937 which included the remodeling of the 1913 guest wing, currently provides services for day-use and overnight guests in addition to administrative space for Xanterra, the concessionaire. Xanterra as part of their new contract in 2013 is required to renovate the hotel as a year around hotel and provide additional spaces to accommodate the needs of the visitors. This requires that the concessionaire move there management offices and reservation department into a renovated Haynes Studio which will become the Haynes Administrative Office Building for the concessionaire. The contract requires that vacated spaces in the guest wing will be returned to rooms and the administrative offices on the second floor will be repurposed for meeting rooms for public use. Phase 1 of the Mammoth Hot Springs Hotel Rehabilitation will include the renovation of the main hotel public spaces. A later phase will provide for the structural stabilization of the guest wing as well as bring it up to code.

Description of Project

The hotel rehabilitation involves the structural and seismic stabilization of the lobby, porte-cochere, and Map Room areas of the historic hotel and repurposing of the second floor office spaces. Additionally, the project provides for significant upgrades directly affecting life safety. The primary scope elements of the project include:

1. Seismic and structural stabilization of the hotel, which includes construction of shear walls and moment frames;
2. Replacement of light fixtures, emergency lighting and the original electrical system, including new distribution panels and wiring necessary for visitor services;
3. Replacement of inefficient, one-pipe, mechanical heating system with a two-pipe thermostatically controlled system. All exposed heating pipe will be insulated;
4. Upgrade of fire-smoke detector systems and fire sprinkler systems; and
5. Addressing ADA compliance and accessibility, including egress and areas of refuge. In addition, there are numerous secondary scope elements of this project as discussed in this report.

Justification

The historic hotel is listed on the National Register of Historic Places as a primary contributing property within the Mammoth Hot Springs Historic District. More than 3 million visitors come to Yellowstone each year and over 700,000 of these enter the park through Mammoth Hot Springs via the North Entrance, the only entrance open to automobiles year-round. The hotel has the capacity for over 335 guests (124 guest rooms) to spend the night in both summer and winter. Additionally, thousands of day use visitors come to the Mammoth area as part of their visit to Yellowstone. This building has a ground level footprint of 18,845 square feet (sf). The total square footage for the building is 56,787 sf. The guest wing accounts for 43,420 sf. As winter wolf viewing has become more popular with the public, this facility has seen a corresponding increase in winter use.

Despite the tremendous potential of this hotel, antiquated design and systems, as detailed below, as well as impairment of character-defining features, severely impact the user experience of this facility. In addition, many of these antiquated systems pose significant threats to the safety of the structures and its occupants.

The hotel does not meet current seismic standards and is in danger of severe damage or possible collapse in the event of an earthquake resulting in massive injury or loss of life. This facility is located in Universal Building Code (UBC) Seismic Zone 4, the zone with the highest probability of damaging ground-motion. While such zoning and associated design requirements did not exist at the time of its construction, a Rapid Visual Survey of the structure (based on FEMA 273-NEHRP Guidelines for Seismic Rehabilitation of Buildings)

indicates that the lateral resisting elements of the building and porte-cochere (shear walls and floor diaphragms) exceed the length-to-width ratios recommended by FEMA. In addition, there is an inadequate load path to the foundation since there are few or no shear members below the first floor. The short wood columns between the first floor and foundation lack adequate connections top and bottom that would provide resistance to lateral movement. While a detailed seismic analysis may reveal more deficiencies than were visually identified, these listed structural instabilities must be addressed.

Given that seismic work on the hotel is justified and that a seismic retrofit will open wall, floor and roof areas, which will allow access to other building systems, the state of these antiquated systems are used as further justification for the full scope of work proposed. The infrastructure of this historic building, much of which dates back to the turn of the last century, has exceeded its useful life and replacement components are typically obsolete.

One such system is the electrical system, which consists of knob and tube wiring and historic fixtures. This system is obsolete, has been difficult to maintain, has often been inappropriately modified to meet visitor needs, and does not meet code. Deficiencies relate to amperage capacity of the system, the presence of non-grounded outlets, and the number of outlets (total outlets vary from approximately 25% to 50% of number required by the current NEC Code).

Another such system is the heating system, which is provided by an antiquated one-pipe steam system into cast-iron radiators. The one-pipe radiators are equipped with a manually adjustable air vent with a liquid-filled temperature-sensing element. These valves are difficult to adjust resulting in guest discomfort, frequent maintenance intervention, and inefficient use of natural resources. Aside from comfort issues the heating system is dangerous. One pipe feeds both the steam heat and domestic hot water system; therefore the water enters the hotel at 140 degrees, which has caused scalding of hotel guests. Not only does the heating system threaten visitors, it also threatens the historic fabric of the building. For example, the uninsulated steam pipes located in the walls and attic spaces contribute to the temperature control problems which in turn cause damage to the historic wall finishes. When the hotel was constructed, it was a summer seasonal facility with no winter operation. Changes in visitor use patterns and expectations have resulted in the hotel being used both in the summer and winter.

A third system that will be accessible as a result of the seismic retrofit is the fire safety system. Affected elements of this system include walls, doors, egress, and fire suppression. The wall between the guest wing and lobby and associated doors do not meet the NFPA requirement for one-hour fire-rated construction and must be corrected. There may be other such locations. A similar issue pertains to the elevator, which does not have the code-required two-hour-rated construction and has reached the end of its service life. Not only are the walls, doors, and elevator deficient, but so too is the current fire-suppression system, which is a deteriorated dry fire sprinkler system.

A fourth system is the plumbing system, where there is a lack of ADA compliant fixtures. There are also serious ADA concerns as related to egress from the west end of the building.

In addition to life safety and comfort issues associated with the current state of the hotel, there are numerous additional characteristics that detract from the quality of the visitor experience. These include:

- Xanterra non-hotel administrative offices are located in the hotel and limit the capacity for visitor services;
- The historic glory of the lobby and Map Room are in a state of decline;
- The current use of the Map Room is not consistent with its historic use;

- The current entrances and some of the elevations are non-compatible with the original hotel;
- The current Ski Shop is located in a non-compatible trailer; and
- There is a lack of space for hosting functions such as weddings or gatherings.

These detractors are readily remedied while addressing the seismic concerns and antiquated systems described earlier.

In summary, this historic building provides a necessary function in visitor services for both summer and winter operations; however, the current state of the building poses unacceptable life safety risks and provides a suboptimal visitor experience. At present, the hotel has remained functional due to "band-aid" fixes, however, the overall capacity of the building to function as intended is decreasing.

Project Scope

This project will correct seismic, electrical, mechanical, thermal, fire/life/safety, and ADA deficiencies in the lobby, porte-cochere, and Map Room areas. At the same time, the proposed rehabilitation will restore many of the character-defining features of the hotel and provide for the types of spaces that are consistent with the expectations of modern visitors including year round use.

Function Analysis

Function analysis was used to help understand the overall purpose of the hotel rehabilitation. For each of the 5 components of the NPS mission, functional requirements, as listed below, were identified for the subject project.

Protect Public & Employee Health, Safety and Welfare

- Provide a seismically sound structure
- Replace obsolete fire alarm & suppression system
- Improve employee morale by separating public / admin services
- Meet visitor comfort & safety expectations

Protect Natural & Cultural Resources

- Preserve character-defining features and harmonize architectural appearance
- Remove incompatible structures from historic district
- Minimize impacts to natural resources

Provide for Visitor Enjoyment through Improved Educational and Recreational Opportunities

- Upgrade access to public areas & visitor services
- Enhance access & visibility to visitor recreational opportunities (ski, snowshoe, snow coach)
- Eliminate visitor use conflicts (e.g. private functions vs. public access to Map Room)
- Expand Visitor Use Opportunities

Improve Operational Efficiency, Reliability and Sustainability

- Provide year round use (climate control, non-summer attractions – niche business events, skiing, snowshoeing)
- Reduce O&M costs / resources (includes changes to thermal envelope)
- Re-use existing structure / materials

Provide other Advantages to the National Park Service

- Reduce congestion in lobby
- Maintain long-term visitor services
- Reduce construction impacts

Phase 1 Schematic Design

The design of the spaces identified under phase 1 on the rehabilitation will not only stabilize and preserve the historic Mammoth Hot Springs Hotel but will also solve problems with the operation of a hotel that is slated to be used year around. See the attached schematic design plans for the preferred alternative approved under the Value Analysis process. The Historic Structures Report provided the history and development of the hotel, and provided a description of the architectural integrity of the historic building including the defining character-defining features. It also provided an assessment of the condition of the building and its historic features. Under the treatment and use section of the report it provided preservation recommendations. Phase 2 of the renovation which includes the guest wing was also address but is not included in the Basis of Design at this time. A Cultural Landscape Report for the Mammoth area (of which the historic Mammoth Springs Hotel would be a part) was not completed because, with the exception of the additions, adjacent grounds will not be changed. Also a Contextual Analysis was not completed because under the DSC rules this only applies to a new building within cultural landscape. See attached schematic design plans for the proposed design of the spaces and preservation of the historic and architectural integrity of the building. Phase 1 rehabilitation is described as follows:

Structural Stabilization

Seismic and structural stabilization of the hotel will include upgrading the foundation, shear wall upgrades in certain locations, moment frames around some of the large window openings on the south and east walls of the hotel and connections to the roof structure from the walls.

Electrical Systems

Replacement of the original electrical systems throughout the hotel to meet code. This will include new distribution panels and wiring to all locations within the spaces and buried within the walls, floors and ceiling. Historic light fixtures will be rewired and restored. New lighting will be installed to improve the quality of lighting in the dark spaces. These fixtures will mainly be recessed to not impact the historic integrity of the main character-defining spaces and provide energy efficiency. All data, phone, and fire detection and alarms will also be added within the walls and ceilings. Emergency lighting and signing will also be installed to meet code.

Mechanical Systems

Replacement of inefficient, one-pipe, mechanical steam heating system with a two-pipe thermostatically controlled hot water system will provide for evenly distributed heating throughout the spaces. Steam will still be distributed from the heating plant through a tunnel to a new mechanical room where it will heat the hot water both for heating and hot water systems. Cast-iron radiators will also be maintained and converted to the hot water system. The mechanical room will need to be an addition to the building so that it can tie into the tunnel from the heating plant and to the tunnel system under the hotel. Energy efficiency will also be important with the replacement of the wood double-hung windows with insulated glass units and addition of insulation in the walls and ceilings of the hotel. An energy audit of the whole building reveals the inefficiency of the exterior building envelope with the single-pane windows and lack of insulation in the walls. The existing profile of the window sash does not allow for a insulated glass unit of the depth to provide energy efficiency.

Plumbing Systems

Replacement of the plumbing systems as needed and addition of new plumbing systems will be required. Because of the large number of visitors to the Mammoth area and the year around operations additional public bathrooms will be required. Also additional bathrooms will be required on the second floor for the meeting room spaces. All bathrooms will be ADA accessible. See schematic plans for locations.

The existing fire suppression system is outdated and will be replaced with a totally new system that will be inserted within the walls and ceilings. This will have less impact on the character-defining spaces and materials. The fire suppression system will also have to be located into the new underground mechanical addition so that the system can be distributed throughout the tunnel system under the hotel.

Vertical Circulation

Egress stairs from the second floor will have to be rebuilt to meet code. Also the second floor will be required to have an elevator for ADA access. This elevator will be separate from the guest room elevator because of the different levels over the lobby that do not match up with the guest room floors. See schematic plans for locations.

Second Floor Meeting Room

The second floor office space over the lobby will be repurposed to meeting /lecture rooms to eliminate the congestion on the first floor and to eliminate the conflicts in the Map Room. The Map Room was originally built for the hotel guests to have a place to read, play games with the families, and provide a relaxing area outside of their rooms. Over the years the Map Room has been used for special events and lectures that have limited guests' use of the room. The use of the second floor space for new purposes will require additional public bathrooms and elevator access to the floor. A food prep area for a catered event in the meeting rooms will be included which has been a problem in the Map Room. The Map Room can be returned to its original use for hotel guests and reduce the impact on the character-defining space with all sorts of events. The original furnishing can remain in place and not be move around to set up chairs and tables for large numbers of people.

Entrances

The gift shop has continued to expand into the lobby space over the years causing congestion in the lobby and especially at the west main entrance. On the front exterior of the building in the winter a plywood vestibule with doors is added to each entrance to cut down on the cold drafts into the building when the doors are opened. Also because of the summer activities and winter activities especially, the lobby is full of visitors waiting for the snow coaches or buses to transfer them into the Park. Also with the large bus tours the loading, unloading, and storage of luggage is also a problem. It is proposed to create a permanent vestibule which will be compatible with the design of the original hotel. This will alleviate the need to install small non-compatible vestibules at the entrances during the winter, alleviate lobby congestion and provide a bellman area for luggage. See attached schematic plans.

The north entrance to the lobby has always been an understated doorway with a small gable roof. This entrance in the summer is where all of the guests from the cabins enter the building and in the winter is the entrance for the skating area and the hot tub cabins. Also most of the guest parking is to the north of this entrance. In the winter a plywood vestibule is attached to this entrance. It is proposed to provide a new and permanent vestibule and porte-cochere to make it more significant and be compatible with the historical and architectural integrity of the hotel.

In addition to the new entrance, there will be a need to provide access to the new elevator for deliveries including storage as well as providing ADA access to the lobby from this side of the building. The additions will help to make this side of the building, which is nondescript compared to the front of the building, a more prominent entrance to the hotel and provide access for everyone at this location.

West End Addition

An addition will be required on the west end of the hotel lobby for the new mechanical system, fire suppression system and electrical distribution systems. This addition will tie directly into the tunnel from the heating plant as well as distribute the systems in the existing tunnels under the building, including access to the guest wing for future distribution. The fire suppression vault on the north side of the building can be eliminated. The west side of the existing building has been modified over the years with window openings and this wall is one of the major areas of structural concern because of the settlement cracks and movement in the wall. This will eliminate the need to provide a large space under the existing building for the systems and disturbing and rebuilding of the existing structural system and foundation.

The creation of the room for utilities will allow for expansion of the gift shop on the first floor to limit more intrusion into the historic lobby space and provide a gift shop entrance that can be set back from the entrance doors and designed to be compatible with the lobby space. Also this will allow for expansion of the winter ski shop into the hotel and removal of the trailer that is moved to the site each winter for that purpose. This will also allow for a second floor addition to accommodate needed restrooms and compliant egress from the second floor meeting rooms.

The addition will be compatible with the existing building in scale, massing and texture and designed in a way to bring back the prominence to this facade. See the attached schematic design plans.

Preservation of Character-defining Spaces and Features

All of the work described above will provide for the preservation of interior and exterior character-defining spaces and features. The impact of the new systems will be minimal. Also the impact of the numbers of visitors and expanded events required for a year around hotel will be minimized. The existing woodwork will be preserved and re-finished with no alterations that would impact those features. The historic lobby and Map Room will be preserved. The rehabilitation will address each of the elements of the functional analysis and preserve the historic Mammoth Hot Springs Hotel.

See Appendix C for Schematic Design Drawings of Phase 1, Seismic Retrofit.

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Historic Structures Report
Yellowstone National Park

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- Figure 107: Looking southwest at the room. Note the sink and mirror in the corner which is typical of all rooms.
- Figure 108: Looking west at the entrance door to the room. Note the fire suppression system along the left wall.
- Figure 109: Looking at a typical historic ceiling fixture that occurs in all of the rooms with the exception of the office and operational spaces. Those were taken out and replaced with new fixtures.
- Figure 110: Looking at a typical historic wall sconce that occurs in all of the rooms with the exception of the office and operational spaces. All of the historic fixtures have old wiring.
- Figure 111: Looking at typical base detail that occurs in all of the rooms and in some cases reproduced where pieces were missing.
- Figure 112: Looking at a typical transom detail within the room. Note all of the original trim and picture mold still exists. The transom has been filled in and there is a flush wood door.
- Figure 113: Looking at a typical detail in the small room for clothes hooks. This is necessary in the smaller rooms where there is not room for an armoire or other closet space.
- Figure 114: Looking down at the floor base and window sill. These details are original to the historic building and even though some have been replaced in-kind they are in good condition.
- Figure 115: Looking at the trim at the head.
- Figure 116: Looking at the trim along the jamb.
- Figure 117: Looking west at the sink area and access to the toilet room for women at the center of the third floor corridor. The spaces have been cleaned up with new paint and flooring.
- Figure 118: Looking west at the entrance to the women's showers along the third floor corridor. The showers have been remodeled and are generally in good condition.
- Figure 119: Looking northeast at the entrance door to room 317. This room has an original bathroom in a larger room.
- Figure 120: Looking southeast at the room. Similar materials exist in all of the rooms and they have been well maintained.
- Figure 121: Looking northeast at the room. Note the entrance to the bathroom and small cast-iron radiator in the corner. The upper floors tend to be cold during the fall and winter season.
- Figure 122: Looking northwest at the room entrance door and other doors. The first infilled door space has a shower behind it in the next room. The closet door and bathroom door are original to the space. They are in good condition.

- Figure 123: Looking south at the electrical in the center of the room. The electrical is minimal in the room and therefore many things are plugged into a single circuit.
- Figure 124: Looking north at the toilet in the bathroom.
- Figure 125: Looking northeast at the claw foot tub which is original. The tub has been modified for showers.
- Figure 126: Looking southeast at the lavatory which appears to be original to the 1937 remodel.
- Figure 127: Looking at a detail of the window. There is some peeling paint, rot in the sill and the aluminum storm window screens on the outside are in need of repair.
- Figure 128: Looking south at the third floor corridor from the center of the wing. The women's bathroom is in the opening to the right. The historic ceiling fixtures exist throughout.
- Figure 129: Looking south at the fire doors in the center of the third floor wing. Note the fire extinguisher cabinet next to the door opening.
- Figure 130: Looking west at the central exit from the floor. The men's bathroom is to the left as well as the vending machine area.
- Figure 131: Looking southwest at a typical room door on room 322.
- Figure 132: Looking northwest at the room. Again everything is typical with the exception that this room has an original bathroom that has been modified with a shower.
- Figure 133: Looking southwest at the room. Note the historic ceiling fixture.
- Figure 134: Looking southeast at the entrance door and the doorway to the bathroom. The door to the bathroom is original to the 1937 period of the Hotel.
- Figure 135: Looking south into the modified bathroom at the shower. The shower has been updated over the years.
- Figure 136: Looking east at mirror, sink, and light fixture that have been changed out over the years and not original to the period.
- Figure 137: Looking northwest at a detail of a typical window in the wing.
- Figure 138: Looking southeast at the entrance door to room 325. This is a typical room with a added bathroom with a toilet and shower.
- Figure 139: Looking at the door jamb that has been damaged, repaired and damaged again because of the change in locks and damage from abuse.
- Figure 140: Looking southeast at the typical room materials and design that are original to the Hotel.
- Figure 141: Looking northeast at the room. The room is in good condition and has been well maintained with few exceptions.
- Figure 142: Looking west at the entrance door to the room and the bathroom wall that was extended into the space.
- Figure 143: Looking southwest at the sink in the room and the door to the bathroom.
- Figure 144: Looking west at the shower in the bathroom. The materials and fixtures were very modest and not necessarily compatible with the room.
- Figure 145: Looking east at a fixed aluminum window in the lobby of the fourth floor corridor. The window on the inside is required to meet the fire code. The storm window traps moisture in and around the original window.
- Figure 146: Looking northeast at the entrance door to the room 401 suite.
- Figure 147: Looking east at the living room in the corner suite. The materials are very similar to other rooms but the suite is larger after it was remodeled from two room.
- Figure 148: Looking northwest at the entrance door and plaster wall finishes and trim. They are in good condition.
- Figure 149: Looking northwest at the corridor from the living room to the bedroom area.
- Figure 150: Looking northeast at the small cast iron steam radiator in the corner of the living room space.

- Figure 151: Looking east at the newer shower in the center room of the suite.
- Figure 152: Looking east at the toilet in the shower room.
- Figure 153: Looking west at the modern vanity and sink in the corridor between the living room and the bedroom.
- Figure 154: Looking southwest at the corridor opening, the second bathroom door, and another door to the main corridor in the bedroom space. The bathroom door is original to the building.
- Figure 155: Looking northeast at the bedroom suite. Similar materials including original wood trim.
- Figure 156: Looking east at the bedroom suite and the window. The window is in fair to poor condition.
- Figure 157: Looking at the sill of a typical window in the suite that is typical of all of the rooms in wing. The wood sills are weathered and some have broken or rotted wood. The storm window does not work very well.
- Figure 158: Looking north at the fourth floor corridor similar to the rest of the building.
- Figure 159: Looking northwest at the entrance door to Room 430, a corner room with an original bathroom.
- Figure 160: Looking northwest at the room with the corner windows that lets a lot of light into the space but only allows for the bed to be in the corner.
- Figure 161: Looking southwest at the bathroom doorway and corner of the room.
- Figure 162: Looking south at the closet door and bathroom doorway. The wood paneled doors are original to the hotel.
- Figure 163: Looking northeast at the room. Lighting of the interior spaces in this room as well as most rooms is poor.
- Figure 164: Looking southeast at the entrance door and the other doors on the south wall. Generally the materials are in good condition and have been well maintained.
- Figure 165: Looking southwest at the bathroom with the original claw foot tub. The tub has been adapted for a shower. The window is in fair condition. Humidity is a problem in most bathrooms because of the lack of ventilation.
- Figure 166: Looking northwest at the original sink, mirror, and light fixture. The fixtures are generally in good condition.
- Figure 167: Looking east at a detail of one of the windows. The window is in fair condition. The windows are not very energy efficient.
- Figure 168: Looking south at the closet in the room.
- Figure 169: Looking north at the north exit door. This is normally a very dark area at the end of the hall.
- Figure 170: Looking north at the exit stair, railing and lighting. This stair is in good condition.
- Figure 171: Looking south at the fourth floor landing.
- Figure 172: Looking south at the third floor landing.

MAMMOTH HOT SPRINGS HOTEL
Historic Structures Report
Yellowstone National Park

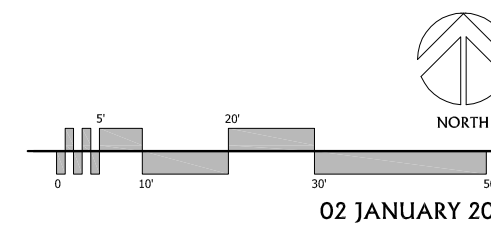
March, 2015



APPENDICES C
Schematic Design Drawings Phase 1 Seismic Retrofit



SCHEMATIC SITE PLAN - OPT. 3



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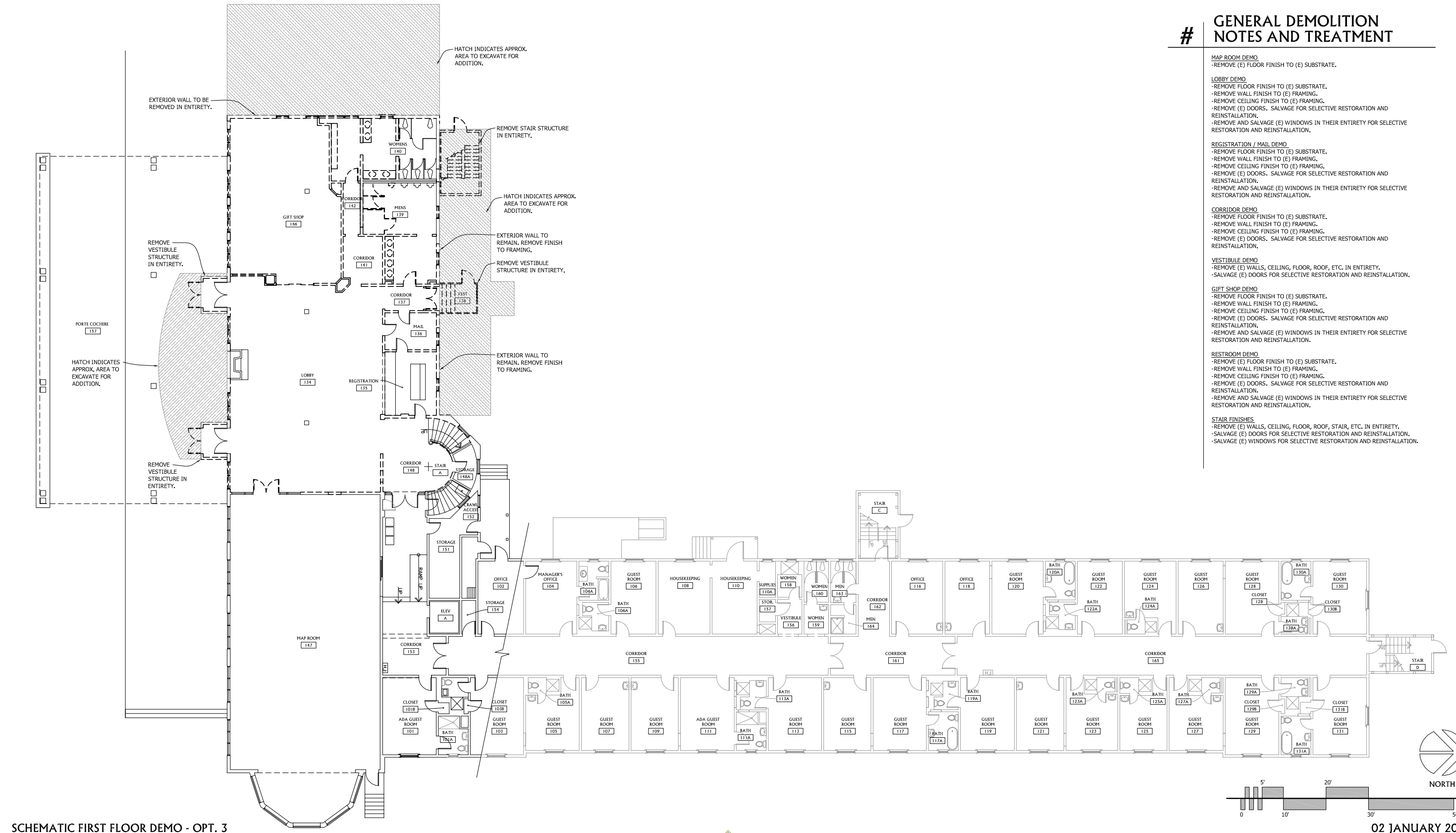
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GENERAL DEMOLITION NOTES AND TREATMENT

- MAP ROOM DEMO
 - REMOVE (E) FLOOR FINISH TO (E) SUBSTRATE.
- LOBBY DEMO
 - REMOVE FLOOR FINISH TO (E) SUBSTRATE.
 - REMOVE WALL FINISH TO (E) FRAMING.
 - REMOVE CEILING FINISH TO (E) FRAMING.
 - REMOVE (E) DOORS. SALVAGE FOR SELECTIVE RESTORATION AND REINSTALLATION.
 - REMOVE AND SALVAGE (E) WINDOWS IN THEIR ENTIRETY FOR SELECTIVE RESTORATION AND REINSTALLATION.
- REGISTRATION / MAIL DEMO
 - REMOVE FLOOR FINISH TO (E) SUBSTRATE.
 - REMOVE WALL FINISH TO (E) FRAMING.
 - REMOVE CEILING FINISH TO (E) FRAMING.
 - REMOVE (E) DOORS. SALVAGE FOR SELECTIVE RESTORATION AND REINSTALLATION.
 - REMOVE AND SALVAGE (E) WINDOWS IN THEIR ENTIRETY FOR SELECTIVE RESTORATION AND REINSTALLATION.
- CORRIDOR DEMO
 - REMOVE FLOOR FINISH TO (E) SUBSTRATE.
 - REMOVE WALL FINISH TO (E) FRAMING.
 - REMOVE CEILING FINISH TO (E) FRAMING.
 - REMOVE (E) DOORS. SALVAGE FOR SELECTIVE RESTORATION AND REINSTALLATION.
- VESTIBULE DEMO
 - REMOVE (E) WALLS, CEILING, FLOOR, ROOF, ETC. IN ENTIRETY.
 - SALVAGE (E) DOORS FOR SELECTIVE RESTORATION AND REINSTALLATION.
- GIFT SHOP DEMO
 - REMOVE FLOOR FINISH TO (E) SUBSTRATE.
 - REMOVE WALL FINISH TO (E) FRAMING.
 - REMOVE CEILING FINISH TO (E) FRAMING.
 - REMOVE (E) DOORS. SALVAGE FOR SELECTIVE RESTORATION AND REINSTALLATION.
 - REMOVE AND SALVAGE (E) WINDOWS IN THEIR ENTIRETY FOR SELECTIVE RESTORATION AND REINSTALLATION.
- RESTROOM DEMO
 - REMOVE (E) FLOOR FINISH TO (E) SUBSTRATE.
 - REMOVE WALL FINISH TO (E) FRAMING.
 - REMOVE CEILING FINISH TO (E) FRAMING.
 - REMOVE (E) DOORS. SALVAGE FOR SELECTIVE RESTORATION AND REINSTALLATION.
 - REMOVE AND SALVAGE (E) WINDOWS IN THEIR ENTIRETY FOR SELECTIVE RESTORATION AND REINSTALLATION.
- STAIR FINISHES
 - REMOVE (E) WALLS, CEILING, FLOOR, ROOF, STAIR, ETC. IN ENTIRETY.
 - SALVAGE (E) DOORS FOR SELECTIVE RESTORATION AND REINSTALLATION.
 - SALVAGE (E) WINDOWS FOR SELECTIVE RESTORATION AND REINSTALLATION.

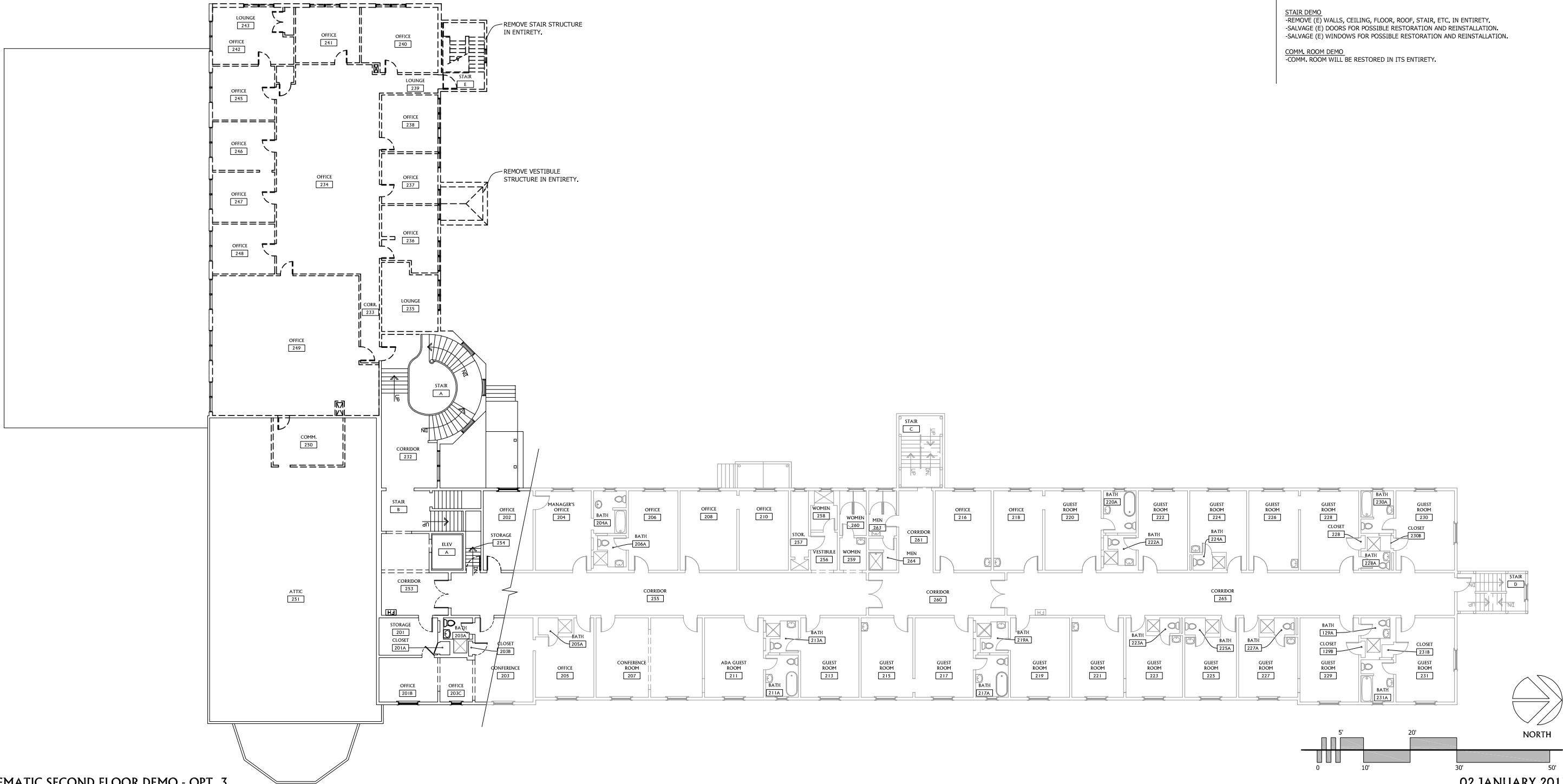


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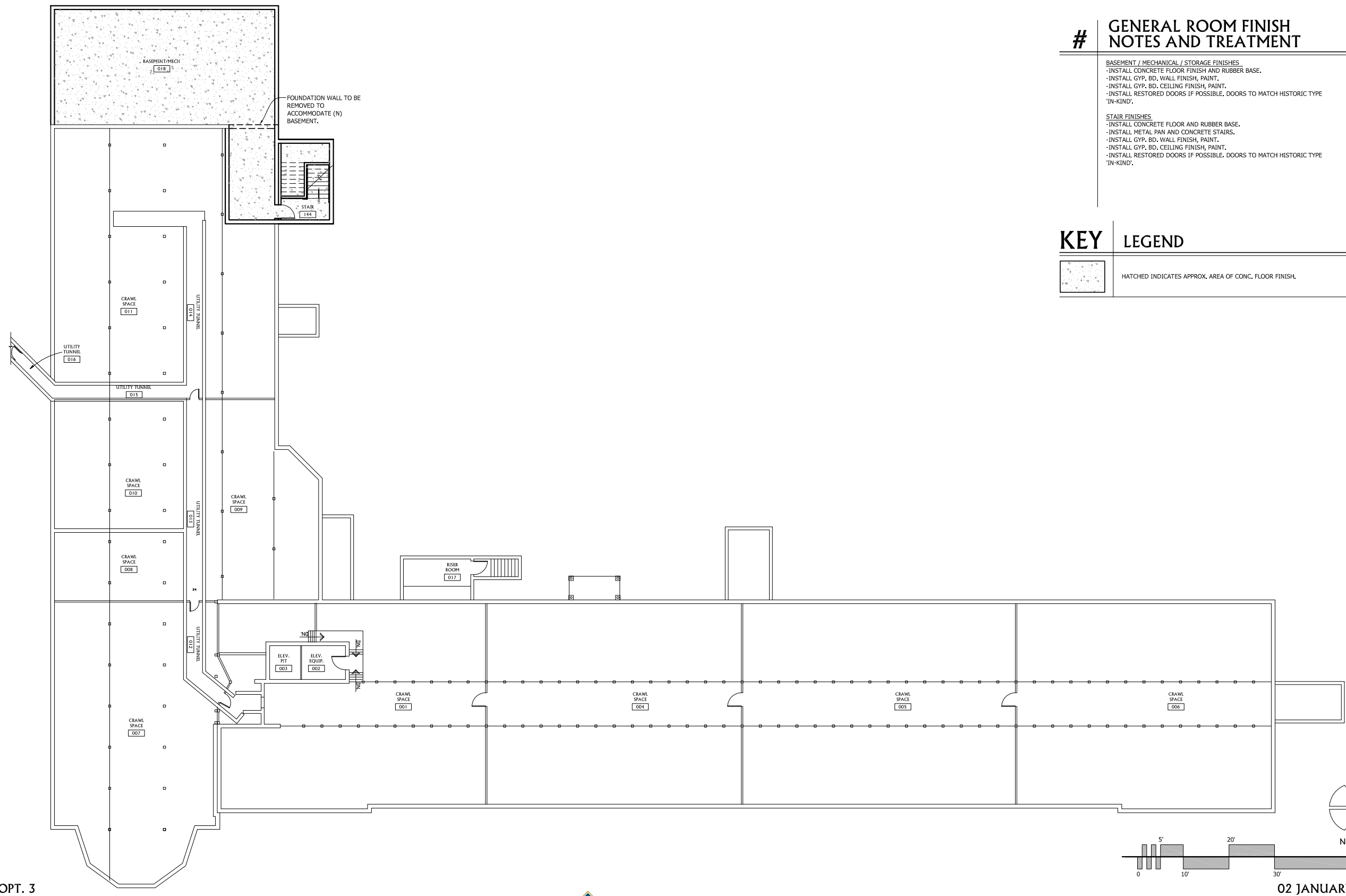
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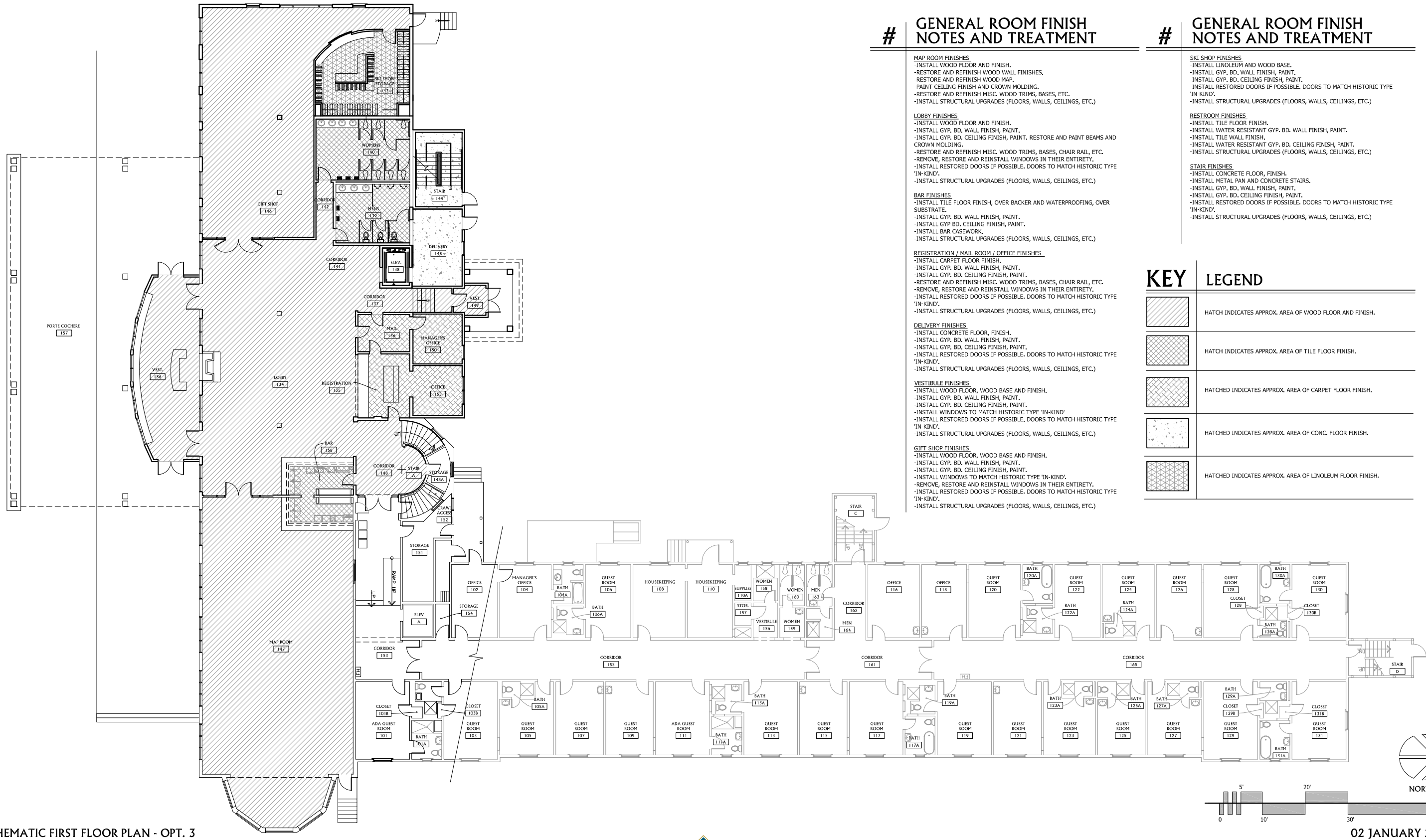


#	GENERAL DEMOLITION NOTES AND TREATMENT
	<p>OFFICE DEMO</p> <ul style="list-style-type: none"> -REMOVE FLOOR FINISH TO (E) SUBSTRATE. -REMOVE WALL FINISH TO (E) FRAMING. -REMOVE CEILING FINISH TO (E) FRAMING. -REMOVE (E) DOORS. SALVAGE FOR POSSIBLE RESTORATION AND REINSTALLATION. -REMOVE AND SALVAGE (E) WINDOWS IN THEIR ENTIRETY FOR RESTORATION AND REINSTALLATION. <p>STAIR DEMO</p> <ul style="list-style-type: none"> -REMOVE (E) WALLS, CEILING, FLOOR, ROOF, STAIR, ETC. IN ENTIRETY. -SALVAGE (E) DOORS FOR POSSIBLE RESTORATION AND REINSTALLATION. -SALVAGE (E) WINDOWS FOR POSSIBLE RESTORATION AND REINSTALLATION. <p>COMM. ROOM DEMO</p> <ul style="list-style-type: none"> -COMM. ROOM WILL BE RESTORED IN ITS ENTIRETY.



SCHEMATIC SECOND FLOOR DEMO - OPT. 3





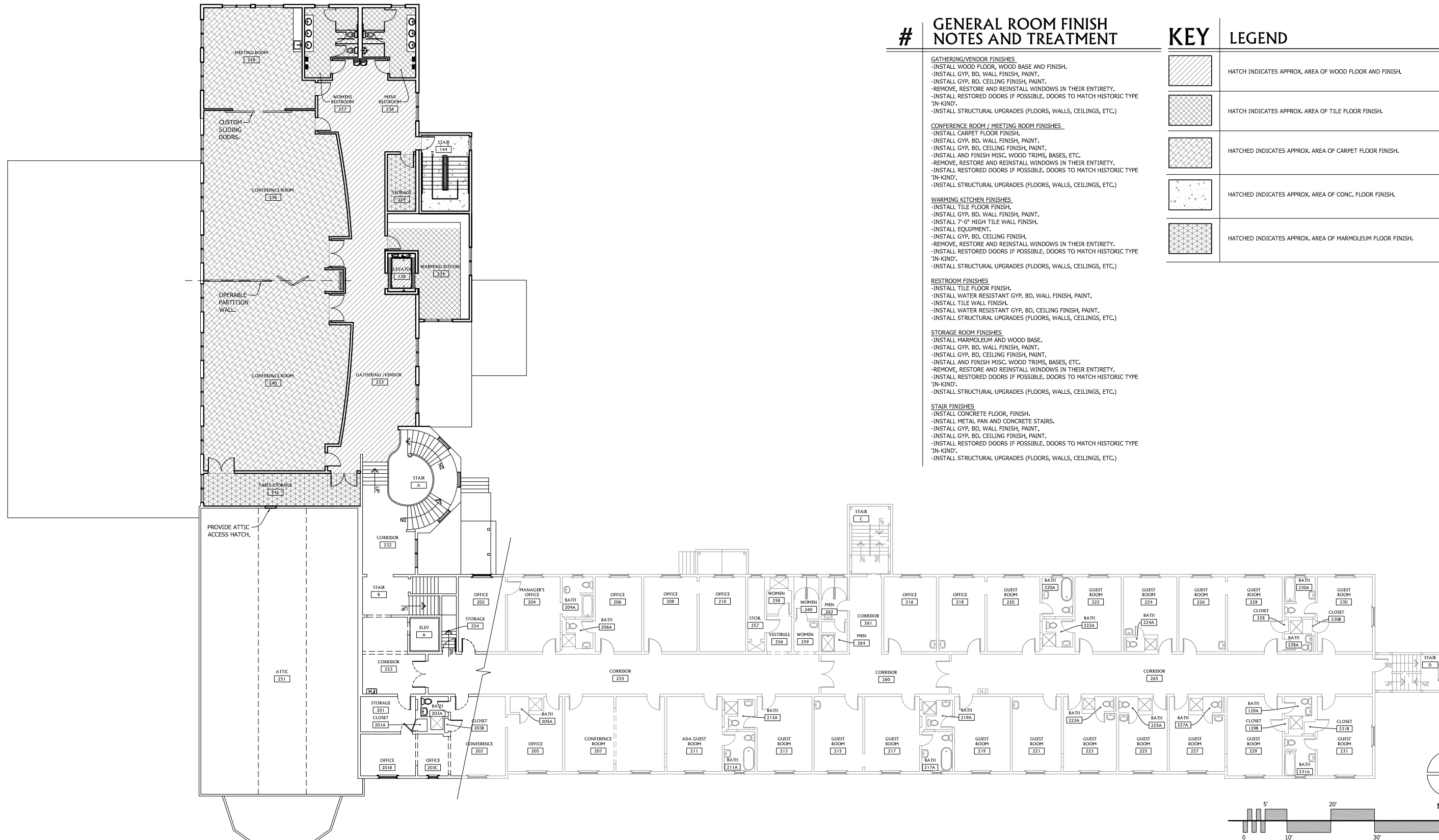
SCHEMATIC FIRST FLOOR PLAN - OPT. 3

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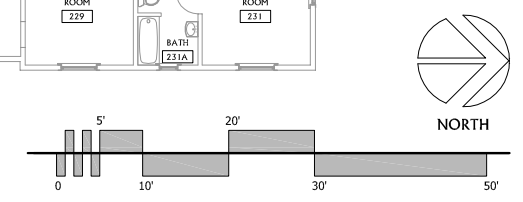


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#	GENERAL ROOM FINISH NOTES AND TREATMENT	KEY	LEGEND
	GATHERING/VENDOR FINISHES -INSTALL WOOD FLOOR, WOOD BASE AND FINISH. -INSTALL GYP. BD. WALL FINISH, PAINT. -INSTALL GYP. BD. CEILING FINISH, PAINT. -REMOVE, RESTORE AND REINSTALL WINDOWS IN THEIR ENTIRETY. -INSTALL RESTORED DOORS IF POSSIBLE. DOORS TO MATCH HISTORIC TYPE 'IN-KIND'. -INSTALL STRUCTURAL UPGRADES (FLOORS, WALLS, CEILINGS, ETC.)		HATCH INDICATES APPROX. AREA OF WOOD FLOOR AND FINISH.
			HATCH INDICATES APPROX. AREA OF TILE FLOOR FINISH.
	CONFERENCE ROOM / MEETING ROOM FINISHES -INSTALL CARPET FLOOR FINISH. -INSTALL GYP. BD. WALL FINISH, PAINT. -INSTALL GYP. BD. CEILING FINISH, PAINT. -INSTALL AND FINISH MISC. WOOD TRIMS, BASES, ETC. -REMOVE, RESTORE AND REINSTALL WINDOWS IN THEIR ENTIRETY. -INSTALL RESTORED DOORS IF POSSIBLE. DOORS TO MATCH HISTORIC TYPE 'IN-KIND'. -INSTALL STRUCTURAL UPGRADES (FLOORS, WALLS, CEILINGS, ETC.)		HATCHED INDICATES APPROX. AREA OF CARPET FLOOR FINISH.
	WARMING KITCHEN FINISHES -INSTALL TILE FLOOR FINISH. -INSTALL GYP. BD. WALL FINISH, PAINT. -INSTALL 7'-0" HIGH TILE WALL FINISH. -INSTALL EQUIPMENT. -INSTALL GYP. BD. CEILING FINISH. -REMOVE, RESTORE AND REINSTALL WINDOWS IN THEIR ENTIRETY. -INSTALL RESTORED DOORS IF POSSIBLE. DOORS TO MATCH HISTORIC TYPE 'IN-KIND'. -INSTALL STRUCTURAL UPGRADES (FLOORS, WALLS, CEILINGS, ETC.)		HATCHED INDICATES APPROX. AREA OF CONC. FLOOR FINISH.
			HATCHED INDICATES APPROX. AREA OF MARMOLEUM FLOOR FINISH.
	RESTROOM FINISHES -INSTALL TILE FLOOR FINISH. -INSTALL WATER RESISTANT GYP. BD. WALL FINISH, PAINT. -INSTALL TILE WALL FINISH. -INSTALL WATER RESISTANT GYP. BD. CEILING FINISH, PAINT. -INSTALL STRUCTURAL UPGRADES (FLOORS, WALLS, CEILINGS, ETC.)		
	STORAGE ROOM FINISHES -INSTALL MARMOLEUM AND WOOD BASE. -INSTALL GYP. BD. WALL FINISH, PAINT. -INSTALL GYP. BD. CEILING FINISH, PAINT. -INSTALL AND FINISH MISC. WOOD TRIMS, BASES, ETC. -REMOVE, RESTORE AND REINSTALL WINDOWS IN THEIR ENTIRETY. -INSTALL RESTORED DOORS IF POSSIBLE. DOORS TO MATCH HISTORIC TYPE 'IN-KIND'. -INSTALL STRUCTURAL UPGRADES (FLOORS, WALLS, CEILINGS, ETC.)		
	STAIR FINISHES -INSTALL CONCRETE FLOOR, FINISH. -INSTALL METAL PAN AND CONCRETE STAIRS. -INSTALL GYP. BD. WALL FINISH, PAINT. -INSTALL GYP. BD. CEILING FINISH, PAINT. -INSTALL RESTORED DOORS IF POSSIBLE. DOORS TO MATCH HISTORIC TYPE 'IN-KIND'. -INSTALL STRUCTURAL UPGRADES (FLOORS, WALLS, CEILINGS, ETC.)		

SCHEMATIC SECOND FLOOR PLAN - OPT. 3



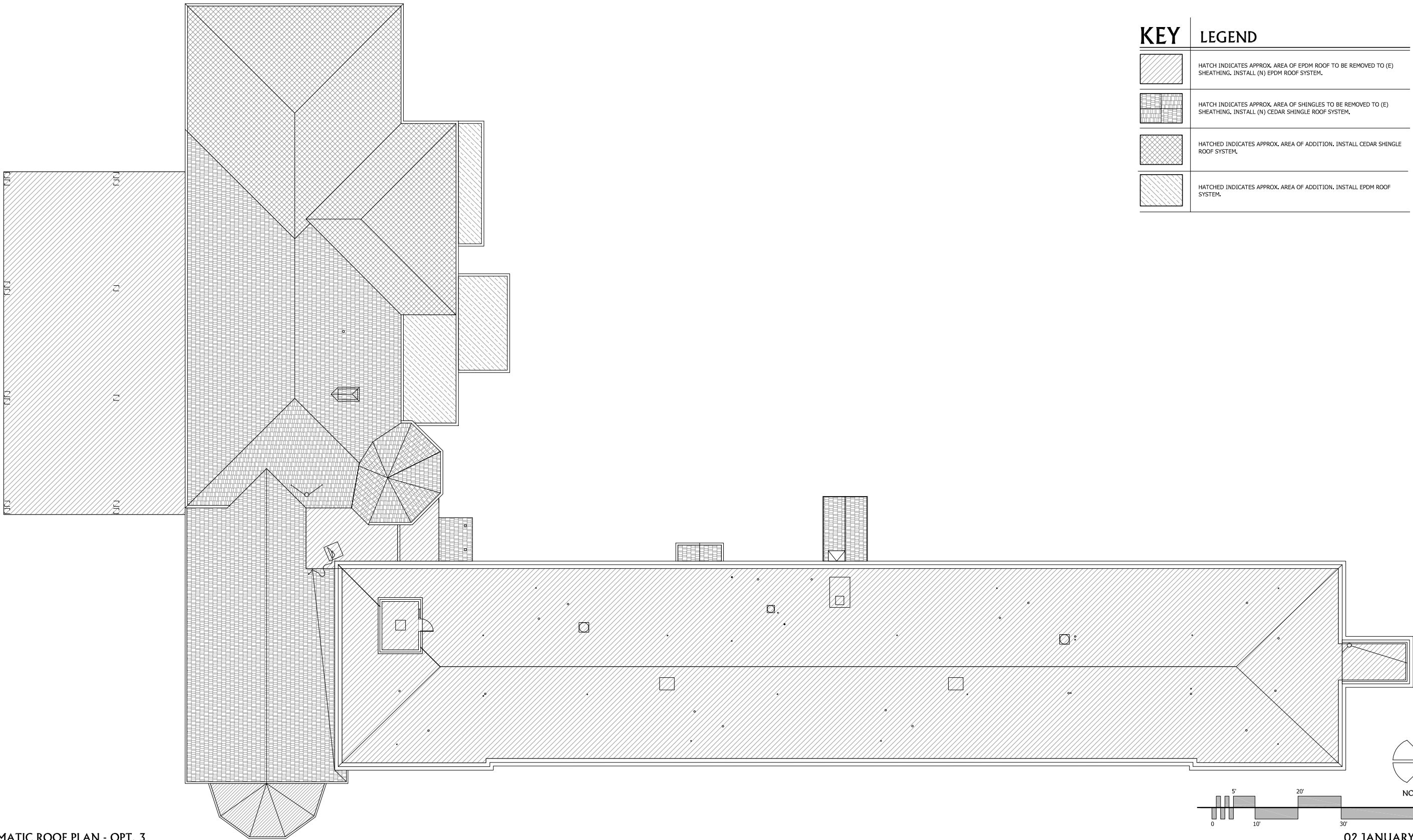
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




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KEY	LEGEND
	HATCH INDICATES APPROX. AREA OF EPDM ROOF TO BE REMOVED TO (E) SHEATHING. INSTALL (N) EPDM ROOF SYSTEM.
	HATCH INDICATES APPROX. AREA OF SHINGLES TO BE REMOVED TO (E) SHEATHING. INSTALL (N) CEDAR SHINGLE ROOF SYSTEM.
	HATCHED INDICATES APPROX. AREA OF ADDITION. INSTALL CEDAR SHINGLE ROOF SYSTEM.
	HATCHED INDICATES APPROX. AREA OF ADDITION. INSTALL EPDM ROOF SYSTEM.

SCHEMATIC ROOF PLAN - OPT. 3



Mammoth Hotel Renovation - Phase I

Mammoth - Yellowstone National Park



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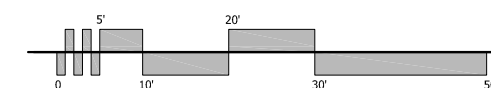


NORTH ELEVATIONS



SOUTH ELEVATIONS

EXTERIOR ELEVATIONS



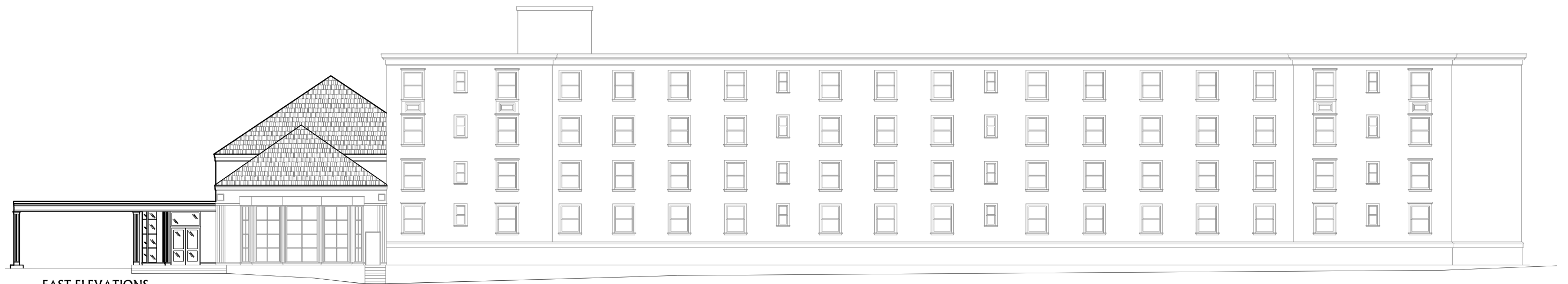
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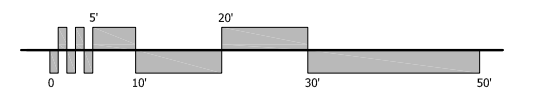


EAST ELEVATIONS



WEST ELEVATIONS

EXTERIOR ELEVATIONS



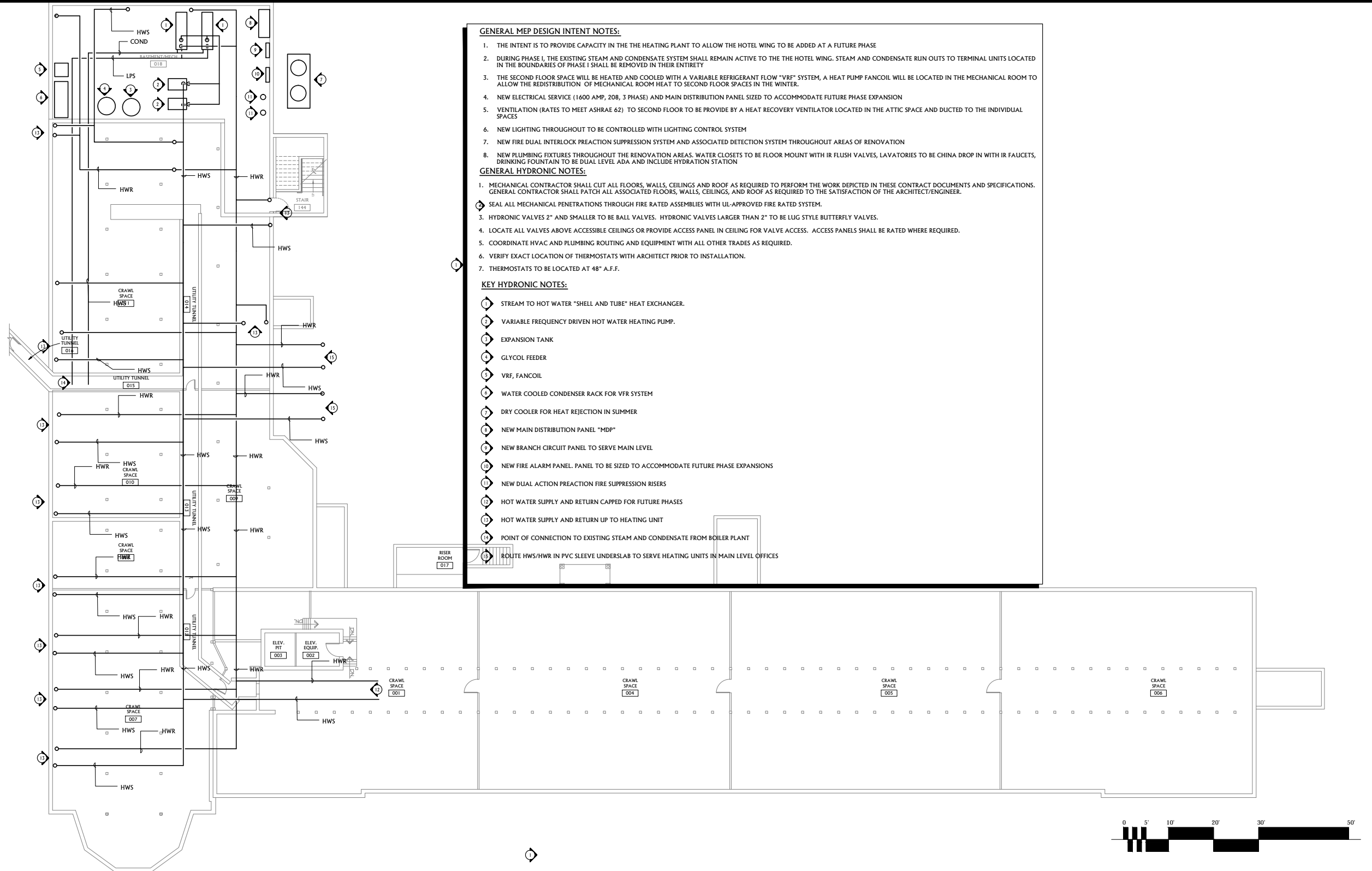
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BASEMENT MEP PLAN

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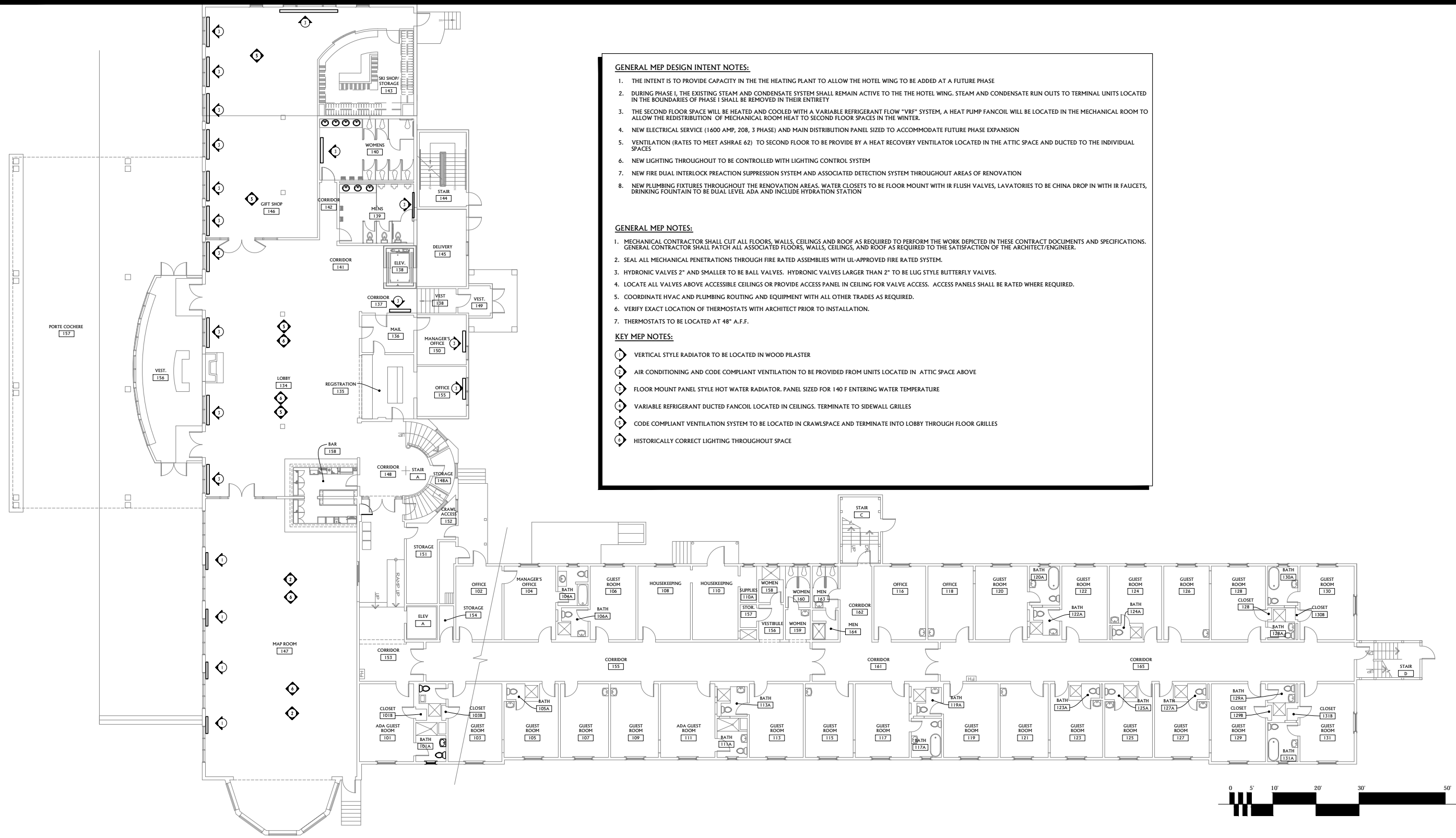
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13BZ4199

Mammoth Hotel Renovation - Phase I

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- GENERAL MEP DESIGN INTENT NOTES:**
1. THE INTENT IS TO PROVIDE CAPACITY IN THE THE HEATING PLANT TO ALLOW THE HOTEL WING TO BE ADDED AT A FUTURE PHASE
 2. DURING PHASE I, THE EXISTING STEAM AND CONDENSATE SYSTEM SHALL REMAIN ACTIVE TO THE THE HOTEL WING. STEAM AND CONDENSATE RUN OUTS TO TERMINAL UNITS LOCATED IN THE BOUNDARIES OF PHASE I SHALL BE REMOVED IN THEIR ENTIRETY
 3. THE SECOND FLOOR SPACE WILL BE HEATED AND COOLED WITH A VARIABLE REFRIGERANT FLOW "VRF" SYSTEM, A HEAT PUMP FANCOIL WILL BE LOCATED IN THE MECHANICAL ROOM TO ALLOW THE REDISTRIBUTION OF MECHANICAL ROOM HEAT TO SECOND FLOOR SPACES IN THE WINTER.
 4. NEW ELECTRICAL SERVICE (1600 AMP, 208, 3 PHASE) AND MAIN DISTRIBUTION PANEL SIZED TO ACCOMMODATE FUTURE PHASE EXPANSION
 5. VENTILATION (RATES TO MEET ASHRAE 62) TO SECOND FLOOR TO BE PROVIDE BY A HEAT RECOVERY VENTILATOR LOCATED IN THE ATTIC SPACE AND DUCTED TO THE INDIVIDUAL SPACES
 6. NEW LIGHTING THROUGHOUT TO BE CONTROLLED WITH LIGHTING CONTROL SYSTEM
 7. NEW FIRE DUAL INTERLOCK PREACTION SUPPRESSION SYSTEM AND ASSOCIATED DETECTION SYSTEM THROUGHOUT AREAS OF RENOVATION
 8. NEW PLUMBING FIXTURES THROUGHOUT THE RENOVATION AREAS. WATER CLOSETS TO BE FLOOR MOUNT WITH IR FLUSH VALVES, LAVATORIES TO BE CHINA DROP IN WITH IR FAUCETS, DRINKING FOUNTAIN TO BE DUAL LEVEL ADA AND INCLUDE HYDRATION STATION
- GENERAL MEP NOTES:**
1. MECHANICAL CONTRACTOR SHALL CUT ALL FLOORS, WALLS, CEILINGS AND ROOF AS REQUIRED TO PERFORM THE WORK DEPICTED IN THESE CONTRACT DOCUMENTS AND SPECIFICATIONS. GENERAL CONTRACTOR SHALL PATCH ALL ASSOCIATED FLOORS, WALLS, CEILINGS, AND ROOF AS REQUIRED TO THE SATISFACTION OF THE ARCHITECT/ENGINEER.
 2. SEAL ALL MECHANICAL PENETRATIONS THROUGH FIRE RATED ASSEMBLIES WITH UL-APPROVED FIRE RATED SYSTEM.
 3. HYDRONIC VALVES 2" AND SMALLER TO BE BALL VALVES. HYDRONIC VALVES LARGER THAN 2" TO BE LUG STYLE BUTTERFLY VALVES.
 4. LOCATE ALL VALVES ABOVE ACCESSIBLE CEILINGS OR PROVIDE ACCESS PANEL IN CEILING FOR VALVE ACCESS. ACCESS PANELS SHALL BE RATED WHERE REQUIRED.
 5. COORDINATE HVAC AND PLUMBING ROUTING AND EQUIPMENT WITH ALL OTHER TRADES AS REQUIRED.
 6. VERIFY EXACT LOCATION OF THERMOSTATS WITH ARCHITECT PRIOR TO INSTALLATION.
 7. THERMOSTATS TO BE LOCATED AT 48" A.F.F.
- KEY MEP NOTES:**
- 1 VERTICAL STYLE RADIATOR TO BE LOCATED IN WOOD PILASTER
 - 2 AIR CONDITIONING AND CODE COMPLIANT VENTILATION TO BE PROVIDED FROM UNITS LOCATED IN ATTIC SPACE ABOVE
 - 3 FLOOR MOUNT PANEL STYLE HOT WATER RADIATOR. PANEL SIZED FOR 140 F ENTERING WATER TEMPERATURE
 - 4 VARIABLE REFRIGERANT DUCTED FANCOIL LOCATED IN CEILINGS. TERMINATE TO SIDEWALL GRILLES
 - 5 CODE COMPLIANT VENTILATION SYSTEM TO BE LOCATED IN CRAWLSPACE AND TERMINATE INTO LOBBY THROUGH FLOOR GRILLES
 - 6 HISTORICALLY CORRECT LIGHTING THROUGHOUT SPACE



FIRST FLOOR MEP PLAN

02 JANUARY 2015

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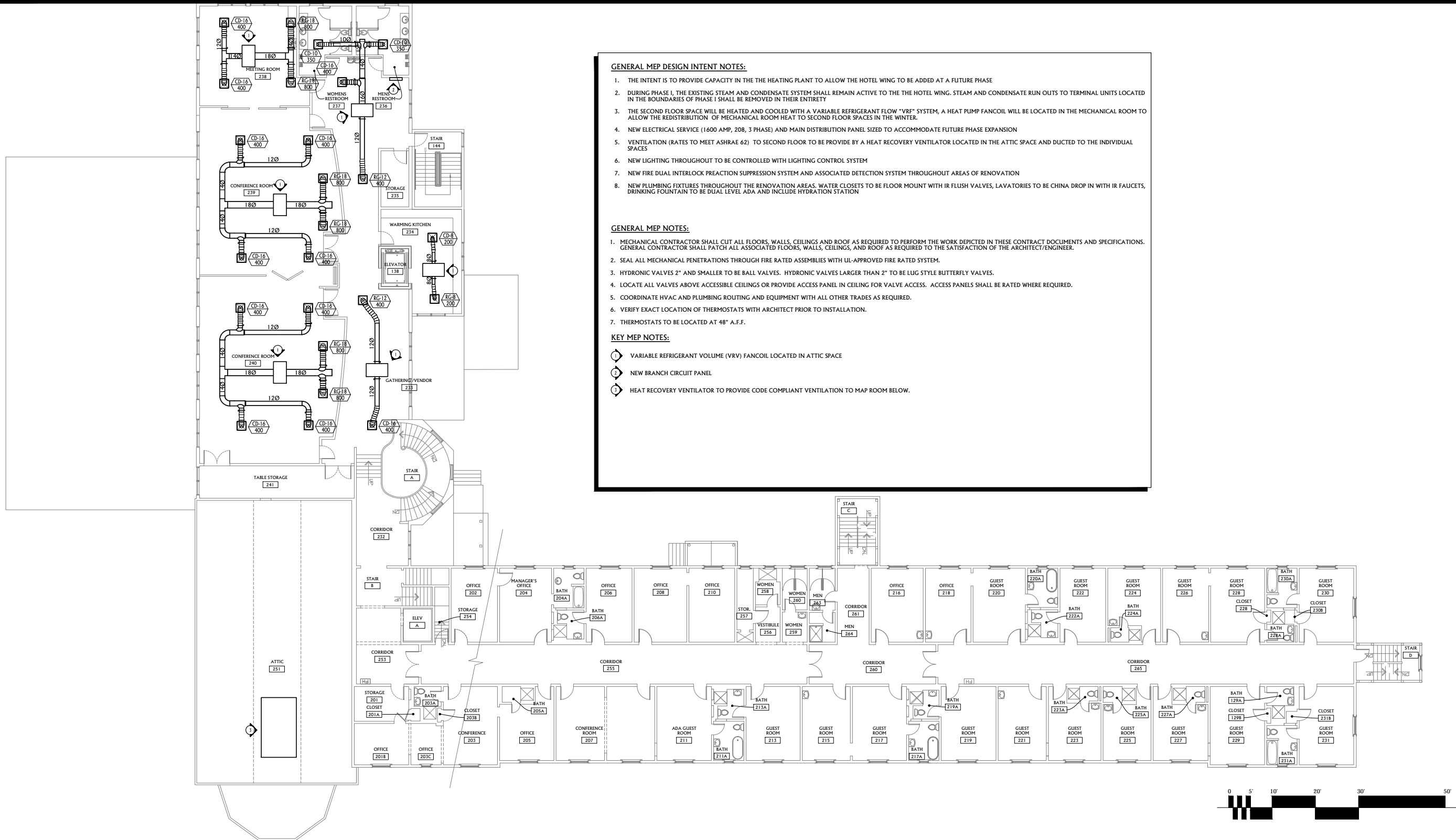


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Mammoth Hotel Renovation - Phase I

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GENERAL MEP DESIGN INTENT NOTES:

1. THE INTENT IS TO PROVIDE CAPACITY IN THE THE HEATING PLANT TO ALLOW THE HOTEL WING TO BE ADDED AT A FUTURE PHASE
2. DURING PHASE I, THE EXISTING STEAM AND CONDENSATE SYSTEM SHALL REMAIN ACTIVE TO THE THE HOTEL WING. STEAM AND CONDENSATE RUN OUTS TO TERMINAL UNITS LOCATED IN THE BOUNDARIES OF PHASE I SHALL BE REMOVED IN THEIR ENTIRETY
3. THE SECOND FLOOR SPACE WILL BE HEATED AND COOLED WITH A VARIABLE REFRIGERANT FLOW "VRF" SYSTEM, A HEAT PUMP FANCOIL WILL BE LOCATED IN THE MECHANICAL ROOM TO ALLOW THE REDISTRIBUTION OF MECHANICAL ROOM HEAT TO SECOND FLOOR SPACES IN THE WINTER.
4. NEW ELECTRICAL SERVICE (1600 AMP, 208, 3 PHASE) AND MAIN DISTRIBUTION PANEL SIZED TO ACCOMMODATE FUTURE PHASE EXPANSION
5. VENTILATION (RATES TO MEET ASHRAE 62) TO SECOND FLOOR TO BE PROVIDE BY A HEAT RECOVERY VENTILATOR LOCATED IN THE ATTIC SPACE AND DUCTED TO THE INDIVIDUAL SPACES
6. NEW LIGHTING THROUGHOUT TO BE CONTROLLED WITH LIGHTING CONTROL SYSTEM
7. NEW FIRE DUAL INTERLOCK PREACTION SUPPRESSION SYSTEM AND ASSOCIATED DETECTION SYSTEM THROUGHOUT AREAS OF RENOVATION
8. NEW PLUMBING FIXTURES THROUGHOUT THE RENOVATION AREAS. WATER CLOSETS TO BE FLOOR MOUNT WITH IR FLUSH VALVES, LAVATORIES TO BE CHINA DROP IN WITH IR FAUCETS, DRINKING FOUNTAIN TO BE DUAL LEVEL ADA AND INCLUDE HYDRATION STATION

GENERAL MEP NOTES:

1. MECHANICAL CONTRACTOR SHALL CUT ALL FLOORS, WALLS, CEILINGS AND ROOF AS REQUIRED TO PERFORM THE WORK DEPICTED IN THESE CONTRACT DOCUMENTS AND SPECIFICATIONS. GENERAL CONTRACTOR SHALL PATCH ALL ASSOCIATED FLOORS, WALLS, CEILINGS, AND ROOF AS REQUIRED TO THE SATISFACTION OF THE ARCHITECT/ENGINEER.
2. SEAL ALL MECHANICAL PENETRATIONS THROUGH FIRE RATED ASSEMBLIES WITH UL-APPROVED FIRE RATED SYSTEM.
3. HYDRONIC VALVES 2" AND SMALLER TO BE BALL VALVES. HYDRONIC VALVES LARGER THAN 2" TO BE LUG STYLE BUTTERFLY VALVES.
4. LOCATE ALL VALVES ABOVE ACCESSIBLE CEILINGS OR PROVIDE ACCESS PANEL IN CEILING FOR VALVE ACCESS. ACCESS PANELS SHALL BE RATED WHERE REQUIRED.
5. COORDINATE HVAC AND PLUMBING ROUTING AND EQUIPMENT WITH ALL OTHER TRADES AS REQUIRED.
6. VERIFY EXACT LOCATION OF THERMOSTATS WITH ARCHITECT PRIOR TO INSTALLATION.
7. THERMOSTATS TO BE LOCATED AT 48" A.F.F.

KEY MEP NOTES:

- ① VARIABLE REFRIGERANT VOLUME (VRF) FANCOIL LOCATED IN ATTIC SPACE
- ② NEW BRANCH CIRCUIT PANEL
- ③ HEAT RECOVERY VENTILATOR TO PROVIDE CODE COMPLIANT VENTILATION TO MAP ROOM BELOW.

SECOND FLOOR MEP PLAN

02 JANUARY 2015

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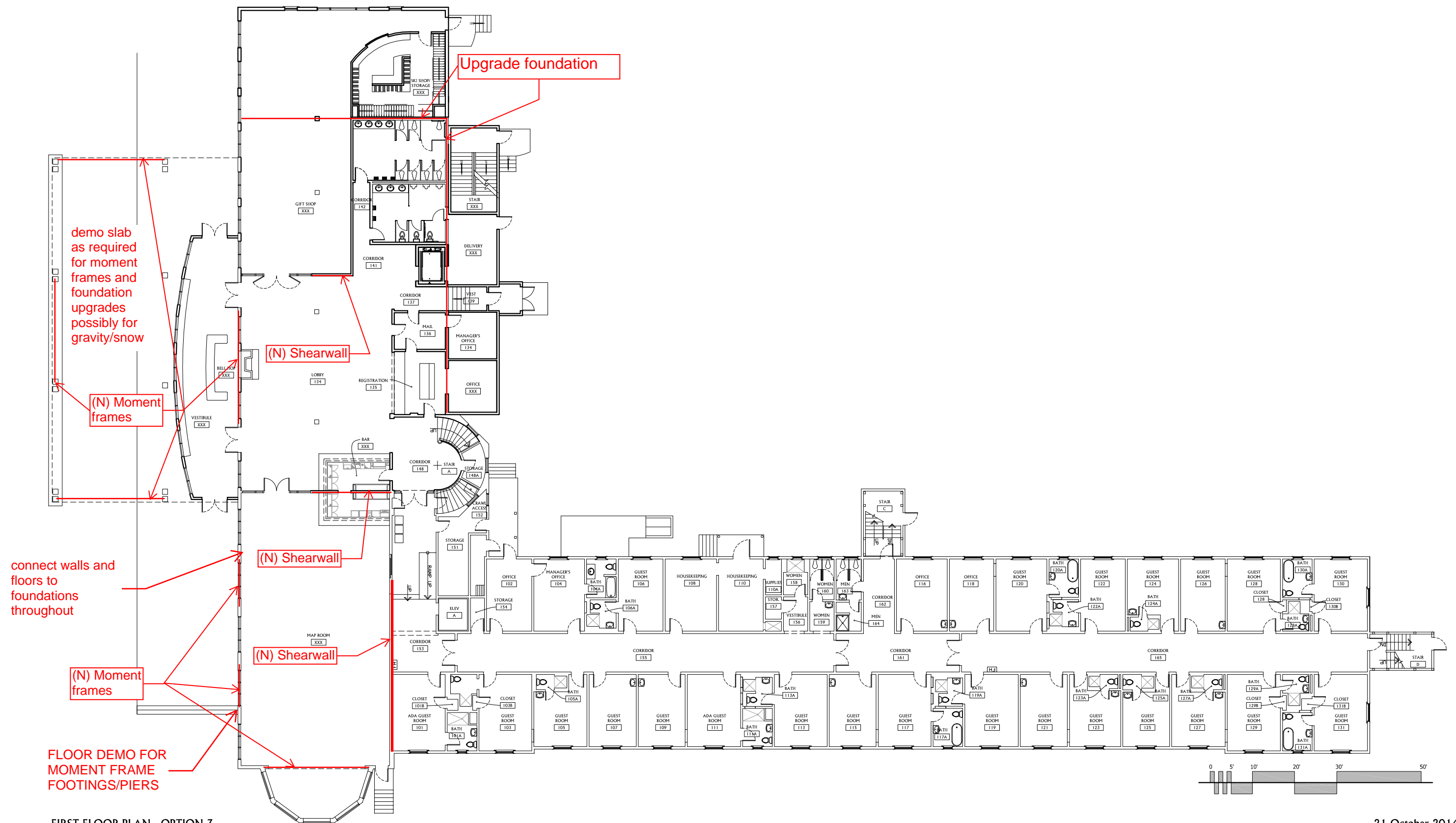
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ACE JOB #
18BZ4199

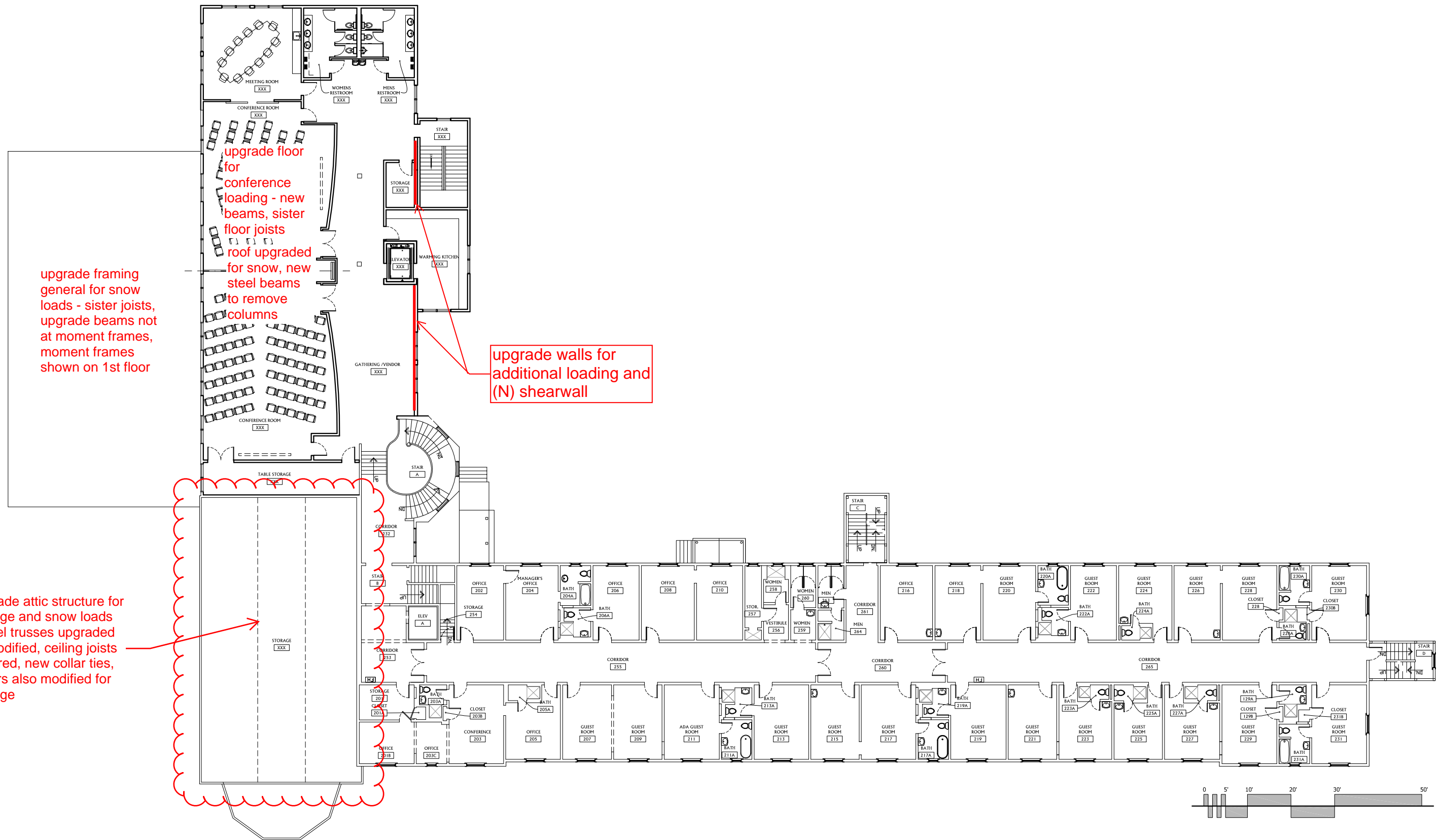
Mammoth Hotel Renovation - Phase I

Mammoth - Yellowstone National Park





21 October 2014



SECOND FLOOR PLAN - OPTION 3

21 October 2014



Mammoth Hotel Renovation - Phase I

Mammoth - Yellowstone National Park



MAMMOTH HOT SPRINGS HOTEL
Historic Structures Report
Yellowstone National Park

March, 2015



APPENDICES D
Building Code Review

Mammoth Hotel Renovation Code Review Summary IBC 2012

A&E project #: 13092

CODE SUMMARY		NOTES
APPLICABLE CODES	INTERNATIONAL EXISTING BUILDING CODE 2012 (IBC) -Chapter 7 Alterations- Level 2 -Chapter 11 Additions -Chapter 12 Historic Buildings	
OCCUPANCY	INTERNATIONAL BUILDING CODE 2012 (IEBC)	
OCCUPANCY LOAD	MIXED: A-2, A-3, B, R, M, S-1	
BUILDING TYPE	1372 TOTAL (SEE TABLE BELOW)	
OCCUPANCY SEPARATION	V-A	exception: IEBC 1205.4
ALLOWABLE STORIES, AREA AND HEIGHT	1HR (BETWEEN A AND R) based on IBC <u>AREA A</u> (A-2): 2 / 11,5500 / 50' / Type V-A construction <u>AREA B</u> (R-1): 3 / 12,000 / 50' / Type V-A construction	see exception: IBC section 504.2 Automatic sprinkler system increase
REQUIRED EXITS	3	
EXIT ACCESS TRAVEL DISTANCE	250 FEET	
PLUMBING FIXTURES	SEE TABLE BELOW	

CONSTRUCTION TYPE		NOTES
Construction Type IBC 602.1 - 602.5	Type V Wood Light Frame	
	A	B
Allowed Height	50'	40'
Occupancy IBC table 503	Allowable Stories / Area	
	ASSEMBLY A-2	2 / 11,500 1 / 6,000
	ASSEMBLY A-3	2 / 11,500 1 / 6,000
	RESIDENTIAL R-1	3 / 12,000 2 / 7,000
	BUSINESS B	3 / 18,000 2 / 9,000
	STORAGE S-1	3 / 14,000 1 / 9,000
	A=Fire Rated (1 HR), B=Partially Rated	

APPLICABLE IBC CODE TO PROJECT		NOTES
2012 IBC	AREA OF CONCERN	SOLUTION
1019.1 Minimum number of exits.	Entire Bldg.	Occupant load (persons per story): 501-1000-3 req'd exits
1016.1 Exit access, Travel distance limitations.		250 feet max with sprinklers
1014.3 COMMON PATH OF EGRESS TRAVEL		B: 100 feet with sprinklers; All others: 75 feet with sprinklers
1009.3 Exit access stairways. Floor openings between stories created by exit access stairways shall be enclosed.	Stair A	use exception #4: <i>In other than Group B and M occupancies, exit access stairway openings are not required to be enclosed provided that the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1, the floor opening does not connect more than four stories, the area of the floor opening between stories does not exceed twice the horizontal projected area of the exit access stairway, and the opening is protected by a draft curtain and closely spaced sprinklers in accordance with NFPA 13.</i>
TABLE 508.4 REQUIRED SEPARATION OF OCCUPANCIES (HOURS)		NEED TO PROVIDE 1 HR SEPARATION BETWEEN THE TWO WINGS
		A&E ANSWER COMPLIANT COMPLIANT COMPLIANT MUST PROVIDE DRAFT CURTAIN AND CLOSELY SPACED SPRINKLERS AT STAIR A

AREA										NOTES
Actual Area / 4 Stories	A-2	A-3	B	R	M	S-1		TOTAL GSF		
First Floor	2,494	2,403	1,581	4778	2014	362	13,632	21468		
Second Floor	4033		1,669	4614		487	10,883	19854		
Third Floor				6083			6,083	10953		
Fourth Floor				6083			6,083	10953		
Total Area	6,527	2,403	3,250	21558	2014	849	36,601	63228		

OCCUPANT LOAD								NOTES
Occupancy Load IBC 1004.1.1	A-2 5/7 Net	A-3 15 Net	B 100 Gross	R-1 200 Gross	M 60/300 Gross	S-1 300 Gross		
First Floor	482	160	16	25	31	2	716	SEE PLANS FOR CALCULATIONS
Second Floor	548		17	25		2	592	
Third Floor				32			32	
Fourth Floor				32			32	
Total Occupants	1030	160	33	114	31	4	1372	

EGRESS WIDTH						NOTES
Means of Egress Widths IBC 1005 & 1009.1	A-2 & A-3	B	R-1	M	Mixed	
Stairways .2" per occupant (.3" if non sprinkled)	48				48	
Halls .15" per occupant (.2" if non sprinkled)	36	36	36	36	54	

FIXTURE COUNT						NOTES
Plumbing Requirements IBC 2902.1	Water Closet		Lav	Drinking Fountain	Service Sink	
Able to divide occupancy load by 2 per 2902.1.1	M	W				
A-2	1 per 75	1 per 75	1 per 200	1 per 500	1 serv. sink	
A-3	1 per 125	1 per 65	1 per 200	1 per 500	1 serv. sink	
B	1 per 25"		1 per 40**	1 per 100	1 serv. sink	
R-1	1 per unit		1 per unit		1 serv. sink	
M	1 per 500		1 per 750	1 per 1000	1 serv. sink	
S-1	1 per 100		1 per 100	1 per 1000	1 serv. sink	
First Floor	5	5	8	2	1	MUST ADD (1) SERVICE SINK TO ALL FLOORS.
Second Floor	4	4	4	2	1	
Third Floor					1	MUST ADD BATHROOM TO EACH UNIT TO COMPLY WITH 2012 IBC
Fourth Floor					1	
REQUIRED TOTALS	9	9	12	4	4	
	NOTE: SEE CODE REVIEW DRAWINGS FOR CALCULATIONS					

*WC M+F: 1 per 25 for the first 50 and 1 per 50 for the remainder exceeding 50

**LAV: 1 per 40 for the first 80 and 1 per 80 for the remainder exceeding 80

MAMMOTH HOTEL CODE SUMMARY

Mammoth Hotel - Historic Structures Report Code Summary

March 2015

The following is a life safety code summary for the existing Mammoth Hotel in Yellowstone National Park, Wyoming. It has been conducted under the 2012 International Existing Building Code based on the existing conditions of the building in connection with the update for the Mammoth Hotel Historic Structures Report. The following review is interpretation and information of the application of the codes noted above as it relates to a potential Major Renovation project to the existing building. The final application of any provisions must take into account the actual design and work to be completed. Authority for application of any provision and compliance review is the responsibility of the design professional and building office with jurisdiction for the building site.

2012 INTERNATIONAL EXISTING BUILDING CODE (IEBC)

Chapter 3 - Compliance Methods

301.1 Compliance Methods, General. The *repair, alteration, change of occupancy, addition* or relocation of all *existing buildings* shall comply with one of the methods listed in Sections 301.1.1 through 301.1.3 as selected by the applicant. Application of a method shall be the sole basis for assessing the compliance of work performed under a single permit unless otherwise approved by the *code official*. Sections 301.1.1 through 301.1.3 shall not be applied in combination with each other. Where this code requires consideration of the seismic force-resisting system of an *existing building* subject to *repair, alteration, change of occupancy, addition* or relocation of *existing buildings*, the seismic evaluation and design shall be based on Section 301.1.4 regardless of which compliance method is used.

Exception: Subject to the approval of the *code official*, *alterations* complying with the laws in existence at the time the building or the affected portion of the building was built shall be considered in compliance with the provisions of this code unless the building is undergoing more than a limited structural *alteration* as defined in Section 907.4.3. New structural members added as part of the *alteration* shall comply with the *International Building Code*. *Alterations of existing buildings in flood hazard areas* shall comply with Section 701.3.

301.1.1 Prescriptive compliance method. *Repairs, alterations, additions and changes of occupancy* complying with Chapter 4 of this code in buildings complying with the *International Fire Code* shall be considered in compliance with the provisions of this code.

301.1.2 Work area compliance method. *Repairs, alterations, additions, changes in occupancy and relocated buildings* complying with the applicable requirements of Chapters 5 through 13 of this code shall be considered in compliance with the provisions of this code.

301.1.4 Evaluation and design procedures. The seismic evaluation and design shall be based on the procedures specified in the *International Building Code*, ASCE 31 or ASCE 41. The procedures contained in Appendix A of this code shall be permitted to be used as specified in Section 301.1.4.2.

301.1.4.1 Compliance with IBC level seismic forces. Where compliance with the seismic design provisions of the *International Building Code* is required, the procedures shall be in accordance with one of the following:

1. One-hundred percent of the values in the *International Building Code*. Where the existing seismic force-resisting system is a type that can be designated as "Ordinary," values of R , Ω_0 and C_d used for analysis in accordance with Chapter 16 of the *International Building Code* shall

MAMMOTH HOTEL CODE SUMMARY

be those specified for structural systems classified as “Ordinary” in accordance with Table 12.2-1 of ASCE 7, unless it can be demonstrated that the structural system will provide performance equivalent to that of a “Detailed,” “Intermediate” or “Special” system.

2. Compliance with ASCE 41 using both the BSE-1 and BSE-2 earthquake hazard levels and the corresponding performance levels shown in Table 301.1.4.1.

Chapter 5 – Classification of Work

501.1 Scope. The provisions of this chapter shall be used in conjunction with Chapters 6 through 13 and shall apply to the *alteration, repair, addition and change of occupancy* of existing structures, including historic and moved structures, as referenced in Section 301.1.2. The work performed on an *existing building* shall be classified in accordance with this chapter.

501.1.1 Compliance with other alternatives. *Alterations, repairs, additions and changes of occupancy* to existing structures shall comply with the provisions of Chapters 6 through 13 or with one of the alternatives provided in Section 301.1.

501.3 Occupancy and use. When determining the appropriate application of the referenced sections of this code, the occupancy and use of a building shall be determined in accordance with Chapter 3 of the *International Building Code*.

502.1 Repairs, Scope. *Repairs*, as defined in Chapter 2, include the patching or restoration or replacement of damaged materials, elements, *equipment or fixtures* for the purpose of maintaining such components in good or sound condition with respect to existing loads or performance requirements.

502.2 Application. *Repairs* shall comply with the provisions of Chapter 6.

502.3 Related work. Work on non-damaged components that is necessary for the required *repair* of damaged components shall be considered part of the *repair* and shall not be subject to the provisions of Chapter 7, 8, 9, 10 or 11.

503.1 Alteration – Level 1, Scope. Level 1 alterations include the removal and replacement or the covering of existing materials, elements, equipment, or fixtures using new materials, elements, equipment, or fixtures that serve the same purpose.

503.2 Application. Level 1 *alterations* shall comply with the provisions of Chapter 7.

504.1 Alteration – Level 2, Scope. 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.

504.2 Application. Level 2 *alterations* shall comply with the provisions of Chapter 7 for Level 1 *alterations* as well as the provisions of Chapter 8.

505.1 Alterations – Level 3, Scope. Level 3 *alterations* apply where the *work area* exceeds 50 percent of the aggregate area of the building.

505.2 Application. Level 3 *alterations* shall comply with the provisions of Chapters 7 and 8 for Level 1 and 2 *alterations*, respectively, as well as the provisions of Chapter 9.

508.1 Historic Buildings, Scope. *Historic building* provisions shall apply to buildings classified as historic as defined in Chapter 2.

508.2 Application. Except as specifically provided for in Chapter 12, *historic buildings* shall comply with applicable provisions of this code for the type of work being performed.

MAMMOTH HOTEL CODE SUMMARY

Chapter 6 – Repairs

602.1 Existing building materials. Materials already in use in a building in compliance with requirements or approvals in effect at the time of their erection or installation shall be permitted to remain in use unless determined by the *code official* to render the building or structure unsafe or *dangerous* as defined in Chapter 2.

602.2 New and replacement materials. Except as otherwise required or permitted by this code, materials permitted by the applicable code for new construction shall be used. Like materials shall be permitted for *repairs* and *alterations*, provided no *dangerous* or *unsafe* condition, as defined in Chapter 2, is created. Hazardous materials, such as asbestos and lead-based paint, shall not be used where the code for new construction would not permit their use in buildings of similar occupancy, purpose and location.

602.3 Glazing in hazardous locations. Replacement glazing in hazardous locations shall comply with the safety glazing requirements of the *International Building Code* or *International Residential Code* as applicable.

Chapter 7 – Alterations, Level 1

702.1 Interior finishes. All newly installed interior wall and ceiling finishes shall comply with Chapter 8 of the *International Building Code*.

702.2 Interior floor finish. New interior floor finish, including new carpeting used as an interior floor finish material, shall comply with Section 804 of the *International Building Code*.

702.3 Interior trim. All newly installed interior trim materials shall comply with Section 806 of the *International Building Code*.

702.4 Materials and methods. All new work shall comply with the materials and methods requirements in the *International Building Code*, *International Energy Conservation Code*, *International Mechanical Code*, and *International Plumbing Code*, as applicable, that specify material standards, detail of installation and connection, joints, penetrations, and continuity of any element, component, or system in the building.

703.1 Fire Protection, General. *Alterations* shall be done in a manner that maintains the level of fire protection provided.

704.1 Means of Egress, General. *Repairs* shall be done in a manner that maintains the level of protection provided for the means of egress.

705.1 Accessibility, General. A *facility* that is altered shall comply with the applicable provisions in Sections 705.1.1 through 705.1.14, and Chapter 11 of the *International Building Code* unless it is *technically infeasible*. Where compliance with this section is *technically infeasible*, the alteration shall provide access to the maximum extent that is technically feasible. A *facility* that is constructed or altered to be accessible shall be maintained accessible during occupancy.

Exceptions:

1. The altered element or space is not required to be on an accessible route unless required by Section 705.2.
2. Accessible means of egress required by Chapter 10 of the *International Building Code* are not required to be provided in existing *facilities*.

MAMMOTH HOTEL CODE SUMMARY

705.1.1 Entrances. Where an *alteration* includes alterations to an entrance, and the *facility* has an accessible entrance on an accessible route, the altered entrance is not required to be accessible unless required by Section 705.2. Signs complying with Section 1110 of the *International Building Code* shall be provided.

705.1.4 Ramps. Where steeper slopes than allowed by Section 1010.3 of the *International Building Code* are necessitated by space limitations, the slope of ramps in or providing access to existing facilities shall comply with Table 705.1.4:

<u>Slope</u>	<u>Maximum Rise</u>
Steeper than 1:10 but not steeper than 1:8	3 inches
Steeper than 1:12 but not steeper than 1:10	6 inches

705.2 Alterations affecting an area containing a primary function. Where an *alteration* affects the accessibility to a, or contains an area of, *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*.

Chapter 8 – Alterations, Level 2

803.1 Scope. The requirements of this section are limited to work areas in which Level 2 *alterations* are being performed, and shall apply beyond the *work area* where specified.

803.2 Vertical openings. Existing vertical openings shall comply with the provisions of Sections 803.2.1, 803.2.2 and 803.2.3.

803.2.1 Existing vertical openings. All existing interior vertical openings connecting two or more floors shall be enclosed with approved assemblies having a fire-resistance rating of not less than 1 hour with approved opening protectives.

Exceptions:

1. Where vertical opening enclosure is not required by the *International Building Code* or the *International Fire Code*.
2. Interior vertical openings other than stairways may be blocked at the floor and ceiling of the *work area* by installation of not less than 2 inches of solid wood or equivalent construction.
3. The enclosure shall not be required where:
 - 3.2. All of the following conditions are met:
 - 3.2.1. The communicating area has a low hazard occupancy or has a moderate hazard occupancy that is protected throughout by an automatic sprinkler system.
 - 3.2.2. The lowest or next to the lowest level is a street floor.
 - 3.2.3. The entire area is open and unobstructed in a manner such that it may be assumed that a fire in any part of the interconnected spaces will be readily obvious to all of the occupants.
 - 3.2.4. Exit capacity is sufficient to provide egress simultaneously for all occupants of all levels by considering all areas to be a single floor area for the determination of required exit capacity.
 - 3.2.5. Each floor level, considered separately, has at least one-half of its individual required exit capacity provided by an exit or exits leading directly out of that level without having to traverse another communicating floor level or be exposed to the smoke or fire spreading from another communicating floor level.
4. In Group A occupancies, a minimum 30-minute enclosure shall be provided to protect all vertical openings not exceeding three stories.
5. In Group B occupancies, a minimum 30-minute enclosure shall be provided to protect all vertical openings not exceeding three stories. This enclosure, or the enclosure specified in Section 803.2.1, shall not be required in the following locations:

MAMMOTH HOTEL CODE SUMMARY

- 5.1. Buildings not exceeding 3,000 square feet per floor.
- 5.2. Buildings protected throughout by an approved automatic fire sprinkler system.

803.2.2 Supplemental shaft and floor opening enclosure requirements. Where the *work area* on any floor exceeds 50 percent of that floor area, the enclosure requirements of Section 803.2 shall apply to vertical openings other than stairways throughout the floor.

803.2.3 Supplemental stairway enclosure requirements. Where the *work area* on any floor exceeds 50 percent of that floor area, stairways that are part of the means of egress serving the *work area* shall, at a minimum, be enclosed with smoke-tight construction on the highest *work area* floor and all floors below.

803.5 Guards. The requirements of Sections 803.5.1 and 803.5.2 shall apply in all *work areas*.

803.5.1 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.

803.5.2 Design. Where there are no guards or where existing guards must be replaced, the guards shall be designed and installed in accordance with the *International Building Code*.

804.1 Fire Protection, Scope. The requirements of this section shall be limited to work areas in which Level 2 *alterations* are being performed, and where specified they shall apply throughout the floor on which the *work areas* are located or otherwise beyond the *work area*.

804.1.1 Corridor ratings. Where an approved automatic sprinkler system is installed throughout the story, the required fire-resistance rating for any corridor located on the story shall be permitted to be reduced in accordance with the *International Building Code*. In order to be considered for a corridor rating reduction, such system shall provide coverage for the stairwell landings serving the floor and the intermediate landings immediately below.

804.2 Automatic sprinkler systems. Automatic sprinkler systems shall be provided in accordance with the requirements of Sections 804.2.1 through 804.2.5. Installation requirements shall be in accordance with the *International Building Code*.

804.2.1.1 Supplemental automatic sprinkler system requirements. Where the *work area* on any floor exceeds 50 percent of that floor area, Section 804.2.1 shall apply to the entire floor on which the *work area* is located.

804.2.2 Groups A, B, E, F-1, H, I, M, R-1, R-2, R-4, S-1 and S-2. In buildings with occupancies in Groups A, B, E, F-1, H, I, M, R-1, R-2, R-4, S-1 and S-2, work areas that have exits or corridors shared by more than one tenant or that have exits or corridors serving an occupant load greater than 30 shall be provided with automatic sprinkler protection where all of the following conditions occur:

1. The *work area* is required to be provided with automatic sprinkler protection in accordance with the *International Building Code* as applicable to new construction; and
2. The work area exceeds 50 percent of the floor area.

804.4 Fire alarm and detection. An approved fire alarm system shall be installed in accordance with Sections 804.4.1 through 804.4.3. Where automatic sprinkler protection is provided in accordance with Section 804.2 and is connected to the building fire alarm system, automatic heat detection shall not be required. An approved automatic fire detection system shall be installed in accordance with the provisions of this code and NFPA 72. Devices, combinations of devices, appliances, and equipment shall be approved. The automatic fire detectors shall be smoke detectors, except that an approved alternative type of detector shall be installed in spaces such as boiler rooms, where products of combustion are present during normal operation in sufficient quantity to actuate a smoke detector.

MAMMOTH HOTEL CODE SUMMARY

804.4.1 Occupancy requirements. A fire alarm system shall be installed in accordance with Sections 804.4.1.1 through 804.4.1.7. Existing alarm-notification appliances shall be automatically activated throughout the building. Where the building is not equipped with a fire alarm system, alarm-notification appliances within the *work area* shall be provided and automatically activated.

805.4.1.1 Occupant load and travel distance. In any *work area*, all rooms and spaces having an occupant load greater than 50 or in which the travel distance to an exit exceeds 75 feet shall have a minimum of two egress doorways.

Exception: 1. Storage rooms having a maximum occupant load of 10.

805.4.2 Door swing. 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.

805.4.3 Door closing. In any *work area*, all doors opening onto an exit passageway at grade or an exit stair shall be self-closing or automatic-closing by listed closing devices.

805.6 Dead-end corridors. Dead-end corridors in any *work area* shall not exceed 35 feet.

Exceptions:

1. Where dead-end corridors of greater length are permitted by the *International Building Code*.
2. In other than Group A and H occupancies, the maximum length of an existing dead-end corridor shall be 50 feet in buildings equipped throughout with an automatic fire alarm system installed in accordance with the *International Building Code*.
3. In other than Group A and H occupancies, the maximum length of an existing dead-end corridor shall be 70 feet in buildings equipped throughout with an automatic sprinkler system installed in accordance with the *International Building Code*.
4. In other than Group A and H occupancies, the maximum length of an existing, newly constructed, or extended dead-end corridor shall not exceed 50 feet on floors equipped with an automatic sprinkler system installed in accordance with the *International Building Code*.

805.7.1 Artificial lighting required. Means of egress in all work areas shall be provided with artificial lighting in accordance with the requirements of the *International Building Code*.

805.8.1 Work areas. Means of egress in all work areas shall be provided with exit signs in accordance with the requirements of the *International Building Code*.

805.9.1 Minimum requirement. Every required exit stairway that is part of the means of egress for any *work area* and that has three or more risers and is not provided with at least one handrail, or in which the existing handrails are judged to be in danger of collapsing, shall be provided with handrails for the full length of the run of steps on at least one side. All exit stairways with a required egress width of more than 66 inches shall have handrails on both sides.

805.9.2 Design. Handrails required in accordance with Section 805.9.1 shall be designed and installed in accordance with the provisions of the *International Building Code*.

805.10 Guards. The requirements of Sections 805.10.1 and 805.10.2 shall apply to guards from the *work area* floor to, and including, the level of exit discharge but shall be confined to the egress path of any *work area*.

805.10.1 Minimum requirement. Every open portion of a stair, landing, or balcony that is more than 30 inches above the floor or grade below and is not provided with guards, or those portions in which existing guards are judged to be in danger of collapsing, shall be provided with guards.

805.10.2 Design. Guards required in accordance with Section 805.10.1 shall be designed and installed in accordance with the *International Building Code*.

MAMMOTH HOTEL CODE SUMMARY

Chapter 9 – Alteration, Level 3

904.2.1 Manual fire alarm systems. Where required by the *International Building Code*, a manual fire alarm system shall be provided throughout the *work area*. Alarm notification appliances shall be provided on such floors and shall be automatically activated as required by the *International Building Code*.

904.2.2 Automatic fire detection. Where required by the *International Building Code* for new buildings, automatic fire detection systems shall be provided throughout the *work area*.

905.2 Means-of-egress lighting. Means of egress from the highest *work area* floor to the floor of exit discharge shall be provided with artificial lighting within the exit enclosure in accordance with the requirements of the *International Building Code*.

905.3 Exit signs. Means of egress from the highest *work area* floor to the floor of exit discharge shall be provided with exit signs in accordance with the requirements of the *International Building Code*.

Chapter 12 – Historic Buildings

1201.2 Report. A *historic building* undergoing *repair, alteration, or change of occupancy* shall be investigated and evaluated. If it is intended that the building meet the requirements of this chapter, a written report shall be prepared and filed with the *code official* by a registered design professional when such a report is necessary in the opinion of the *code official*. Such report shall be in accordance with Chapter 1 and shall identify each required safety feature that is in compliance with this chapter and where compliance with other chapters of these provisions would be damaging to the contributing historic features. For buildings assigned to Seismic Design Category D, E or F, a structural evaluation describing, at a minimum, the vertical and horizontal elements of the lateral force-resisting system and any strengths or weaknesses therein shall be prepared. Additionally, the report shall describe each feature that is not in compliance with these provisions and shall demonstrate how the intent of these provisions is complied with in providing an equivalent level of safety.

1202.1 Repairs, General. Repairs to any portion of an *historic building* or structure shall be permitted with original or like materials and original methods of construction, subject to the provisions of this chapter. Hazardous materials, such as asbestos and lead-based paint, shall not be used where the code for new construction would not permit their use in buildings of similar occupancy, purpose and location.

1202.2 Unsafe conditions. Conditions determined by the *code official* to be *unsafe* shall be remedied. No work shall be required beyond what is required to remedy the *unsafe* conditions.

1203.7 One-hour fire-resistant assemblies. Where 1-hour fire-resistance-rated construction is required by these provisions, it need not be provided, regardless of construction or occupancy, where the existing wall and ceiling finish is wood or metal lath and plaster.

1203.9 Stairway railings. Grand stairways shall be accepted without complying with the handrail and guard requirements. Existing handrails and guards at all stairs shall be permitted to remain, provided they are not structurally *dangerous*.

1203.10.2 Guard openings. The spacing between existing intermediate railings or openings in existing ornamental patterns shall be accepted. Missing elements or members of a guard may be replaced in a manner that will preserve the historic appearance of the building or structure.

MAMMOTH HOTEL CODE SUMMARY

2012 INTERNATIONAL BUILDING CODE (IBC)

Chapter 3 – Use and Occupancy Classification

302.1 General. Structures or portions of structures shall be classified with respect to occupancy in one or more of the groups listed in this section. A room or space that is intended to be occupied at different times for different purposes shall comply with all of the requirements that are applicable to each of the purposes for which the room or space will be occupied. Structures with multiple occupancies or uses shall comply with Section 508. Where a structure is proposed for a purpose that is not specifically provided for in this code, such structure shall be classified in the group that the occupancy most nearly resembles, according to the fire safety and relative hazard involved.

Mixed Occupancy:	Group A-3	Exhibition Halls / Lecture Halls /
	Group R-1	Community Halls / Waiting Areas Hotel (Transient)

Chapter 5 – General Building Heights and Areas

Table 503, Allowable Building Heights and Areas.

Group A-3 (Assembly) Allowable:

Type V-A	50'-0"	2 stories above grade	11,500 sf per story
Actual:	35'-0"	2 stories above grade	8200 sf per story

Group R-1 (Hotel - Transient) Allowable:

Type V-A	50'-0"	3 stories above grade	12,000 sf per story
Actual	49'-0"	4 stories above grade	10,950 sf per story

Existing building does not meet area or height limitations per current code. 3401.4.1 notes Existing Materials already in use in a building in compliance with requirements or approvals in effect at the time of their erection or installation shall be permitted to remain in use unless determined by the building official to be unsafe per Section 116

3409.1 Historic Buildings. The provisions of this code related to the construction, repair, alteration, addition, restoration and movement of structures, and changes of occupancy shall not be mandatory for historic building where such buildings are judged by the building official to not constitute a distinct life safety hazard.

504.2 Automatic sprinkler system increase. Where a building is equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.1, the value specified in Table 503 for maximum *building height* is increased by 20 feet and the maximum number of *stories* is increased by one. These increases are permitted in addition to the *building area* increase in accordance with Sections 506.2 and 506.3.

Exception: 3. Buildings where an automatic sprinkler system is substituted for fire-resistance rated construction in accordance with Table 601, Note d.

506.1 General. The *building areas* limited by Table 503 shall be permitted to be increased due to frontage (*If*) and *automatic sprinkler system* protection (*Is*) in accordance with Equation 5-1:

506.2 Frontage increase. Every building shall adjoin or have access to a *public way* to receive a *building area* increase for frontage. Where a building has more than 25% of its perimeter on a *public way* or open

MAMMOTH HOTEL CODE SUMMARY

space having a width of not less than 20 feet, the frontage increase shall be determined in accordance with Equation 5-2:

506.3 Automatic sprinkler system increase. Where a building is equipped throughout with an *approved automatic sprinkler system* in accordance with Section 903.3.1.1, the *building area* limitation in Table 503 is permitted to be increased by an additional 200 percent ($I_s = 2$) for buildings with more than one *story above grade plane* and an additional 300 percent ($I_s = 3$) for buildings with no more than one *story above grade plane*. These increases are permitted in addition to the height and *story* increases in accordance with Section 504.2.

Exception: The use of an *automatic sprinkler system* to increase the building area limitation shall not be permitted for the following condition; 3. Buildings where an *automatic sprinkler system* is substituted for fire-resistance rated construction in accordance with Table 601, Note d.

506.4.1 Area determination. The total allowable *building area* of a single occupancy building with more than one *story above grade plane* shall be determined by multiplying the allowable *building area per story* (A_a), as determined in Section 506.1, by the number of *stories above grade plane* as listed below:

1. For buildings with two *stories above grade plane*, multiply by 2;
2. For buildings with three or more *stories above grade plane*, multiply by 3; and
3. No *story* shall exceed the allowable *building area per story* (A_a), as determined in Section 506.1, for the occupancies on that *story*.

Exceptions:

1. Unlimited area buildings in accordance with Section 507.
2. The maximum area of a building equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.2 shall be determined by multiplying the allowable area per *story* (A_a), as determined in Section 506.1, by the number of *stories above grade plane*.

Chapter 6 – Types of Construction

Table 601 Fire Resistance Rating Requirements for Building Elements (Hours)

602.5 Type V - B. Type V construction is that type of construction in which the structural elements, *exterior walls* and interior walls are of any materials permitted by this code.

Table 602 Fire-Resistive Rating Equipments for Exterior Walls Based on Fire Separation Distance.

All Occupancies

Exterior separation distance $\geq 30'-0"$ for all construction types shall not require fire rated construction

Chapter 7 – Fire Protection

703.2 Fire-Resistance Ratings. The fire-resistance rating of building elements, components or assemblies shall be determined in accordance with the test procedures set forth in ASTM E 119 or UL 263 or in accordance with Section 703.3. Where materials, systems or devices that have not been tested as part of a fire-resistance-rated assembly are incorporated into the building element, component or assembly, sufficient data shall be made available to the building official to show that the required fire-resistance rating is not reduced. Materials and methods of construction used to protect joints and penetrations in fire-resistance-rated building elements, components or assemblies shall not reduce the required fire-resistance rating.

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Chapter 9 - Fire Protection Systems

901.2 Fire Protection Systems. Fire protection systems shall be installed, repaired, operated and maintained in accordance with this code and the International Fire Code. Any fire protection system for which an exception or reduction to the provisions of this code has been granted shall be considered to be a required system

901.6 Supervisory Service. Where required, fire protection systems shall be monitored by an approved supervising station in accordance with NFPA 72.

903.2.1.3 Group A-3. An automatic sprinkler system shall be provided for Group A-3 occupancies where one of the following conditions exist:

1. The fire area exceeds 12,000 square feet;
2. The fire area has an occupant load of 300 or more; or
3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.

903.2.8 Group R. An automatic sprinkler system installed in accordance with Section 903.3 shall be provided throughout all buildings with a Group R fire area.

Chapter 10 – Means of Egress

1003.2 Ceiling height. The *means of egress* shall have a ceiling height of not less than 7 feet 6 inches.

1003.6 Means of egress continuity. The path of egress travel along a *means of egress* shall not be interrupted by any building element other than a *means of egress* component as specified in this chapter. Obstructions shall not be placed in the required width of a *means of egress* except projections permitted by this chapter. The required capacity of a *means of egress* system shall not be diminished along the path of egress travel.

1004.1 Design occupant load. In determining the means of egress requirement, the number of occupants for whom means of egress facilities shall be provided shall be determined in accordance with the section.

1004.1.1 Cumulative occupant loads. Where the path of egress travel includes intervening rooms, areas or spaces, cumulative occupant loads shall be determined in accordance with the section.

Table 1004.1.2 Maximum Floor Area Allowance per Occupant

Function of Space	Occupant Load Factor (floor area in sf per occupant)
Accessory storage areas, mechanical equipment room:	300 gross
Assembly w/out fixed seats (un-concentrated, tables & chairs):	15 net
Business areas:	100 gross
Residential areas:	200 gross

Current Occupant Load

First Floor:	A-3 (15 net) $8210/15=$	548
	R-1 (200 gross) $10950/200 =$	55
Second Floor:	A-3 (100 gross) $=$	53
	R-1 (200 gross) $10950/200 =$	55
Third Floor:	R-1 (200 gross) $10950/200 =$	55
Fourth Floor:	R-1 (200 gross) $10950/200 =$	55

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Total

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1005.3 Required capacity based on occupant load. The required capacity, in inches, of the *means of egress* for any room, area, space or story shall not be less than that determined in accordance with Sections 1005.3.1 and 1005.3.2:

1005.3.1 Stairways. The capacity, in inches, of *means of egress stairways* shall be calculated by multiplying the *occupant load* served by such *stairway* by a *means of egress* capacity factor of 0.3 inch per occupant. Where *stairways* serve more than one story, only the *occupant load* of each story considered individually shall be used in calculating the required capacity of the *stairways* serving that story.

1005.3.2 Other egress components. The capacity, in inches, of *means of egress* components other than *stairways* shall be calculated by multiplying the *occupant load* served by such component by a *means of egress* capacity factor of 0.2 inch per occupant.

1005.4 Continuity. The capacity of the *means of egress* required from any story of a building shall not be reduced along the path of egress travel until arrival at the *public way*.

1005.5. Distribution of egress capacity. Where more than one *exit*, or access to more than one *exit*, is required, the *means of egress* shall be configured such that the loss of any one *exit*, or access to one *exit*, shall not reduce the available capacity to less than 50 percent of the required capacity.

1005.6 Egress convergence. Where the *means of egress* from stories above and below converge at an intermediate level, the capacity of the *means of egress* from the point of convergence shall not be less than the sum of the required capacities for the two adjacent stories.

1005.7 Encroachment. Encroachments into the required *means of egress* width shall be in accordance with the provisions of this section.

1005.7.1 Doors. Doors, when fully opened, shall not reduce the required width by more than 7 inches. Doors in any position shall not reduce the required width by more than one-half.

Exceptions:

1. Surface-mounted latch release hardware shall be exempt from inclusion in the 7-inch maximum encroachment where:
 - 1.1. The hardware is mounted to the side of the door facing away from the adjacent wall where the door is in the open position; and
 - 1.2. The hardware is mounted not less than 34 inches nor more than 48 inches above the finished floor.

1005.7.2 Other projections. *Handrail* projections shall be in accordance with the provisions of Section 1012.8. Other nonstructural projections such as trim and similar decorative features shall be permitted to project into the required width a maximum of 1½ inches on each side.

1005.7.3 Protruding objects. Protruding objects shall comply with the applicable requirements of Section 1003.3.

1006.1 Illumination required. The *means of egress*, including the *exit discharge*, shall be illuminated at all times the building space served by the *means of egress* is occupied.

1006.2 Illumination level. The *means of egress* illumination level shall not be less than 1 footcandle (11 lux) at the walking surface.

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1006.3 Emergency power for illumination. The power supply for *means of egress* illumination shall normally be provided by the premises' electrical supply. In the event of power supply failure, an emergency electrical system shall automatically illuminate all of the following areas:

1. *Aisles* and unenclosed egress stairways in rooms and spaces that require two or more *means of egress*.
2. *Corridors, interior exit stairways and ramps and exit passageways* in buildings required to have two or more *exits*.
3. Exterior egress components at other than their levels of *exit discharge* until *exit discharge* is accomplished for buildings required to have two or more *exits*.
4. Interior *exit discharge* elements, as permitted in Section 1027.1, in buildings required to have two or more *exits*.
5. Exterior landings as required by Section 1008.1.6 for *exit discharge* doorways in buildings required to have two or more *exits*. The emergency power system shall provide power for a duration of not less than 90 minutes and shall consist of storage batteries, unit equipment or an on-site generator. The installation of the emergency power system shall be in accordance with Section 2702.

1006.3.1 Illumination level under emergency power. Emergency lighting facilities shall be arranged to provide initial illumination that is at least an average of 1 footcandle (11 lux) and a minimum at any point of 0.1 footcandle (1 lux) measured along the path of egress at floor level. Illumination levels shall be permitted to decline to 0.6 footcandle (6 lux) average and a minimum at any point of 0.06 footcandle (0.6 lux) at the end of the emergency lighting time duration. A maximum-to-minimum illumination uniformity ratio of 40 to 1 shall not be exceeded.

1007.1 Accessible means of egress required. *Accessible means of egress* shall comply with this section. *Accessible* spaces shall be provided with not less than one *accessible means of egress*. Where more than one *means of egress* are required by Section 1015.1 or 1021.1 from any *accessible* space, each *accessible* portion of the space shall be served by not less than two *accessible means of egress*.

Exceptions:

1. *Accessible means of egress* are not required in alterations to existing buildings.
2. One *accessible means of egress* is required from an *accessible mezzanine* level in accordance with Section 1007.3, 1007.4 or 1007.5.

1007.2 Continuity and components. Each required *accessible means of egress* shall be continuous to a *public way* and shall consist of one or more of the following components:

1. *Accessible* routes complying with Section 1104.
2. *Interior exit stairways* complying with Sections 1007.3 and 1022.
3. *Interior exit access stairways* complying with Sections 1007.3 and 1009.3.
4. *Exterior exit stairways* complying with Sections 1007.3 and 1026 and serving levels other than the *level of exit discharge*.
5. Elevators complying with Section 1007.4.
6. Platform lifts complying with Section 1007.5.
7. *Horizontal exits* complying with Section 1025.
8. *Ramps* complying with Section 1010.
9. *Areas of refuge* complying with Section 1007.6.
10. Exterior area for assisted rescue complying with Section 1007.7.

1007.3 Stairways. In order to be considered part of an *accessible means of egress*, a *stairway* between stories shall have a clear width of 48 inches minimum between *handrails* and shall either incorporate an *area of refuge* within an enlarged floor-level landing or shall be accessed from either an *area of refuge* complying with Section 1007.6 or a *horizontal exit*. *Exit access stairways* that connect levels in the same story are not permitted as part an *accessible means of egress*.

Exceptions:

1. The clear width of 48 inches between *handrails* is not required in buildings equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2.

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2. *Areas of refuge* are not required at *stairways* in buildings equipped throughout by an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2.
3. The clear width of 48 inches between *handrails* is not required for *stairways* accessed from a *horizontal exit*.

1007.7 Exterior area for assisted rescue. Exterior areas for assisted rescue shall be accessed by an accessible route from the area served. Exterior areas for assisted rescue shall be permitted in accordance with Section 1007.7.1 or 1007.7.2

1008.1 Doors. *Means of egress* doors shall meet the requirements of this section. Doors serving a *means of egress* system shall meet the requirements of this section and Section 1020.2. Doors provided for egress purposes in numbers greater than required by this code shall meet the requirements of this section. *Means of egress* doors shall be readily distinguishable from the adjacent construction and finishes such that the doors are easily recognizable as doors. Mirrors or similar reflecting materials shall not be used on *means of egress* doors. *Means of egress* doors shall not be concealed by curtains, drapes, decorations or similar materials.

1008.1.1 Size of doors. The minimum width of each door opening shall be sufficient for the *occupant load* thereof and shall provide a clear width of 32 inches. Clear openings of doorways with swinging doors shall be measured between the face of the door and the stop, with the door open 90 degrees (1.57 rad). Where this section requires a minimum clear width of 32 inches and a door opening includes two door leaves without a mullion, one leaf shall provide a clear opening width of 32 inches. The maximum width of a swinging door leaf shall be 48 inches nominal.

1008.1.1.1 Projections into clear width. There shall not be projections into the required clear width lower than 34 inches above the floor or ground. Projections into the clear opening width between 34 inches and 80 inches above the floor or ground shall not exceed 4 inches.

1008.1.2 Door swing. Egress doors shall be of the pivoted or side-hinged swinging type.

Exceptions:

6. In other than Group H occupancies, horizontal sliding doors complying with Section 1008.1.4.3 are permitted in a *means of egress*.
7. Power-operated doors in accordance with Section 1008.1.4.2.
9. In other than Group H occupancies, manually operated horizontal sliding doors are permitted in a *means of egress* from spaces with an *occupant load* of 10 or less.

Doors shall swing in the direction of egress travel where serving a room or area containing an *occupant load* of 50 or more persons or a Group H occupancy.

1008.1.3 Door opening force. The force for pushing or pulling open interior swinging egress doors, other than *fire doors*, shall not exceed 5 pounds (22 N). For other swinging doors, as well as sliding and folding doors, the door latch shall release when subjected to a 15-pound (67 N) force. The door shall be set in motion when subjected to a 30-pound (133 N) force. The door shall swing to a full-open position when subjected to a 15-pound (67 N) force.

1008.1.3.1 Location of applied forces. Forces shall be applied to the latch side of the door.

1008.1.5 Floor elevation. There shall be a floor or landing on each side of a door. Such floor or landing shall be at the same elevation on each side of the door. Landings shall be level except for exterior landings, which are permitted to have a slope not to exceed 0.25 unit vertical in 12 units horizontal (2-percent slope).

Exceptions:

2. Exterior doors as provided for in Section 1003.5, Exception 1 (n/a), and Section 1020.2, which are not on an *accessible route*.
4. Variations in elevation due to differences in finish materials, but not more than 1/2 inch.

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1008.1.6 Landings at doors. Landings shall have a width not less than the width of the *stairway* or the door, whichever is greater. Doors in the fully open position shall not reduce a required dimension by more than 7 inches. When a landing serves an *occupant load* of 50 or more, doors in any position shall not reduce the landing to less than one-half its required width. Landings shall have a length measured in the direction of travel of not less than 44 inches.

1008.1.7 Thresholds. Thresholds at doorways shall not exceed 3/4 inch in height above the finished floor or landing for sliding doors serving *dwelling units* or 1/2 inch above the finished floor or landing for other doors. Raised thresholds and floor level changes greater than 1/4 inch at doorways shall be beveled with a slope not greater than one unit vertical in two units horizontal (50-percent slope).

1008.1.8 Door arrangement. Space between two doors in a series shall be 48 inches minimum plus the width of a door swinging into the space. Doors in a series shall swing either in the same direction or away from the space between the doors.

1008.1.9 Door operations. Except as specifically permitted by this section egress doors shall be readily openable from the egress side without the use of a key or special knowledge or effort.

1008.1.9.1 Hardware. Door handles, pulls, latches, locks and other operating devices on doors required to be *accessible* by Chapter 11 shall not require tight grasping, tight pinching or twisting of the wrist to operate.

1008.1.9.2 Hardware height. Door handles, pulls, latches, locks and other operating devices shall be installed 34 inches (864 mm) minimum and 48 inches maximum above the finished floor. Locks used only for security purposes and not used for normal operation are permitted at any height.

1008.1.9.3 Locks and latches. Locks and latches shall be permitted to prevent operation of doors where any of the following exists:

2. In buildings in occupancy Groups B, F, M and S, the main exterior door or doors are permitted to be equipped with key-operated locking devices from the egress side provided:
 - 2.1. The locking device is readily distinguishable as locked;
 - 2.2. A readily visible durable sign is posted on the egress side on or adjacent to the door stating: THIS DOOR TO REMAIN UNLOCKED WHEN BUILDING IS OCCUPIED. The sign shall be in letters 1 inch high on a contrasting background; and
 - 2.3. The use of the key-operated locking device is revocable by the *building official* for due cause.
3. Where egress doors are used in pairs, *approved* automatic flush bolts shall be permitted to be used, provided that the door leaf having the automatic flush bolts has no doorknob or surface-mounted hardware.
5. *Fire doors* after the minimum elevated temperature has disabled the unlatching mechanism in accordance with listed fire door test procedures.

1008.1.9.4 Bolt locks. Manually operated flush bolts or surface bolts are not permitted.

Exceptions:

2. Where a pair of doors serves a storage or equipment room, manually operated edge- or surface-mounted bolts are permitted on the inactive leaf.
3. Where a pair of doors serves an *occupant load* of less than 50 persons in a Group B, F or S occupancy, manually operated edge- or surface-mounted bolts are permitted on the inactive leaf. The inactive leaf shall contain no doorknobs, panic bars or similar operating hardware.
4. Where a pair of doors serves a Group B, F or S occupancy, manually operated edge- or surface-mounted bolts are permitted on the inactive leaf provided such inactive leaf is not needed to meet egress width requirements and the building is equipped throughout with an *automatic sprinkler system* in accordance with Section 903.3.1.1. The inactive leaf shall contain no doorknobs, panic bars or similar operating hardware.

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1008.1.9.5 Unlatching. The unlatching of any door or leaf shall not require more than one operation.

Exceptions:

2. Where manually operated bolt locks are permitted by Section 1008.1.9.4.
3. Doors with automatic flush bolts as permitted by Section 1008.1.9.3, Exception 3.

1008.1.9.8 Access-controlled egress doors. The entrance doors in a *means of egress* in buildings with an occupancy in Groups A, B, E, I-2, M, R-1 or R-2, and entrance doors to tenant spaces in occupancies in Groups A, B, E, I-2, M, R-1 or R-2, are permitted to be equipped with an *approved* entrance and egress access control system, listed in accordance with UL 294, which shall be installed in accordance with all of the following criteria:

1. A sensor shall be provided on the egress side arranged to detect an occupant approaching the doors. The doors shall be arranged to unlock by a signal from or loss of power to the sensor.
2. Loss of power to that part of the access control system which locks the doors shall automatically unlock the doors.
3. The doors shall be arranged to unlock from a manual unlocking device located 40 inches to 48 inches vertically above the floor and within 5 feet of the secured doors. Ready access shall be provided to the manual unlocking device and the device shall be clearly identified by a sign that reads "PUSH TO EXIT." When operated, the manual unlocking device shall result in direct interruption of power to the lock—*independent of the access control system electronics*—and the doors shall remain unlocked for a minimum of 30 seconds.
4. Activation of the building fire alarm system, if provided, shall automatically unlock the doors, and the doors shall remain unlocked until the fire alarm system has been reset.
5. Activation of the building automatic sprinkler or fire detection system, if provided, shall automatically unlock the doors. The doors shall remain unlocked until the fire alarm system has been reset.
6. Entrance doors in buildings with an occupancy in Group A, B, E or M shall not be secured from the egress side during periods that the building is open to the general public.

1008.1.10 Panic and fire exit hardware. Doors serving rooms or spaces with an *occupant load* of 50 or more in a Group A or E occupancy shall not be provided with a latch or lock unless it is *panic hardware* or *fire exit hardware*. Electrical rooms with equipment rated 1,200 amperes or more and over 6 feet wide that contain overcurrent devices, switching devices or control devices with *exit* or *exit access* doors shall be equipped with *panic hardware* or *fire exit hardware*. The doors shall swing in the direction of egress travel.

1009.1 Stairs, General. *Stairways* serving occupied portions of a building shall comply with the requirements of this section.

1009.2 Interior exit stairways. *Interior exit stairways* shall lead directly to the exterior of the building or shall be extended to the exterior of the building with an *exit passageway* conforming to the requirements of Section 1023, except as permitted in Section 1027.1.

1009.2.1 Where required. *Interior exit stairways* shall be included, as necessary, to meet one or more *means of egress* design requirements, such as required number of *exits* or *exit access* travel distance.

1009.2.2 Enclosure. All *interior exit stairways* shall be enclosed in accordance with the provisions of Section 1022.

1009.3 Exit access stairways. Floor openings between stories created by *exit access stairways* shall be enclosed.

Exceptions:

1. In other than Group I-2 and I-3 occupancies, *exit access stairways* that serve, or atmospherically communicate between, only two stories are not required to be enclosed.
3. In buildings with only Group B or M occupancies, *exit access stairway* openings are not required to be enclosed provided that the building is equipped throughout with an *automatic*

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sprinkler system in accordance with Section 903.3.1.1, the area of the floor opening between stories does not exceed twice the horizontal projected area of the *exit access stairway*, and the opening is protected by a draft curtain and closely spaced sprinklers in accordance with NFPA 13.

5. *Exit access stairways* within an *atrium* complying with the provisions of Section 404 are not required to be enclosed.

7. *Stairways* serving outdoor facilities where all portions of the *means of egress* are essentially open to the outside are not required to be enclosed.

1009.3.1 Construction. Where required, enclosures for *exit access stairways* shall be constructed in accordance with this section. *Exit access stairway* enclosures shall be constructed as *fire barriers* in accordance with Section 707 or *horizontal assemblies* in accordance with Section 711, or both.

1009.3.1.2 Fire-resistance rating. *Exit access stairway* enclosures shall have a *fire-resistance rating* of not less than 2 hours where connecting four stories or more, and not less than 1 hour where connecting less than four stories. The number of stories connected by the *exit access stairway* enclosures shall include any basements, but not any mezzanines. *Exit access stairway* enclosures shall have a *fire-resistance rating* not less than the floor assembly penetrated, but need not exceed 2 hours.

1009.3.1.3 Continuity. *Exit access stairway* enclosures shall have continuity in accordance with Section 707.5 for *fire barriers* or Section 711.4 for *horizontal assemblies* as applicable.

1009.3.1.4 Openings. Openings in an *exit access stairway* enclosure shall be protected in accordance with Section 716 as required for *fire barriers*. Doors shall be self- or automatic-closing by smoke detection in accordance with Section 716.5.9.3.

1009.3.1.4.1 Prohibited openings. Openings other than those necessary for the purpose of the *exit access stairway* enclosure shall not be permitted in *exit access stairway* enclosures.

1009.3.1.5 Penetrations. Penetrations in an *exit access stairway* enclosure shall be protected in accordance with Section 714 as required for *fire barriers*.

1009.3.1.5.1 Prohibited penetrations. Penetrations other than those necessary for the purpose of the *exit access stairway* enclosure shall not be permitted in *exit access stairway* enclosures.

1009.3.1.6 Joints. Joints in an *exit access stairway* enclosure shall comply with Section 715.

1009.3.1.7 Ducts and air transfer openings. Penetrations of an *exit access stairway* enclosure by ducts and air transfer openings shall comply with Section 717.

1009.3.1.8 Exterior walls. Where *exterior walls* serve as a part of an *exit access stairway* enclosure, such walls shall comply with the requirements of Section 705 for *exterior walls* and the fire-resistance-rated enclosure requirements shall not apply.

1009.4 Width. The width of *stairways* shall be determined as specified in Section 1005.1, but such width shall not be less than 44 inches (1118 mm). See Section 1007.3 for *accessible means of egress stairways*.

Exceptions:

1. *Stairways* serving an *occupant load* of less than 50 shall have a width of not less than 36 inches.
2. *Spiral stairways* as provided for in Section 1009.12.
3. *Aisle stairs* complying with Section 1028.

1009.5 Headroom. *Stairways* shall have a minimum headroom clearance of 80 inches measured vertically from a line connecting the edge of the *nosings*. Such headroom shall be continuous above the

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stairway to the point where the line intersects the landing below, one tread depth beyond the bottom riser. The minimum clearance shall be maintained the full width of the *stairway* and landing.

1009.7 Stair treads and risers. Stair treads and risers shall comply with Sections 1009.7.1 through 1009.7.5.3.

1009.7.1 Dimension reference surfaces. For the purpose of this section, all dimensions are exclusive of carpets, rugs or runners.

1009.7.2 Riser height and tread depth. Stair riser heights shall be 7 inches maximum and 4 inches minimum. The riser height shall be measured vertically between the *nosings* of adjacent treads. Rectangular tread depths shall be 11 inches minimum measured horizontally between the vertical planes of the foremost projection of adjacent treads and at a right angle to the tread's *nosing*.

Exceptions:

6. See Section 3404.1 for the replacement of existing *stairways*.

1009.7.4 Dimensional uniformity. *Stair* treads and risers shall be of uniform size and shape. The tolerance between the largest and smallest riser height or between the largest and smallest tread depth shall not exceed 3/8 inch in any *flight of stairs*. The greatest *winder* tread depth at the walkline within any *flight of stairs* shall not exceed the smallest by more than 3/8 inch.

Exceptions:

Where the bottom or top riser adjoins a sloping *public way*, walkway or driveway having an established grade and serving as a landing, the bottom or top riser is permitted to be reduced along the slope to less than 4 inches in height, with the variation in height of the bottom or top riser not to exceed one unit vertical in 12 units horizontal (8-percent slope) of *stairway* width. The *nosings* or leading edges of treads at such non-uniform height risers shall have a distinctive marking stripe, different from any other *nosing* marking provided on the *stair flight*. The distinctive marking stripe shall be visible in descent of the *stair* and shall have a slip-resistant surface. Marking stripes shall have a width of at least 1 inch but not more than 2 inches.

1009.7.5 Nosing and riser profile. The radius of curvature at the leading edge of the tread shall be not greater than 9/16 inch (14.3 mm). Beveling of *nosings* shall not exceed 9/16 inch (14.3 mm). Risers shall be solid and vertical or sloped under the tread above from the underside of the *nosing* above at an angle not more than 30 degrees (0.52 rad) from the vertical.

1009.7.5.1 Nosing projection size. The leading edge (*nosings*) of treads shall project not more than 1/4 inches (32 mm) beyond the tread below.

1009.7.5.2 Nosing projection uniformity. All *nosing* projections of the leading edges shall be of uniform size, including the projections of the *nosings* leading edge of the floor at the top of a *flight*.

1009.7.5.3 Solid risers. Risers shall be solid.

Exceptions:

1. Solid risers are not required for *stairways* that are not required to comply with Section 1007.3, provided that the opening between treads does not permit the passage of a 4" diameter sphere.
2. Solid risers are not required for occupancies in Group I-3 or in Group F, H and S occupancies other than areas accessible to the public. There are no restrictions on the size of the opening in the riser.
3. Solid risers are not required for *spiral stairways* constructed in accordance with Section 1009.12.
4. Solid risers are not required for *alternating tread devices* constructed in accordance with Section 1009.13.

1009.8 Stairway landings. There shall be a floor or landing at the top and bottom of each *stairway*. The width of landings shall not be less than the width of *stairways* they serve. Every landing shall have a minimum width measured perpendicular to the direction of travel equal to the width of the *stairway*.

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Where the *stairway* has a straight run the depth need not exceed 48 inches. Doors opening onto a landing shall not reduce the landing to less than one-half the required width. When fully open, the door shall not project more than 7 inches into a landing. When *wheelchair spaces* are required on the *stairway* landing in accordance with Section 1007.6.1, the *wheelchair space* shall not be located in the required width of the landing and doors shall not swing over the *wheelchair spaces*.

1009.9 Stairway construction. All *stairways* shall be built of materials consistent with the types permitted for the type of construction of the building, except that wood *handrails* shall be permitted for all types of construction.

1009.9.1 Stairway walking surface. The walking surface of treads and landings of a *stairway* shall not be sloped steeper than one unit vertical in 48 units horizontal (2-percent slope) in any direction. *Stairway* treads and landings shall have a solid surface. Finish floor surfaces shall be securely attached.

Exceptions:

1. Openings in stair walking surfaces shall be a size that does not permit the passage of 1/2-inch-diameter (12.7 mm) sphere. Elongated openings shall be placed so that the long dimension is perpendicular to the direction of travel.

1009.9.2 Outdoor conditions. Outdoor *stairways* and outdoor approaches to *stairways* shall be designed so that water will not accumulate on walking surfaces.

1009.9.3 Enclosures under interior stairways. The walls and soffits within enclosed usable spaces under enclosed and unenclosed *stairways* shall be protected by 1-hour fire-resistance-rated construction or the *fire-resistance rating* of the *stairway* enclosure, whichever is greater. Access to the enclosed space shall not be directly from within the *stair* enclosure.

1009.9.4 Enclosures under exterior stairways. There shall be no enclosed usable space under *exterior exit stairways* unless the space is completely enclosed in 1-hour fire-resistance-rated construction. The open space under *exterior stairways* shall not be used for any purpose.

1009.10 Vertical rise. A *flight of stairs* shall not have a vertical rise greater than 12 feet (3658 mm) between floor levels or landings.

1020.2 Exterior exit doors. Buildings or structures used for human occupancy shall have at least on exterior door that meets the requirements of Section 1008.1.1

1021.1 General. Each story and occupied roof shall have the minimum number of *exits*, or access to exits, as specified in this section. The required number of *exits*, or *exit access stairways* or *ramps* providing access to exits, from any story shall be maintained until arrival at grade or a *public way*. *Exits* or access to exits from any story shall be configured in accordance with this section. Each story above the second story of a building shall have a minimum of one interior or exterior *exit stairway*, or interior or exterior *exit ramp*. At each story above the second story that requires a minimum of three or more *exits*, or access to *exits*, a minimum of 50 percent of the required *exits* shall be interior or

1021.2.2 Basements. A basement provided with one exit shall not be located more than one story below grade plane.

1021.3 Exit configuration. Exits, or exit access stairways or ramps providing access to exits at other stories, shall be arranged in accordance with the provisions of Sections 1015.2 through 1015.2.2. Exits shall be continuous from the point of entry into the exit to the exit discharge.

1022.1 General. Interior exit stairways and interior exit ramps serving as an exit component in a means of egress system shall comply with the requirements of this section. Interior exit stairways and ramps shall lead directly to the exterior of the building or shall be extended to the exterior of the building with an exit passageway conforming to the requirements of Section 1023, except as permitted in Section 1027.1. An interior exit stairway or ramp shall not be used for any purpose other than as a means of egress.

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1022.2 Construction. Enclosures for *interior exit stairways* and ramps shall be constructed as *fire barriers* in accordance with Section 707 or *horizontal assemblies* constructed in accordance with Section 711, or both. *Interior exit stairway* and *ramp* enclosures shall have a *fire-resistance rating* of not less than 2 hours where connecting four stories or more and not less than 1 hour where connecting less than four stories. The number of stories connected by the *interior exit stairways* or *ramps* shall include any basements, but not any *mezzanines*. *Interior exit stairways* and *ramps* shall have a *fire resistance rating* not less than the floor assembly penetrated, but need not exceed 2 hours.

1022.9.1 Signage requirements. Stairway identification signs shall comply with all of the following requirements:

1. The signs shall be a minimum size of 18 inches by 12 inches.
2. The letters designating the identification of the *interior exit stairway* and *ramp* shall be a minimum of 1 1/2 inches in height.
3. The number designating the floor level shall be a minimum of 5 inches in height and located in the center of the sign.
4. All other lettering and numbers shall be a minimum of 1 inch in height.
5. Characters and their background shall have a nonglare finish. Characters shall contrast with their background, with either light characters on a dark background or dark characters on a light background.
6. When signs required by Section 1022.9 are installed in the *interior exit stairways* and *ramps* of buildings subject to Section 1024, the signs shall be made of the same materials as required by Section 1024.4.

1023.1 Exit passageway. Exit passageways serving as an exit component in a means of egress system shall comply with the requirements of this section. An exit passageway shall not be used for any purpose other than as a means of egress.

1025.1 Horizontal exits. Horizontal exits serving as an exit in a means of egress system shall comply with the requirements of this section. A horizontal exit shall not serve as the only exit from a portion of a building, and where two or more exits are required, not more than one-half of the total number of exits or total exit width shall be horizontal exits.

1027.1 General. Exits shall discharge directly to the exterior of the building. The exit discharge shall be at grade or shall provide direct access to grade. The exit discharge shall not reenter a building. The combined use of Exceptions 1 and 2 shall not exceed 50 percent of the number and capacity of the required exits.

Exceptions:

1. A maximum of 50 percent of the number and capacity of *interior exit stairways* and *ramps* is permitted to egress through areas on the *level of exit discharge* provided all of the following are met:
 - 1.1. Such enclosures egress to a free and unobstructed path of travel to an exterior *exit* door and such *exit* is readily visible and identifiable from the point of termination of the enclosure.
 - 1.2. The entire area of the *level of exit discharge* is separated from areas below by construction conforming to the *fire-resistance rating* for the enclosure.
 - 1.3. The egress path from the *interior exit stairway* and *ramp* on the *level of exit discharge* is protected throughout by an *approved automatic sprinkler system*. All portions of the *level of exit discharge* with access to the egress path shall either be protected throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2, or separated from the egress path in accordance with the requirements for the enclosure of *interior exit stairways* or *ramps*.
2. A maximum of 50 percent of the number and capacity of the *interior exit stairways* and *ramps* is permitted to egress through a vestibule provided all of the following are met:

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- 2.1. The entire area of the vestibule is separated from areas below by construction conforming to the *fire-resistance rating* for the enclosure.
- 2.2. The depth from the exterior of the building is not greater than 10 feet and the length is not greater than 30 feet.
- 2.3. The area is separated from the remainder of the *level of exit discharge* by construction providing protection at least the equivalent of *approved* wired glass in steel frames.
- 2.4. The area is used only for *means of egress* and *exits* directly to the outside.
- 3. *Horizontal exits* complying with Section 1025 shall not be required to discharge directly to the exterior of the building.

1027.5 Access to a public way. The exit discharge shall provide a direct and unobstructed access to a public way.

1028.1 General. A room or space used for assembly purposes which contains seats, tables, displays, equipment or other material shall comply with this section.

1028.2 Assembly main exit. In a building, room or space used for assembly purposes that has an occupant load of greater than 300 and is provided with a main exit, the main exit shall be of sufficient width to accommodate not less than one-half of the occupant load, but such width shall not be less than the total required width of all means of egress leading to the exit. Where the building is classified as a Group A occupancy the main exit shall front on at least one street or an unoccupied space of not less than 10 feet in width that adjoins a street or public way. In a building, room or space used for assembly purposes where there is no well defined main exit or where multiple main exits are provided, exits shall be permitted to be distributed around the perimeter of the building provided that the total width of egress is not less than 100 percent of the required width.

1028.3 Assembly other exits. In addition to having access to a main *exit*, each level in a building used for assembly purposes having an *occupant load* greater than 300 and provided with a main *exit*, shall be provided with additional *means of egress* that shall provide an egress capacity for at least one half of the total *occupant load* served by that level and shall comply with Section 1015.2. In a building used for assembly purposes where there is no well-defined main *exit* or where multiple main *exits* are provided, *exits* for each level shall be permitted to be distributed around the perimeter of the building, provided that the total width of egress is not less than 100 percent of the required width.

Chapter 11 – Accessibility

1103.2 General exceptions (accessibility): Sites, buildings, structures, facilities, elements and spaces shall be exempt from this chapter to the extent specified in this section.

1103.2.2 Existing buildings. Existing building shall comply with Section 3411.

Chapter 12 – Interior Environment

1203.1 General. Building shall be provided with natural ventilation in accordance with Section 1203.4, or mechanical ventilation in accordance with the International Mechanical Code.

1204.1 Equipment and systems: Interior spaces intended for human occupancy shall be provided with active or passive space-heating systems capable of maintaining an indoor temperature of not less than 68 degrees F at a point 3 feet above the floor on the design heating day.

1205.1 General. Every space intended for human occupancy shall be provided with natural light by means of exterior glazed openings in accordance with Section 1205.2 or shall be provided with artificial light in accordance with section 1205.3 Exterior glazed openings shall open directly onto a public way or onto a yard or court in accordance with Section 1206.

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1210.1 Required fixtures. The number and type of plumbing fixtures provided in any occupancy shall comply with Chapter 29.

Chapter 13 – Energy Efficiency

1301.1.1 Criteria. Building shall be designed and constructed in accordance with the International Energy Conservation Code.

Chapter 34 – Existing Structures

3401.4.1 Existing materials. Materials already in use in a building in compliance with requirements or approvals in effect at the time of their erection or installation shall be permitted to remain in use unless determined by the building official to be unsafe per Section 116.

3401.4.2 New and replacement materials. Except as otherwise required or permitted by this code, materials permitted by the applicable code for new construction shall be used. Like materials shall be permitted for repairs and alterations, provided no hazard to life, health or property is created. Hazardous materials shall not be used where the code for new construction would not permit their use in buildings of similar occupancy, purpose and location.

3403.1 General (Additions). Additions to any building or structure shall comply with the requirements of this code for new construction. Alterations to the existing building or structure together with the addition are no less conforming with the provisions of this code than the existing building or structure was prior to the addition. An existing building together with its additions shall comply with the height and area provision of Chapter 5.

3404.1 General (Alterations). Except as provided by Section 3401.4 or this section, alterations to any building or structures shall comply with the requirements of the code for new construction. Alterations shall be such that the existing building or structure is no less complying with the provisions of this code than the existing building or structure was prior to the alteration.

Exceptions:

1. An existing stairway shall not be required to comply with the requirements of Section 1009 where the existing space and construction does not allow a reduction in pitch or slope.
2. Handrails otherwise required to comply with Section 1009.15 shall not be required to comply with the requirements of Section 1012.6 regarding full extension of the handrails where such extensions would be hazardous due to plan configuration.

3405.1 General (Repairs). Building and structures, and parts thereof, shall be repaired in compliance with Section 3405 and 3401.2. Work on non-damaged components that is necessary for the required repair of damaged components shall be considered par to the repair and shall not be subject to the requirements for alterations in this chapter. Routine maintenance required by Section 3401.2, ordinary repairs exempt from permit in accordance with section 105.2, and abatement of wear due to normal service conditions shall not be subject to the requirements for repairs in this section.

3407.1 Conformance (Glass Replacement). The installation or replacement of glass shall be as required for new installations.

3408.1 Conformance (Change of Occupancy). No change shall be made in the use or occupancy of any building that would place the building in a different division of the same group of occupancies or in a different group of occupancies, unless such building is made to comply with the requirements of this code for such division or group of occupancies. Subject to the approval of the building official, the use or occupancy of existing buildings shall be permitted to be changed and the building is allowed to be occupied for purposes in other groups without conforming to all the requirements of this code for those

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groups, provided the new or proposed use is less hazardous, based on life and fire risk, than the existing use.

3409.1 Historic Buildings. The provisions of this code relating to the construction, repair, alteration, addition, restoration, and movement of structures, and change of occupancy shall not be mandatory for historic buildings where such buildings are judged by the building official to not constitute a distinct life safety hazard.

3411.1 Scope (accessibility for Existing Buildings). The provision of Section 3411.1 through 3411.9 apply to maintenance, change of occupancy, additions and alterations to existing buildings, including those identified as historic buildings.

3411.2 Maintenance of facilities. A facility that is constructed or altered to be accessible shall be maintained accessible during the occupancy.

3411.3 Extent of application. An alteration of an existing facility shall not impose a requirement for greater accessibility than that which would be required for new construction. Alterations shall not reduce or have the effect of reducing accessibility of a facility or portion of a facility.

3411.6 Alterations. A facility that is altered shall comply with the applicable provisions in Chapter 11 of this code, unless technically infeasible. Where compliance with this section is technically infeasible, the alteration shall provide access to the maximum extent technically feasible.

Exceptions:

1. The altered element or space is not required to be on an *accessible* route, unless required by Section 3411.7.
2. *Accessible means of egress* required by Chapter 10 are not required to be provided in existing facilities.

3411.7 Alterations affecting an area containing a primary function. Where an alteration affects the accessibility to, or contains an area of 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.

Exceptions:

1. The costs of providing the *accessible* route are not required to exceed 20 percent of the costs of the *alterations* affecting the area of *primary function*.
2. This provision does not apply to *alterations* limited solely to windows, hardware, operating controls, electrical outlets and signs.
3. This provision does not apply to *alterations* limited solely to mechanical systems, electrical systems, installation or alteration of fire protection systems and abatement of hazardous materials.
4. This provision does not apply to *alterations* undertaken for the primary purpose of increasing the accessibility of a *facility*.
5. This provision does not apply to altered areas limited to *Type B dwelling* and *sleeping units*.

3411.8.1 Entrances. Accessible entrances shall be provided in accordance with Section 1105 in alterations to existing buildings and facilities.

3411.8.4 Stairs and escalators in existing buildings. In alterations, change of occupancy or additions where an escalator or stair is added where none existed previously and major structural modifications are necessary for installation, an accessible route shall be provided between the levels served by the escalator or stairs in accordance with Section 1104.4 and 1104.5

MAMMOTH HOTEL CODE SUMMARY

3411.9 Historic buildings. These provisions shall apply to facilities designated as historic structures that undergo *alterations* or a change of occupancy, unless *technically infeasible*. Where compliance with the requirements for *accessible routes*, entrances or toilet rooms would threaten or destroy the historic significance of the facility, as determined by the applicable governing authority, the alternative requirements of Sections 3411.9.1 through 3411.9.4 for that element shall be permitted.

3411.9.1 Site arrival points. At least one accessible route from a site arrival point to an accessible entrance shall be provided

3411.9.3 Entrances. At least on main entrance shall be accessible.

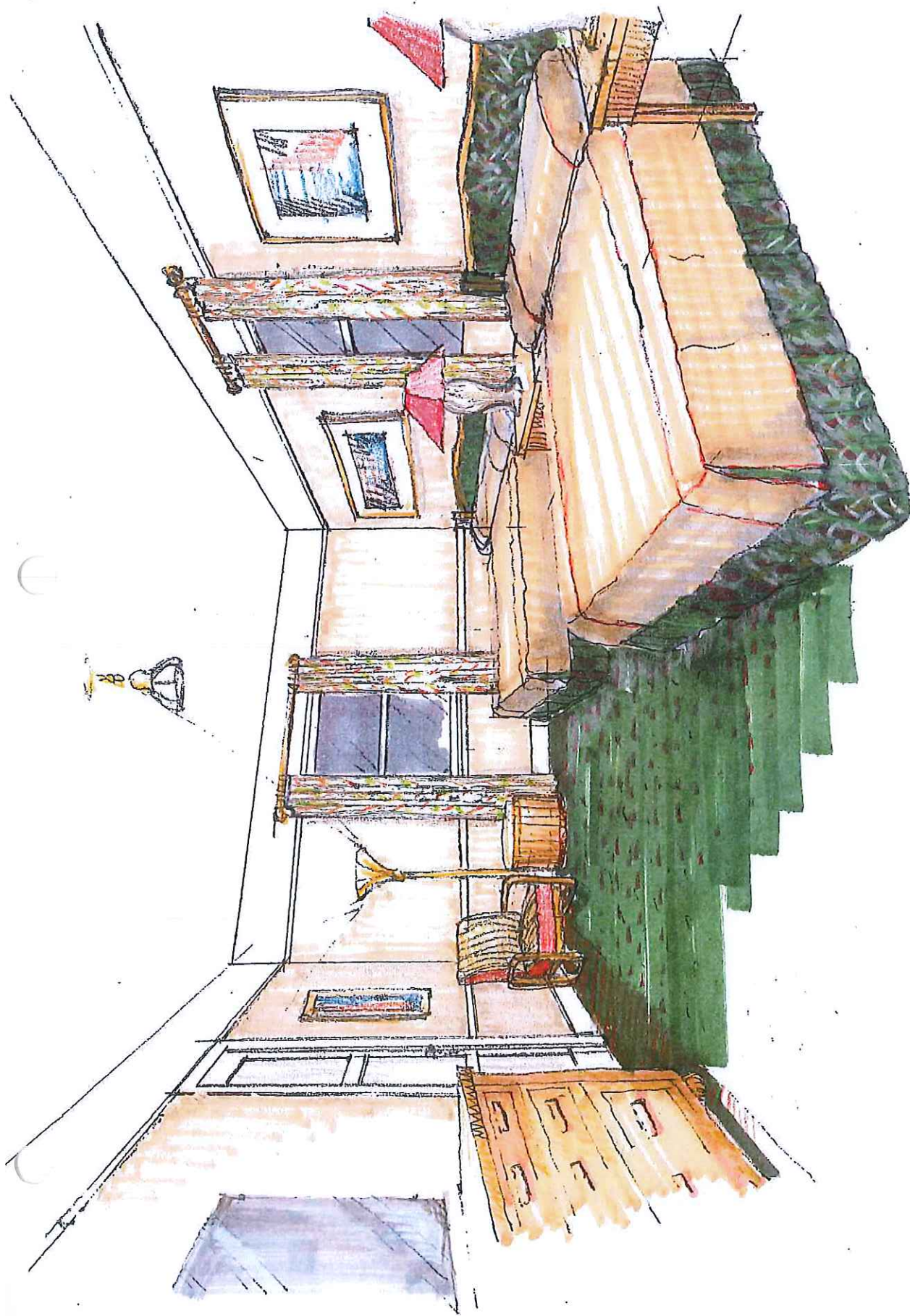
3412.1 Compliance. The provisions of this section are intended to maintain or increase the current degree of public safety, health and general welfare in existing building while permitting repair, alteration, addition and change of occupancy without requiring full compliance with Chapters 2 through 33, or Section 3401.3, and 3403 through 3409, except where compliance with other provisions of this code is specifically required in the section.

MAMMOTH HOT SPRINGS HOTEL
Historic Structures Report
Yellowstone National Park

March, 2015



APPENDICES E
Guest Room Potential Design Options

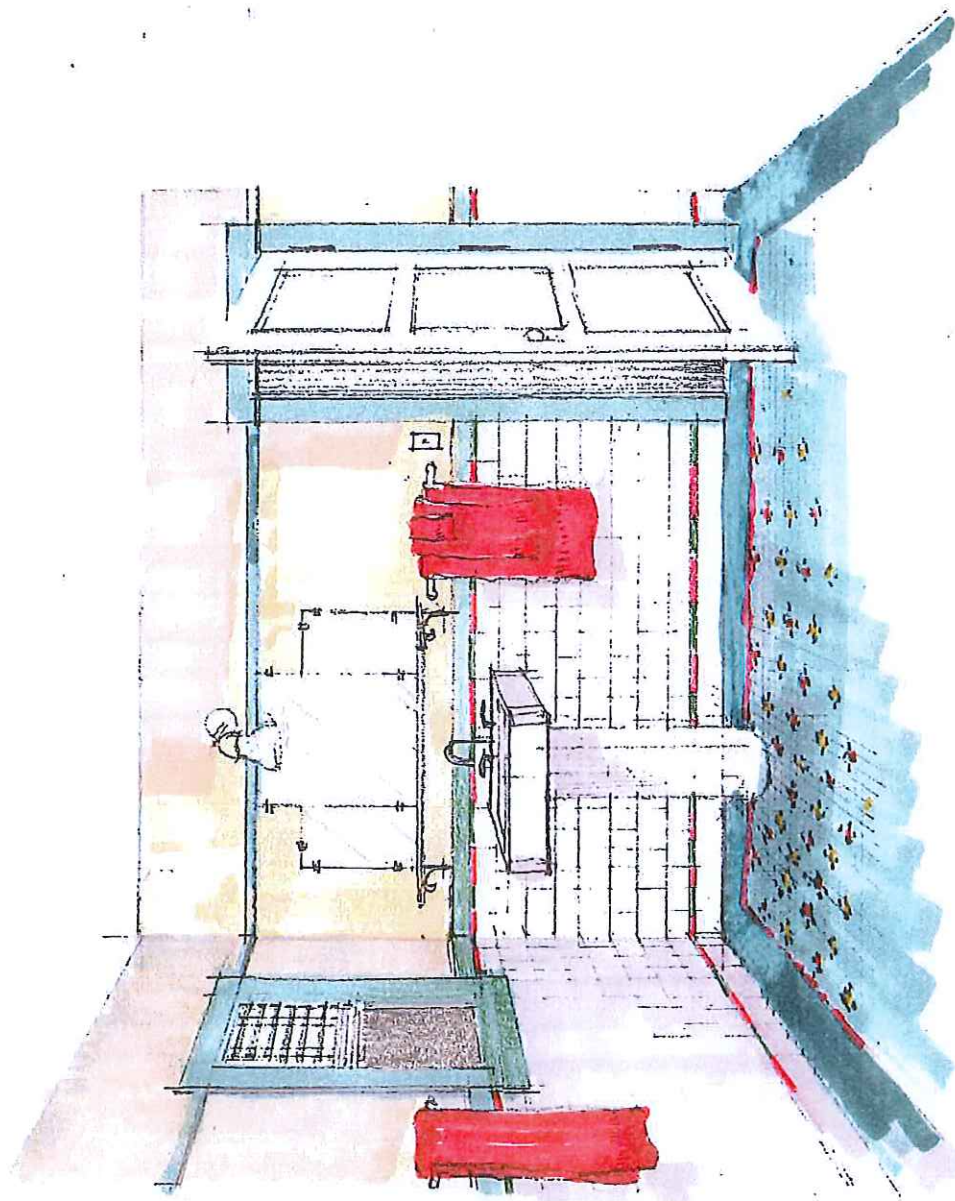


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Guest Room Finishes *Option A*



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Guest Room Finishes *Option B*



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Guest Room Finishes Bathrooms