Historic Housing Area
Historic Structures Report

HS-04 Fire Office Building

Wind Cave National Park

Volume III of VIII



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Cover Photo:
HS-04 Fire Office Building Existing Structure, View East. (SRJA 2014)

Table of Contents

List of Figures iii
Introduction 1
Significant Features 1
History and Significance 3
Chronology Drawings 6
Description of Existing Conditions
Architectural
Exterior 25
Interior 52
Structural 125
Mechanical, Electrical and Plumbing 138
Existing Condition Drawings (Fold-out Pages)
Treatment Recommendations 167
Building Code / Life Safety / Zoning / Accessibility Evaluation 169
Treatment Drawings (Fold-out Pages)
Technical Appendixes
A. Historic Drawings
B. Historic Photograph Information Pages
C. Cost Estimate

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List of Figures

Notes:
All references to the WICA Museum Collections are cited by the title WICA, followed by the Museum Collections catalog number. For example--WICA 3754 refers to record number 3754 in the Wind Cave National Park museum collection.

See Appendix B for more information about the photo files.

1. Table of Previous Titles.
2. Location Map.
3. Construction Chronology.
4. HS-04, ca.1907, looking west, with hotel and cave house in the foreground. (Hot Springs Public Library)
5. HS-04, 1911, July, looking west. (Hot Springs Public Library)
6. HS-04, ca.1920, looking west. (WICA 185)
7. HS-04, ca.1920, looking north. (WICA 1020)
8. HS-04, 1920, after addition, looking west. (WICA 1024)
9. HS-04, ca.1920, looking east. (WICA 8180)
10. HS-04, ca.1920s, looking east. (WICA 9194)
11. HS-04, ca.1924, looking south. (WICA 1032)
12. HS-04, 1926, looking west. (WICA 1034)
13. HS-04, ca.1928, looking west. (WICA 9913)
14. HS-04, ca.1929, July 6, looking southwest. (WICA 15348)
15. HS-04, ca.1930, looking west. (WICA 4151)
16. HS-04, ca.1931, looking west. (WICA 4153)
17. HS-04, 1931, Feb. 14, looking west. (WICA 4658)
18. HS-04, ca.1935, looking west. (WICA 4657)
19. HS-04, 1935, May 8, looking west. (WICA 4421)
20. HS-04, ca.1936, looking west. (WICA 4152)
21. HS-04, 1936, looking west. (WICA 4736)
22. HS-04, ca. 1937, looking west. CCC Crews planting trees. (WICA 4211)
23. HS-04, ca.1937, looking west. (WICA 4735)
24. HS-04, ca.1940s, looking west. (WICA 4277)
25. HS-04, ca.1969, looking north. (WICA 6697)
26. HS-04, ca.1969, looking west. (WICA 7946)
27. HS-04, ca.1969, looking west. (WICA 7947)

Exterior Existing Conditions

X1. Looking west from the road. (SRJA 2014)
X2. Front entry typical eave trim detail. Note the small section of missing stucco. (SRJA 2014)
X3. Stone foundation detail. (SRJA 2014)
X4. Window 104 Detail. This typical for the first floor window openings. (SRJA 2014)
X5. Window 112 in the dormitory addition. (SRJA 2015)
X6. Window 112 Detail. Note the wood deterioration and the original storm window hangers at the top. This is a typical condition for the dormitory windows. (SRJA 2015)
X7. Roof Detail. (SRJA 2014)
X8. Roof Detail. (SRJA 2014)

X9. Front steps and terrace detail. Note the brush growing too close to the foundation. (SRJA 2014)
X10. Front terrace detail. Note the drainage holes in the wall for the front porch. (SRJA 2014)
X11. Front terrace detail. (SRJA 2014)
X12. Front terrace stone wall and concrete porch detail. (SRJA 2014)
X13. Front Door 100/1 surround. (SRJA 2014)
X14. Front Door 100/1 detail. (SRJA 2014)
X15. North front Door 109/3 surround. (SRJA 2014)
X16. North front Door 109/3 detail. (SRJA 2014)
X17. North front Door 109/3 sill detail. (SRJA 2014)
X18. East gable Window 201. Note the visible white jamb liner. (SRJA 2014)
X19. Center chimney detail. Note the concrete block holding down the metal chimney cap on the north flue. Photograph taken from the west, looking east. (SRJA 2014)
X20. South Elevation. (SRJA 2014)
X21. South Elevation. (SRJA 2014)
X22. South elevation bulkhead door. (SRJA 2014)
X23. Bulkhead door stone lintel. (SRJA 2014)
X24. Bulkhead door deteriorated concrete wash and wood trim. (SRJA 2014)
X25. South elevation. Hole through wall for some type of pipe that requires removal and infill. (SRJA 2014)
X26. West side of the building with the concrete driveway and courtyard. (SRJA 2014)
X27. HS-04 West elevation, south kitchen wing. (SRJA 2014)
X28. HS-04 South kitchen entry Door 105/1. Note that the transom is blocked on the interior due to the lowered ceiling in the kitchen. (SRJA 2014)
X29. HS-04 West chimney. (SRJA 2015)
X30. HS-04 West courtyard south wall. The red arrow points to the protruding stone which is likely an old stone threshold from and earlier door this location. (SRJA 2014)
X31. HS-04 West courtyard wall. (SRJA 2014)
X32. HS-04 West courtyard Window 110. (SRJA 2014)
X33. HS-04 West courtyard north wall. (SRJA 2014)
X34. HS-04 West courtyard entry hood. (SRJA 2014)
X35. HS-04 West dormitory wall. (SRJA 2014)
X36. HS-04 West dormitory gable. (SRJA 2014)
X37. HS-04 North elevation of the dormitory addition. (SRJA 2014)
X38. HS-04 North elevation window detail. (SRJA 2014)
X39. HS-04 North elevation window detail. (SRJA 2014)
X40. HS-04 North elevation downspout discharge and overgrowth at foundation. (SRJA 2014)
X41. HS-04 North elevation downspout discharge at foundation and overgrowth. (SRJA 2014)
X42. HS-04 North elevation foundation vent detail. Note the over-spray of the paint on the concrete foundation. (SRJA 2014)
X43. HS-04 East elevation of the north dormitory addition. Note the exposed stone foundation starts here. (SRJA 2014)
X44. HS-04 North elevation of the 1918 addition. (SRJA 2014)

X45. HS-04 North elevation of the 1918 addition. (SRJA 2014)

Interior Existing Conditions

B-1. Room 001 Looking south. (SRJA 2014)
B-2. Room 001 Looking west at paint shadows of earlier winding staircase. (SRJA 2014)
B-3. Room 001 Looking west. (SRJA 2014)
B-4. Room 001 Looking west through foundation wall. (SRJA 2014)
B-5. Room 001 Looking northeast. (SRJA 2014)
B-6. Room 001 Looking East. (SRJA 2014)
B-7. Room 001 Looking East into eastern portion of basement. (SRJA 2014)
B-8. Room 001 Looking south towards door to bulkhead stair. (SRJA 2014)
B-9. Room 001 Looking south into bulkhead stair. (SRJA 2014)
B-10. Rooms 002/003 Looking northeast. (SRJA 2014)
B-11. Rooms 002/003 Looking East. (SRJA 2014)
B-12. Room 002 Looking west towards Room 001. (SRJA 2014)
B-13. Room 002 Looking north towards Crawl Space 004 opening. (SRJA 2014)
B-14. Room 002 Looking east at stone and brick chimney. (SRJA 2014
B-15. Room 003 Looking north towards stone chimney and foundation. (SRJA 2014)
B-16. Room 003 Looking southeast towards Window 001. (SRJA 2014)
B-17. Room 003 Looking north towards Crawl Space 005 access. (SRJA 2014)
B-18. Room 003 at beam end looking northwest. (SRJA 2014)
B-19. Crawl Space 005 Looking East towards center wood post. (SRJA 2015)
B-20. Crawl Space 005 Looking southeast corner. (SRJA 2015)
B-21. Crawl Space 005 Looking southeast into corner. (SRJA 2015)
B-22. Crawl Space 005 Looking south at old foundation wall. (SRJA 2015)
B-23. Crawl Space 005 Looking south at steel post. (SRJA 2015)
B-24. Crawl Space 005 Looking west at steel post. (SRJA 2015)
B-25. Crawl Space 005 Looking northwest towards center post and tunnel to Crawl Space 006 in the background. (SRJA 2015)
B-26. Looking west into Crawl Space 006. (SRJA 2015)
B-27. Looking south at beam support between Crawl Space 005 and 006. The trench to 006 is on the right side of the photograph. (SRJA 2015)
B-28. Looking southwest into Crawl Space 006. (SRJA 2015)
B-29. Looking north in the Crawl Space 006 tunnel. (SRJA 2015
B-30. Looking south towards supplemental steel beam and posts. The wood access behind these steel posts leads to Crawl Space 004. (SRJA 2015)
B-31. Crawl Space 006 Looking west along the steel beam and trench. (SRJA 2015)
B-32. Crawl Space 006 Looking west. (SRJA 2015)

1-1. Room 100 Looking north. (SRJA 2014)
1-2. Room 100 Looking south. (SRJA 2014)
1-3. Room 100 Looking northwest. (SRJA 2014)
1-4. Room 100 Fireplace Detail. (SRJA 2014)

1-5. Room 100 Millwork. Note the simple baseboard with the tall shoe molding. (SRJA 2014)
1-6. Door 100/1. (SRJA 2014)
1-7. Door 100/1 Hardware. (SRJA 2014)
1-8. Window 102 Interior jamb detail. Note the side jambs are slightly splayed. (SRJA 2014)
1-9. Room 101 Looking north. Note the wood quarter-round trim in the corner and at the ceiling. (SRJA 2014)
1-10. Room 101 Looking east. (SRJA 2014)
1-11. Room 101 Looking south. (SRJA 2014)
1-12. Room 102 Looking north toward fireproof file cabinet. (SRJA 2014)
1-13. Room 102 Looking east. (SRJA 2014)
1-14. Room 102 Looking south at the bay windows. (SRJA 2014)
1-15. Room 101 Looking west at the built-in cabinet and Door 102/1 to the kitchen. (SRJA 2014)
1-16. Door 102/1 Trim Detail. (SRJA 2014)
1-17. Door 100/2 Millwork Detail. (SRJA 2014)
1-18. Door 102/2 Detail. (SRJA 2014)
1-19. Room 102 Bay window detail. (SRJA 2014)
1-20. Room 103 Looking north. (SRJA 2014)
1-21. Room 103 Looking east. (SRJA 2014)
1-22. Room 103 Looking south. (SRJA 2014)
1-23. Room 103 Looking west. (SRJA 2014)
1-24. Closet 103A. Note the low ceiling height at only 5’-9.5” tall. (SRJA 2014)
1-25. Bathroom 104 Looking north. (SRJA 2014)
1-26. Bathroom 104 Looking south. (SRJA 2014)
1-27. Bathroom 104 Window 109 Detail. Note this stool and jamb detailing does not match other windows in the building. (SRJA 2014)
1-28. Bathroom 104 Door 104/2 hardware on the bathroom side of the door. (SRJA 2014)
1-29. Bathroom 104 Door 104/2 hardware on interior of closet. (SRJA 2014)
1-30. Kitchen 105 Looking north. (SRJA 2014)
1-31. Kitchen 105 Looking east. (SRJA 2014)
1-32. Kitchen 105 Looking southwest. (SRJA 2014)
1-33. Kitchen 105 Looking west. (SRJA 2014
1-34. Breakfast Nook 106 Looking north. (SRJA 2014)
1-35. Breakfast Nook 106 Looking east. (SRJA 2014)
1-36. Breakfast Nook 106 Looking south from the kitchen. (SRJA 2014)
1-37. Breakfast Nook 106 Looking west towards basement door. (SRJA 2014)
1-38. Existing Stair 107 Looking north and at stair that was removed in 1997. (SRJA 2014 and Maintenance Department Files)
1-39. Stair 107 Looking north at old stovepipe location. (SRJA 2014)
1-40. Stair 107 Looking south. (SRJA 2014)
1-41. Hall 108 Looking east. (SRJA 2014)
1-42. Hall 108 Looking west towards in-filled Door 112/2. (SRJA 2014)
1-43. Hall 108 Detail of built-in cabinet and transom of Door 101/1. (SRJA 2014)
1-44. Hall 108 Looking east towards built-in cabinet. Note the sill does not extend under the left trim. (SRJA 2014)
1-45. Office 109 Looking north. (SRJA 2014)
1-46. Office 109 Looking east at Door 109/3. (SRJA 2014)
1-47. Office 109 Looking south at the attic stair Door 109/4. (SRJA 2014)

1-48. Office 109 Looking south at the office entry Door 109/1. (SRJA 2014)
1-49. Office 109 Detail of Door 109/3 hardware, a combination of the earlier knob with a 1937 back plate. (SRJA 2014)
1-50. Office 109 Detail of Door 109/1 hardware, consistent with the 1937 renovation. (SRJA 2014)
1-51. Attic Stair 110 Detail of winding treads. (SRJA 2014)
1-52. Attic Stair 110 Detail of treads. (SRJA 2014)
1-53. Attic Stair 110 Detail. (SRJA 2015)
1-54. Bathroom 111 Looking north. (SRJA 2014)
1-55. Bathroom 111 Looking east. (SRJA 2014)
1-56. Bathroom 111 Looking south. (SRJA 2014)
1-57. Dormitory 112 Looking southeast. (SRJA 2014)
1-58. Dormitory 112 Looking east at covered Door 112/2. (SRJA 2014)
1-59. Dormitory 112 Looking south. (SRJA 2014)
1-60. Dormitory 112 Looking southwest. (SRJA 2014)
1-61. Dormitory 112 Detail of Lights. (SRJA 2014)
1-62. Dormitory 112 Door 112/1 Hardware Detail. (SRJA 2014)
1-63. Dormitory 112 Interior window detail. (SRJA 2014)
1-64. Dormitory 112 Millwork and wood floor detail. (SRJA 2014)
1-65. Door 113/1 into Bathroom 113 Looking south. (SRJA 2014)
1-66. Bathroom 113 Looking south. (SRJA 2014)
1-67. Bathroom 113 Looking east at toilet plumbing. (SRJA 2014)
1-68. Bathroom 113 Looking north. (SRJA 2014)

2-1. Stair 200 Looking north. (SRJA 2014)
2-2. Hall 200 Looking east. (SRJA 2014)
2-3. Office 201 Looking south. (SRJA 2014)
2-4. Office 201 Looking north. (SRJA 2014)
2-5. Office 201 Looking east. (SRJA 2014)
2-6. Office 202 Looking east. (SRJA 2014)
2-7. Office 202 Looking south. (SRJA 2014)
2-8. Office 202 Looking west. (SRJA 2014)
2-9. Closet 202A. (SRJA 2014)
2-10. Attic 203 Looking east toward the attic stair. (SRJA 2015)
2-11. Attic 203 Looking south at center chimney and second floor walls. (SRJA 2015)
2-12. Attic 203 Looking southwest. (SRJA 2015)
2-13. Attic 203 Looking northwest towards dormitory roof framing and post. (SRJA 2015)
2-14. Attic 203 Looking west through dormitory roof truss framing. (SRJA 2015)
2-15. Attic 203 Looking northwest at back side of the north gable and Window 203. (SRJA 2014)

Structural Existing Conditions

S1. Crack in east stone retaining wall and concrete cap. (SEA 2015)
S2. Girder bearing. (SEA 2015)
S3. Steel post supporting wood girder. (SEA 2015)
S4. Top of steel post. (SEA 2015)
S5. Bottom of steel post. (SEA 2015)

S6. Timber girder notched at top with recess at bottom. (SEA 2015)
S7. Girder and post in Room 003. (SEA 2015)
S8. Post support at north end. (SEA 2015)
S9. Inadequately spliced floor joist beyond end of girder. (SEA 2015)
S10. Gap between post and concrete pad. (SEA 2015)
S11. Trench for access in crawl space. (SRJA 2015)
S12. Loose stone pilaster supporting girder. (SRJA 2015)
S13. Post supporting girder. (SRJA 2015)
S14. Post bearing on soil. (SRJA 2015)
S15. Steel post supporting steel beam. (SRJA 2015)
S16. Post bearing on concrete patio block. (SRJA 2015)
S17. Stone wall above opening. (SRJA 2015)
S18. Inadequate splice of roof rafter at northeast valley. (SEA 2015)
S19. Inadequate support of roof rafter. (SEA 2015)
S20. Modified roof framing adjacent to Room 201. (SEA 2015)
S21. Roof truss framing over warehouse addition. (SEA 2015)
S22. Gap in exterior sheathing. (SEA 2015).

Mechanical, Electrical and Plumbing Existing Conditions

MEP01. Fire Offices – HS-4. (SRJA 2015)
M01. Example of electric baseboard heaters in Dining Room 102. (HEI 2015)
M02. Fireplace in Living Room 100. (HEI 2015)
M03. Heat pump condensing unit and fan coil unit in Basement 002. (HEI 2015)
M04. Thermostat in Dining Room 102. (HEI 2015)
M05. Example of supply ductwork and supply register. (HEI 2015)
M06. Return grille in Dining Room 102. (HEI 2015)
M07. Example of ceiling fan in Dining Room 102. (HEI 2015)
M08. Exhaust hood in Kitchen 105. (HEI 2015)
M09. Breakfast Room 106, Dryer vent and termination. (HEI 2015)
M10. Bathroom 110, Exhaust fan and termination in the attic. (HEI 2015)
M11. Bathroom 113, Exhaust fan and termination. (HEI 2015)
M12. Electric heater in Basement 001. (HEI 2015)
M13. Portable dehumidifier in Basement 003. (HEI 2015)
M14. Exhaust fan in Office 201. (HEI 2015)
M15. Window air conditioning unit in Office 201. (SFJA 2014)
M16. Exhaust fan in Office 202. (HEI 2015)
M17. Window air conditioning unit in Office 202. (HEI 2015)
M18. Vent below Dormitory 112. (HEI 2015)

P01. Irrigation vacuum breaker. (HEI 2015)
P02. Domestic electric water heater in Basement 001. (HEI 2015)
P03. Wall hydrant. (SRJA 2014)
P04. Domestic water entry in Basement 001. (HEI 2015)
P05. Example of water and sanitary piping system in Basement 003. (HEI 2015)

P06. Lavatory, water closet, and shower in Bathroom 104. (HEI 2015)
P07. Enamel two-compartment sink in Kitchen 104. (HEI 2015)
P08. Lavatory, water closet, and shower in Bathroom 111. (HEI 2015)
P09. Lavatory, water closet, and shower in Bathroom 111. (HEI 2015)
P10. Lavatory, water closet flange, washing machine connections, and shower in Bathroom 113. (HEI 2015)
P11. Lavatory, water closet flange, washing machine connections, and shower in Bathroom 113. (HEI 2015)
P12. Lavatory, water closet flange, washing machine connections, and shower in Bathroom 113. (HEI 2015)
P13. Lavatory, water closet flange, washing machine connections, and shower in Bathroom 113. (HEI 2015)
P14. Example of gutter, downspout systems, and exterior area drain. (HEI 2015)
P15. Example of gutter, downspout systems, and exterior area drain. (HEI 2015)
P16. Example of gutter, downspout systems, and exterior area drain. (HEI 2015)

E01. Service conductors at weatherhead located on the south side of the house. (HEI 2015)
E02. Exterior electrical service meter located on the south side of the building. (HEI 2015)
E03. Exterior electrical service meter located on the south side of the building. (HEI 2015)
E04. Electrical service panelboard located in Basement 001. (HEI 2015)
E05. Electrical panelboard located in Basement 001. (SRJA 2014)
E06. Data network located in Basement 003. (HEI 2015)
E07. Light fixture located in Basement 001, 002 and 003. (HEI 2015)
E08. Ceiling fan located in Living Room 100. (HEI 2015)
E09. Fluorescent surface mounted wraparound light fixture located in Living Room 100. (HEI 2015)
E10. Ceiling fan located in Office 101 and Dining Room 102. (HEI 2015)
E11. Decorative sconce located in Bathroom 104. (HEI 2015)
E12. Light fixture located in Closet 104A. (HEI 2015)
E13. Light fixture located above the kitchen sink. (HEI 2015)
E14. Light fixture located in Breakfast Room 106. (HEI 2015)
E15. Light fixture located in Stair 107. (HEI 2015)
E16. Light fixture located in Bathroom 111. (SRJA 2014)
E17. Decorative sconce located in Bathroom 111. (SRJA 2014)
E18. 1937 light fixture located in Dormitory 112. (HEI 2015)
E19. Pendant light fixture located in Dormitory 112. (SRJA 2014)
E20. Combination exhaust fan/light fixture located in Office 202. (HEI 2015)
E21. Light fixture located in Closet 202A. (HEI 2015)
E22. Telephone service entrance located on the northeast exterior of the building. (HEI 2015)
E23. TV satellite pole located on the southwest exterior of the building. (HEI 2015)

F01. Fire extinguishers. (Kitchen 105-Left, Stairs 200-Right) (HEI 2015)

Treatment Recommendations

T1. HS-04 1/1 double-hung windows at the first floor and 4/4 double-hung windows at the second floor. Red arrow points to Window 106, which is difficult to see in the photographs. (Detail WICA 4277)
T2. Elevation of a Marvin Ultimate Clad window at Window 102 location.
T3. Figure T3. Jamb detail of a Marvin Ultimate Clad window at Window 102 location. The goal would be to preserve the historic interior sill, jambs and trim. Exterior trim may be replaced in kind. The exterior trim has a 3/16-inch bead.
T4. Elevation of a Marvin Ultimate Clad outswing casement window at Window 106 location. Because this window opening is not well documented, this is a proposed window infill design.
T5. Jamb detail of a Marvin Ultimate Clad casement window at Window 106 location.

Introduction

Volume I of the Wind Cave National Park Historic Housing Area Historic Structures Report (HSR) covers the history of the development of the park and the historic housing area. This individual Volume III is to serve as a guide for the future caretaking of this significant property, HS-04 Fire Office Building. This volume focuses on the individual history, review of existing conditions and treatment recommendations unique to HS-04.

The one-and-one-half story HS-04 building was originally built in 1905 as the superintendent's residence, overlooking the historic cave entrance. The 3,200 square foot building has undergone several major renovations and expansions. The building currently serves as the Fire Office for the park. HS-04 retains a significant amount of exterior integrity and some interior finishes dating to the period of significance (1928 – 1942). The building is visible from the public right of way and the exterior should be preserved in its current condition to the extent possible.

The shell of the HS-04 is in overall good condition, having been very well maintained for the last 110 years. Raised grade along the side of the addition is causing deterioration of the stucco exterior. The original wood windows are missing throughout the building and require replacement to assist with energy efficiency. Suspect hazardous materials have been located in the house which will require investigation and abatement. The existing HVAC system is not adequately heating or cooling the building and the overall office space is ready for a major rehabilitation.

With the ultimate treatment recommendation to *Rehabilitate* the building, great care shall be taken to rehabilitate the building and accommodate for the needs of the 21st century office space, while preserving the house's most significant features.

Significant Features

Care should be taken to preserve the following significant historic features routine maintenance and through future rehabilitation projects.

Exterior:

- Site – The building is located on a hill, northwest of the Administration Building, and is set into the gently sloping hillside.
- Massing – The U-shape plan and 1 ½ story massing with hipped and gable roofs.
- Roofline – Hipped and gable roofs.
- Basic Footprint – U-shape
- Porches – Front stone terrace with battered walls and stone steps. Decorative gabled hood over dormitory entrance.
- Stonework—Native stone laid in a random ashlar pattern.
- Chimneys – Native stone central chimney and west chimney.
- Stucco – Spanish stucco exterior walls.
- Gable – Wood horizontal siding with louver.
- Trim – Wood cornice, typical throughout historic housing area.
- Patterns of fenestration – Original window and door openings.

- Windows - Only original window sash remain in dormitory addition, basement, and the north attic gable. Original wood window trim and sills remain at most locations.
- Doors – Front doors and back doors. Basement bulkhead door.

Interior:

- Doors – Original doors and hardware
- Millwork, including built-in cabinets (dining room and back hall), door and window trim, baseboards
- Stair – Winding Stair 110.
- Plaster wall and ceiling finishes
- Historic flooring – Wood floors in dormitory. Flooring in remainder of building unknown.
- Fireplace and mantel in Room 100
- Light Fixtures in Dormitory 112 and Wall Sconce in Bathroom 111.
- Plan and room layout (First floor living areas and Bedroom 109 most important. Kitchens and baths have all been altered.)

History and Significance of HS-04

Note: See Volume One for a full bibliography and additional information about the early development of the Historic Housing Area of Wind Cave National Park.

At the core of HS-04, now known as the Fire Office, is the original superintendent's residence for Wind Cave National Park, and the first building constructed specifically for park use in 1905. The original residence was a four-room cottage with stone walls and an open wrap-around front porch (Figures 4 and 5). It was constructed for William Rankin, the first Superintendent of Wind Cave National Park.[1] As was often the case in the early years of the park's existence, funds for new construction were limited. Rankin's successor as Superintendent later wrote:

> An inspector came out from Washington in 1909 and was amazed to see the stone residence, since no appropriation had been made available. I think he left still wondering how it was built. The answer was; an appropriation of stone for bridge abutments furnished the stone, quarried on the Park, and labor for road work and cave improvements took care of the rest. It took figuring in those even if the dollar was worth more. [2]

The stone cottage was the only residence at the park for many years, and at times the superintendent and his family shared the house with other staff members. In 1918, a small frame addition was constructed that added two rooms and a bathroom, presumably for staff and guests and the small gabled dormer on the front of the house was changed into a large shed dormer, accommodating a much larger space on the second floor (Figures 8 and 9). The building continued to house all park staff members until 1924 when HS-05 was built to serve as a ranger cabin.[3] A small two car garage was added to the southeast corner of the building in 1932.[4]

In 1934, a new Superintendent's Residence (HS-03) was constructed, and plans got underway to remodel this building to serve as a ''Rangers Mess and Recreation Building."[5] Plans for the two phases of remodeling were drawn by the National Park Service Branch of Plans and Design in 1935 and 1936. The 1935 drawings show interior changes to create a more open floorplan, as well as extensive exterior alterations designed to bring the exterior styling into compliance with the design scheme used on other park buildings. The roof lines changed from the large shed dormer and hipped roofs to having gabled roofs and the eave overhangs were removed. The porch was removed and a large stone terrace with battered walls was constructed along the

[1] Kenneth W. Karsmizki, 1995, "Wind Cave National Park Multiple Property Submission," *National Register of Historic Places,* accessed 2-2015, http://pdfhost.focus.nps.gov/docs/nrhp/text/64500591.PDF: 31.
[2] Letter written to then-Superintendent Semingsen ca. 1953, by former superintendent Rufus J. Pilcher. Wind Cave National Park Historical Files: Years of Growth 1931-1946, Box 2.F22. South Dakota: Wind Cave National Park Library.
[3] 1924 Superintendent's Annual Report, Wind Cave National Park. (Copy on file at the WICA Library.) Hereafter referred to by year as WICA Superintendent's Report.
[4] January 19, 1932 Superintendent's Monthly Report, Wind Cave National Park. (Copy on file at the WICA Library). Hereafter referred to by month and year as WICA Superintendent's Monthly Report.
[5] List of Classified Structures.

front of the building (Figures 20 and 21). The 1936 drawings show plans for a large dormitory addition to the southwest corner; that addition required removal of one of the two rooms that had been added in 1918.[6] The two car garage appears to have been removed about the same time those additions were completed (Figure 24). Much of the labor for the remodeling project was supplied by CCC workers.

The building served as the Ranger's Club House into the last quarter of the 20th century, and in 2000, it was converted to office space for the Northern Great Plains Fire Office. Neither of those functions required significant exterior alterations, and it looks today much as it did in the late 1930s. It is significant as the first building to be constructed at Wind Cave National Park and for its long tenure as staff housing.

Current Title: HS-04 Fire Office **FMSS Asset Number 27954** **LCS ID 010741**		
Previous Name	**Date of Name**	**Source of Name and Notes**
Superintendent's Residence	ca. 1905	Plans, Superintendent's Reports
Old Superintendent's Residence	1936	Superintendent's Reports
Ranger's Club House	1937	Superintendent's Reports, Ranger's Manuals
Superintendent's Old Residence	1940	1940 Master Plan
Q-04	ca. 1949-2000s	Maintenance Department Files
Residence and Dorm.	1963	1963 Site Plan
Residence-dormitory (Old Superintendent's) #4	1976	Classified Structure Field Inventory Report
Superintendent's Cottage (HS-4)	1995	National Register Nomination
Old Superintendent's Residence 1905	1988	1988 Resource Management Plan
Fire Office Building	2000	Current WICA Staff, LCS
H-B-04 Superintendent's Cottage (HS-4)	2005	Cultural Landscape Report

Figure 1. Table of Previous Titles.

[6] Appendix A, HS-04, WICA_108_3023_ [id278474].

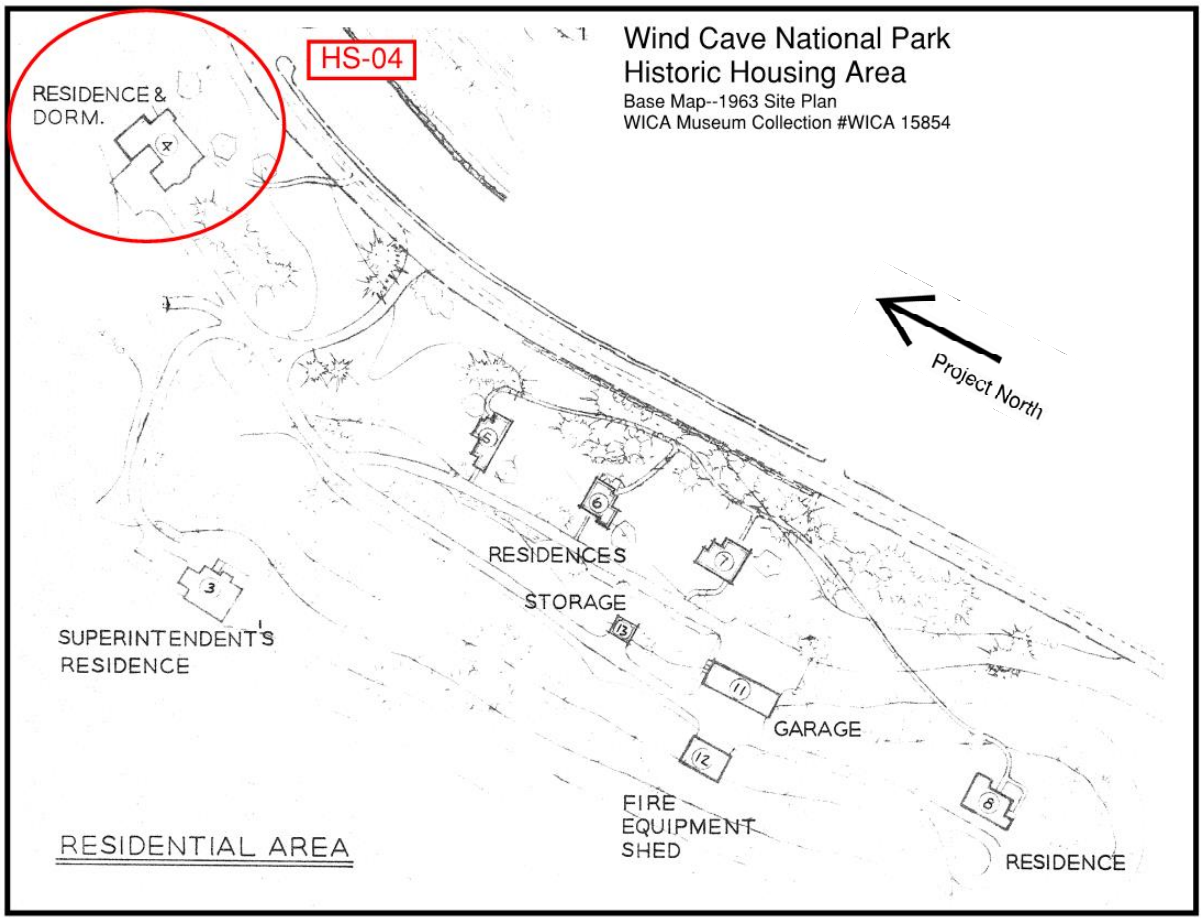
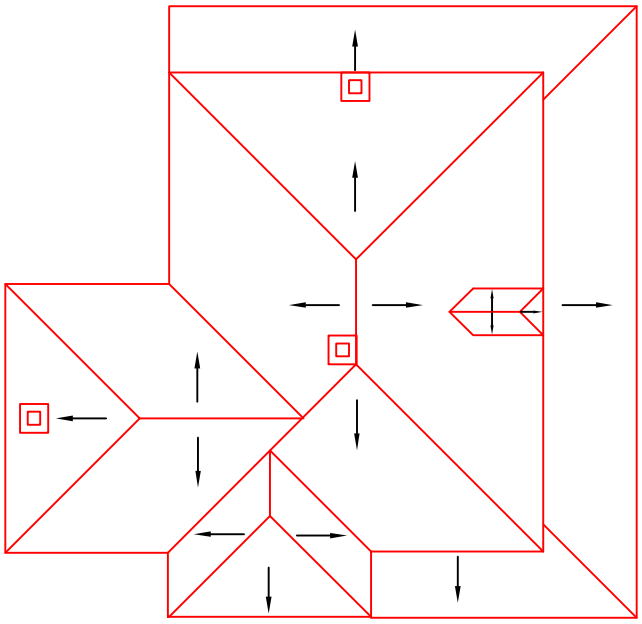


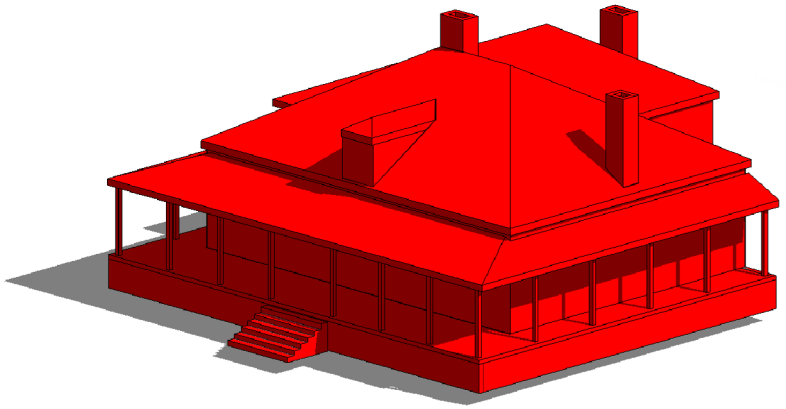
Figure 2. Location Map.

Construction Chronology		
Construction Period	Building Use	Date
1	Superintendents Residence	1905 - 1917
2	Superintendents Residence	1918 - 1934
3	Summer Home for Rangers	1935 - 1942
4	Seasonal Housing and in 2000 Fire Office	1942 - Present

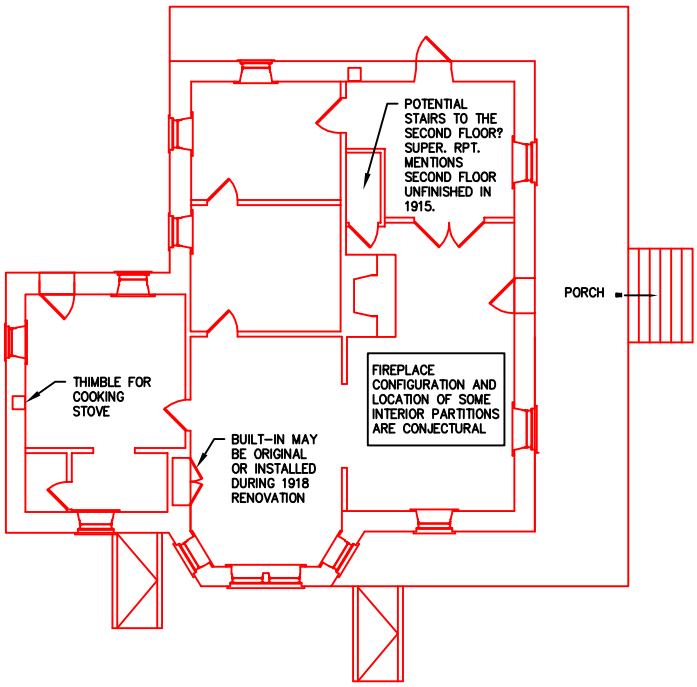
Figure 3. Construction Chronology.



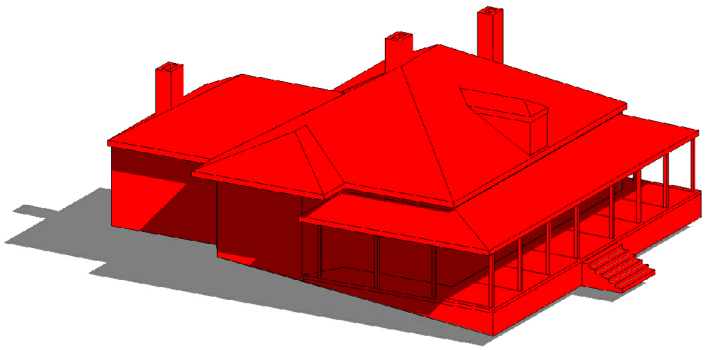
ROOF PLAN



VIEW LOOKING SOUTHWEST.



FIRST FLOOR PLAN



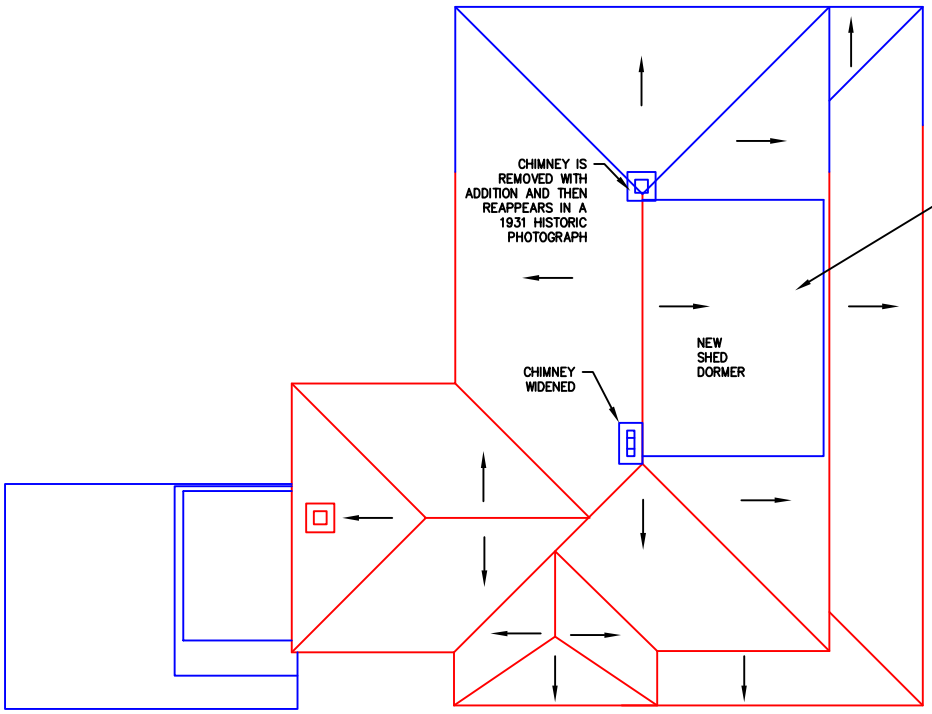
VIEW LOOKING NORTHWEST.

LEGEND:

CONSTRUCTION PERIOD 1

CONSTRUCTION PERIOD 1: 1905–1918
SUPERINTENDENT'S RESIDENCE

WIND CAVE HS-04
CHRONOLOGY DRAWINGS
HISTORIC STRUCTURE REPORT



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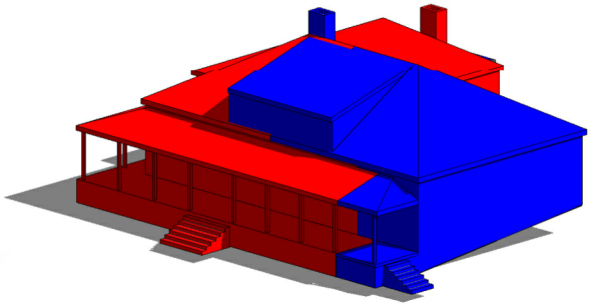

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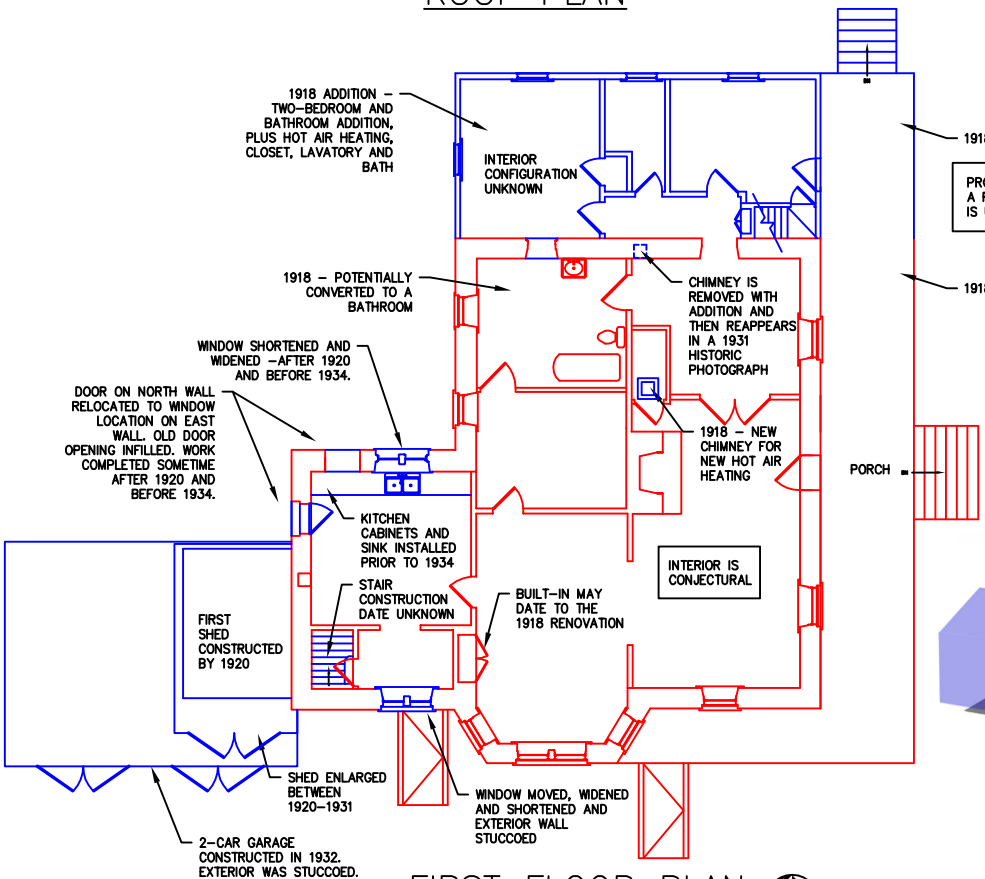

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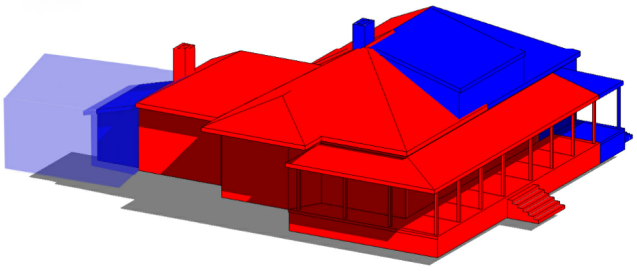


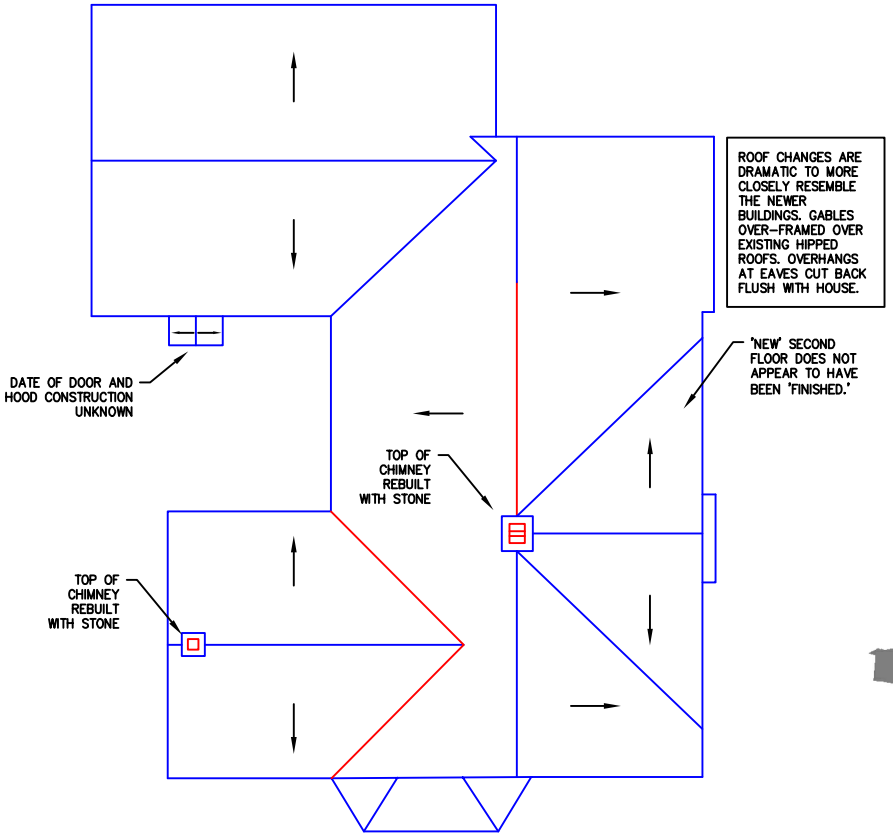
VIEW LOOKING NORTHWEST.

CONSTRUCTION PERIOD 2: 1918–1934
SUPERINTENDENT'S RESIDENCE

LEGEND:

- PERIOD 1 CONSTRUCTION
- PERIOD 2 CONSTRUCTION

WIND CAVE HS-04
CHRONOLOGY DRAWINGS
HISTORIC STRUCTURE REPORT



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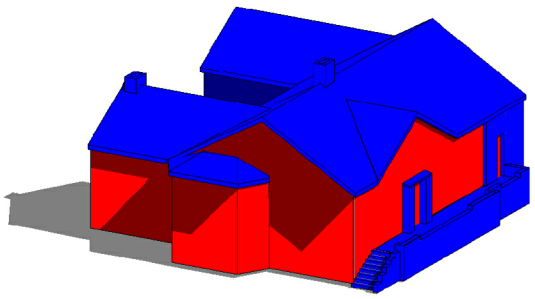
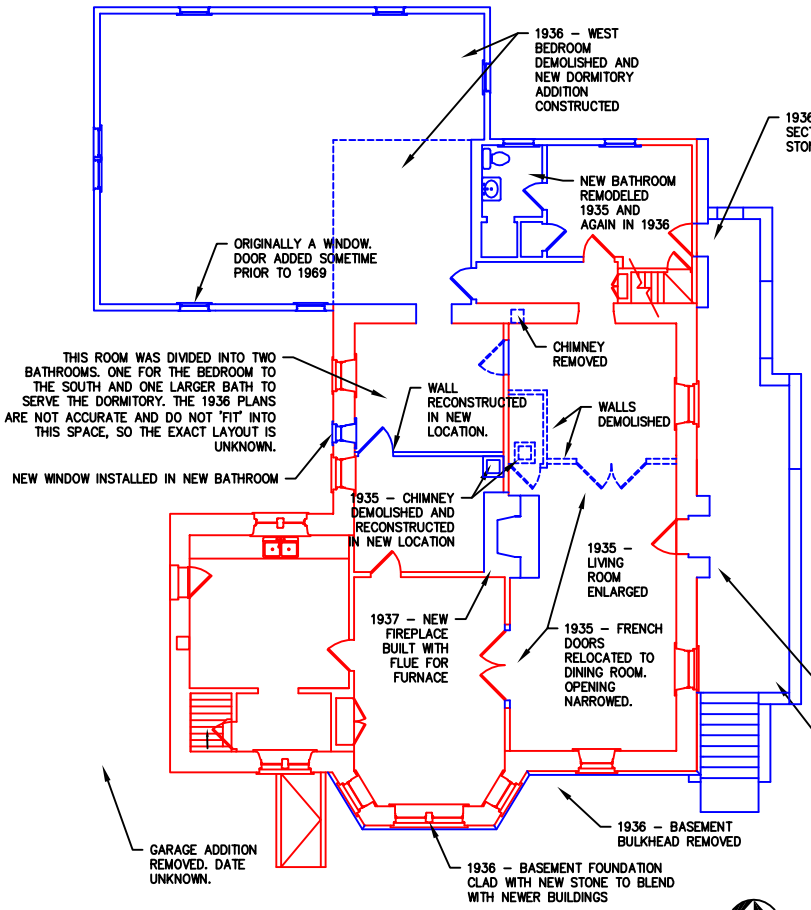


VIEW LOOKING NORTHWEST.



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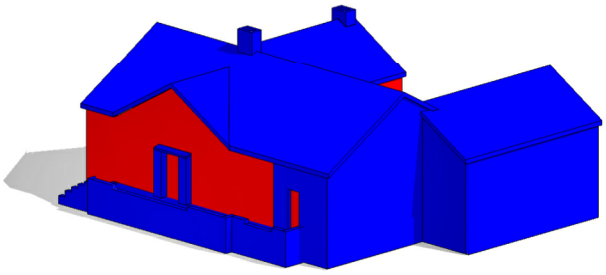


VIEW LOOKING SOUTHWEST.

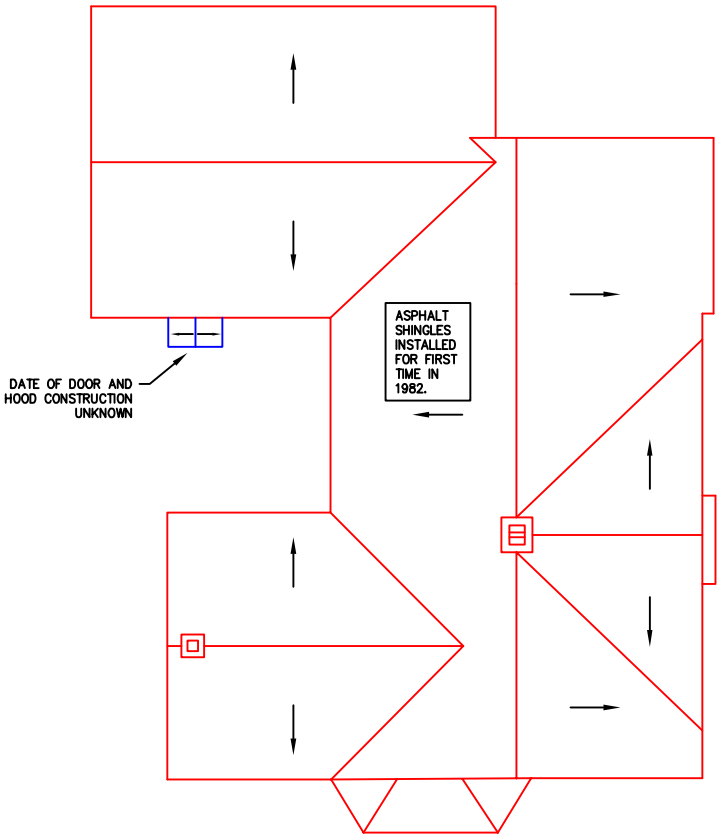
LEGEND:

CONSTRUCTION PERIOD 1 & 2

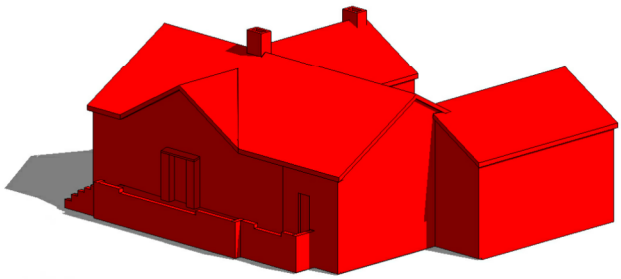
CONSTRUCTION PERIOD 3

CONSTRUCTION PERIOD 3: 1935–1942 SUMMER HOME

WIND CAVE HS–04
CHRONOLOGY DRAWINGS
HISTORIC STRUCTURE REPORT

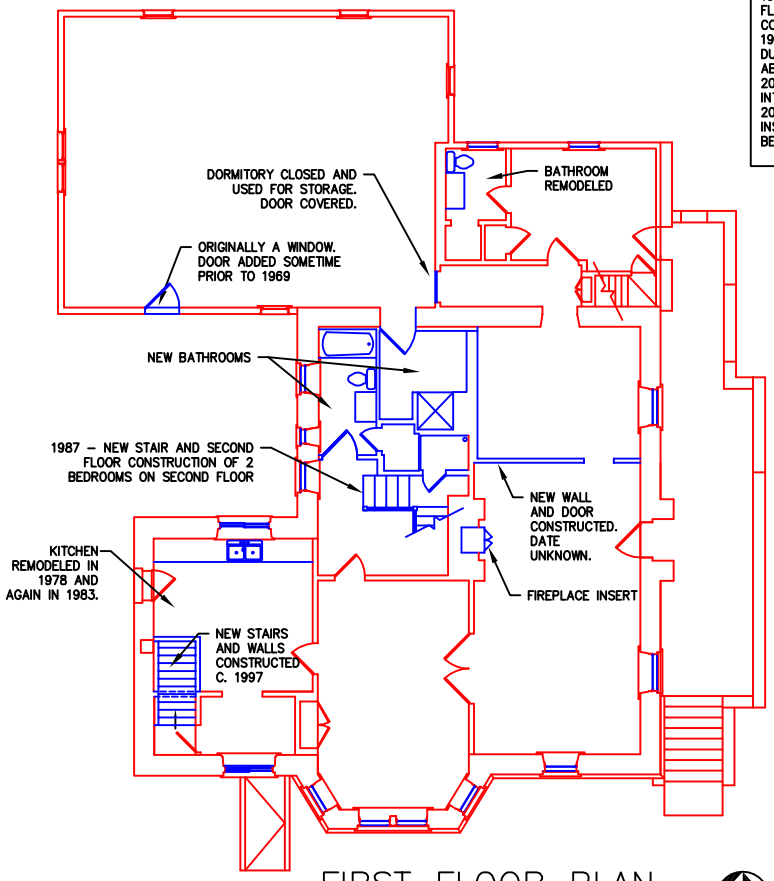


ROOF PLAN

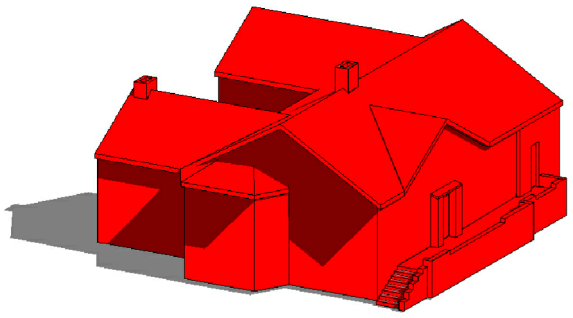


VIEW LOOKING NORTHWEST.

ORIGINAL WOOD DOUBLE-HUNG WINDOWS REPLACED IN 1952.
EXISTING STORM WINDOWS INSTALLED IN 1980.
ELECTRIC HEAT INSTALLED 1985.
1987 – STAIR AND SECOND FLOOR BEDROOMS CONSTRUCTED.
1997 – MAJOR REHABILITATION DUE TO LEAD PAINT ABATEMENT.
2000 – FIRE OFFICE MOVES INTO BUILDING.
2007 – TWO OFFICES INSTALLED IN SECOND FLOOR BEDROOMS.



FIRST FLOOR PLAN



VIEW LOOKING SOUTHWEST.

LEGEND:

CONSTRUCTION PERIOD 1, 2, & 3

CONSTRUCTION PERIOD 4

CONSTRUCITON PERIOD 4: 1942– PRESENT

SEASONAL HOUSING. FIRE OFFICE MOVES INTO BUILDING IN 2000

WIND CAVE HS–04
CHRONOLOGY DRAWINGS
HISTORIC STRUCTURE REPORT

Timeline of Major Events and Alterations.

Historic Primary Function Use: Single Family Dwelling "superintendent's cottage"
Current Primary Function and Use: Government Office

1905, ca.
Built as superintendent's cottage overlooking the area of the historic cave entrance.
(Note that various sources cite the construction date as 1904, 1905 and 1906. [List of Classified Structures.; Maintenance Department Files.]

1910
Management records put this as the construction date, with an original cost of $5,418.14. Other sources clearly show it was built earlier. [Maintenance Department Files.]
Stone wall and sidewalk built in front of HS-04. [1910 WICA Annual Superintendent's Report.]

1915
Superintendent's office and other rooms in HS-04 painted. Annual report notes that the upstairs portion of the house was still unfinished. [1915 WICA Annual Superintendent's Report.]

1918
Two-room and bathroom addition, plus hot air heating, closet, lavatory and bath. (Larger front dormer may have been added then as well.) [1918 WICA Annual Superintendent's Report.]

1929
Property file lists remodel. [Karsmizki, "Administrative and Utility Area NR Nomination," 7.42.]

1931
Master Plan of WICA shows building with central rectangular core, a small addition (which corresponds to hip roof addition and a rectangular garage addition,) and masonry wall adjacent to the road in front of building and walkways around the residence. [Karsmizki, "Administrative and Utility Area NR Nomination," 7.36]

1932
January 19, 1932. Work started on a new two car garage at the rear of the superintendent's residence. Frame, "sealed inside with metal lath and stucco outside." [Jan. 19, 1932 WICA Superintendent's Monthly Report. See WICA Museum Collection #4421, Figure 9.]

1933
June 1933. Superintendent monthly report indicates part of the Information center was adapted for use as the Superintendent's Office, "making available the old residence (HS-04) formerly used as superintendent's office for a permanent employee. The old residence was then improved by putting in hot and cold water, sink, and kitchen cabinet." [June, 1933 WICA Superintendent's Monthly Report.]

1934
"Master Plan indicates an intent to remodel the building to serve as a 'Rangers Mess and Recreation Building." [List of Classified Structures.]

1935
March 8, 1935. Plans completed for remodeling of Old Superintendent's Residence (HS-04). Plans were drawn by "G.W.N." of the National Park Service Branch of Plans and Design, recommended by W.G. Carnes, Acting Chief Architect, 3/19/1935, and approved by Arno B. Camerer, Director 4/8/1935. [Appendix A.]

May 1935. Project 6: Remodeling old superintendent's residence: living room enlarged by "removing a partition and installing French doors between the living and dining rooms." Plans also indicate roofline and two-room addition of 1918 were reconfigured as part of that project. Superintendent report notes that the building would be cleaned up and readied for summer rangers, with the work to be completed in the fall. [June, 1935 WICA Superintendent's Monthly Report.]

The new design has been attributed to National Park Service architect, Howard Baker, per the List of Classified Structures report, to "make structure blend with the overall design for the Wind Cave headquarters area." No further evidence that Baker was directly involved in the design work has been found. [List of Classified Structures.]

November 1935. HS-04 Project 6: Remodeling old superintendent's residence: one new chimney constructed from basement through roof, with stone top. Two other chimneys "were removed from the top of the roof line and replaced with stone tops to conform to the general architectural schemes of the park headquarters." [December, 1935 WICA Superintendent's Monthly Report.]

1936.
Property file notes "dormitory wing was added, the porch torn off and terrace added." Oak floors in dormitory, dining room and living room were installed. Wooden shingles used on building. [Karsmizki, "Administrative and Utility Area NR Nomination," 7.37;]; Maintenance report references drawing #WC-3023 for dormitory addition and removal of porch. [Maintenance Department Files.]

March 28, 1936. Plans completed for dormitory addition to "Old Superintendent's Residence" (HS-04). Plans appear to have been drawn by "G.W.N." of the National Park Service Branch of Plans and Design. They were recommended by W. G. Carnes, Acting Chief Architect, 4/25/1936, and approved by Arno B. Camerer, Director on 5/15/1936. [Appendix A.]

March - November 1936. Remodeling old superintendent's residence: removal of "large flat-decked dormer roof" replaced with gable dormer. Hip roofs at both ends were replaced with similar style of other headquarters buildings, "all overhanging eaves being removed." Roof removed on long porches of HS-04. [1936 WICA Superintendent's Monthly Reports.]

October 1936. Stone terrace and stairs at road in front of Rangers club house completed in accordance with Master Plan. Initial coat of stucco applied. Guest room bath plumbing roughed in. [October, 1936 WICA Superintendent's Monthly Report.]

November 1936. "A small crew worked most of the month on the addition to the ranger's clubhouse, placing a stone foundation and starting the framework. Most of the old stonework around the entire building was veneered with new stone to make this structure conform in general appearance with other buildings in this area." The veneering was completed in December 1936. [November and December, 1936 WICA Superintendent's Monthly Reports.]

1937
January 1937. [ECW] crew worked entire month on dormitory addition for Rangers Club House. (HS-04) Interior lath, some exterior 1x12 lap siding on gable ends and metal lath for stucco. Also, wall construction (partitioning), lath installation and rough plumbing for the bathroom. [February, 1937 WICA Superintendent's Monthly Report.]

March 1937. Ranger's club house work during month: "Tinting the walls and ceiling of the dormitory room," installation of finish woodwork and lighting fixtures in dormitory, guest room and guest bath, old fireplace removed and new fireplace built (furnace chimney built in with fireplace chimney), application of exterior stucco and hanging of downspouts. Completion of basement excavation and installation of furnace. [March, 1937 WICA Superintendent's Monthly Report.]

April 30, 1937. Remodeling of HS-04 Completed, per note on plans. [Appendix A.]

November 1937. Removal of [retaining] wall and sloping of the front bank. [April, 1937 WICA Superintendent's Monthly Report.]

1938
Ranger's manual on file at the park describes the "Ranger's Clubhouse" (HS-04) as "the oldest building in the park. It was built in 1906 of native stone, and for many years was used as the superintendent's residence. It has recently been extensively remodeled and is now used exclusively as a summer home for rangers." ["1938 Ranger's Manual," Located at WICA library.]

April 1938. Sod installed around ranger's club house. [May, 1938 WICA Superintendent's Monthly Report.]

1939
Master Plan shows garage removed and proposed addition from 1937 built. Terrace present. [Karsmizki, "Administrative and Utility Area NR Nomination", 7.37.]

1949
Value $25,950.00 [Maintenance Department Files.]

1951
June. Modernized Piping - replaced hot water heating, repaired electrical wiring. [Maintenance Department Files.]

1952
Windows replaced. [Karsmizki, “Administrative and Utility Area NR Nomination,” 7.42.]
Insulation installed in the walls and attic. [Maintenance Department Files.]

1953
July (recorded.) Electrical wiring repair completed. [Maintenance Department Files.]

1957
Redecorate interior, paint exterior, replaced wiring, new stove and refrigerator. [Maintenance Department Files.]

1959
August- November. Repair loose bath tile, Shower stall rehab, shower stall rehab. [Maintenance Department Files.]

1969
August. Paint Stucco. [Maintenance Department Files.]

1974
June. Rewired; Oct. Reshingled. [Maintenance Department Files.]

1978
December. Kitchen cupboards, counter and ceiling tiles. [Maintenance Department Files.]

1979
February. Flooring. [Maintenance Department Files.]

1980-81
Storm doors and windows, solar hot water. [Maintenance Department Files.]

1982
August 20, 1982. Removal of existing wood shingle and reroofed with asphalt shingles. Direct cost $3921.69. (Recorded 23 Apr 1987) [Maintenance Department Files.]

1983
May - June. Refinish floor, repair cracks, paint, new kitchen cupboards, counter [Maintenance Department Files.]

1985
August 23, 1985. Old 2 wire system removed, installed new wiring, grounding, entrance to weather head, panels and baseboard electric heaters. Clint's Electric. Direct Cost $6,666.33. (Recorded May 30, 1986.) [Maintenance Department Files.]

1986
July. Building transferred from G.L. acct. 210 General Buildings to G.L. acct. 215 Historical Buildings. (Recorded 16 Apr 1987.) [Maintenance Department Files.]

1987
January 20, 1987. Construction of 2 bedrooms, 2 closets, hallway and staircase. Direct cost $11,475.00. (Recorded 23 Nov 1987.) This was probably work at the second floor; MR files include photos of a staircase and newly finished attic room. [Maintenance Department Files.]

June 29, 1987. Installation of bath vanity and 30" marble top. Direct cost $189.00. (Recorded 23 Nov 1987) [Maintenance Department Files.]

1988
February 22, 1988. Construct 2 bedrooms, closet hallway and staircase. [Maintenance Department Files.]
February 24, 1988. Carpet Installed. [Maintenance Department Files.]

1991
March 20, 1991. Install wood/coal furnace. [Maintenance Department Files.]
April 22, 1991. Carpet Installation

1993
Tested for Lead Based Paint. Exterior painted. [Maintenance Department Files.]
October 1, 1993. Structure Ultimate Treatment (UT): Restoration. Not approved, Not completed [List of Classified Structures.]

October 25, 1993. Prepare and Paint/Stain exterior surfaces of Quarters #4. [Maintenance Department Files.]

1997
September 9, 1997. Operation Plan for Lead Abatement in A-04. To abate the lead paint found several years ago…Plaster walls…will be encapsulation. Doors, door trim, window trim and baseboard will be stripped off site by a private firm. Stripped wood will be returned to its original finish of walnut stain and polyurethane before being reinstalled. Other upgrades…new linoleum in kitchen, lights, ceiling fan and other electrical upgrades, refinish exterior of front door. Photographs show a wall in the kitchen to be removed and stairs to basement to be rebuilt. [Maintenance Department Files.]

Replaced trim around built in cabinets and front door. Photographs in maintenance file. [Maintenance Department Files.]

2000 FY
Became Northern Great Plains Fire Office. [Maintenance Department Files.]
July 2000. Re-roof with asphalt shingles and gutters and downspouts. (Contract P150500025A) [Maintenance Department Files.]

2006
May 4, 2006. Rehabilitate Historic Quarters HS-4. Undertaking and photographs in file. Deteriorated concrete patio removed and replaced. Excavate existing swale at west and north side of the house to improve drainage. Rotten wood repair. Remove pine tree in rear yard. Level and stabilize wood floor in warehouse. Replace water supply piping and waste and vent piping. Renovate bathroom with leaking tub and deteriorated sink base. Rehabilitate three bathrooms. Remove non-functioning solar water heater system. Install new smoke detectors. Work performed by park staff. [Maintenance Department Files.]

2007
August 17, 2007. Fire Protection Variance/Waiver Request submitted to move two offices into the second story. [Maintenance Department Files.]

Historic Photos

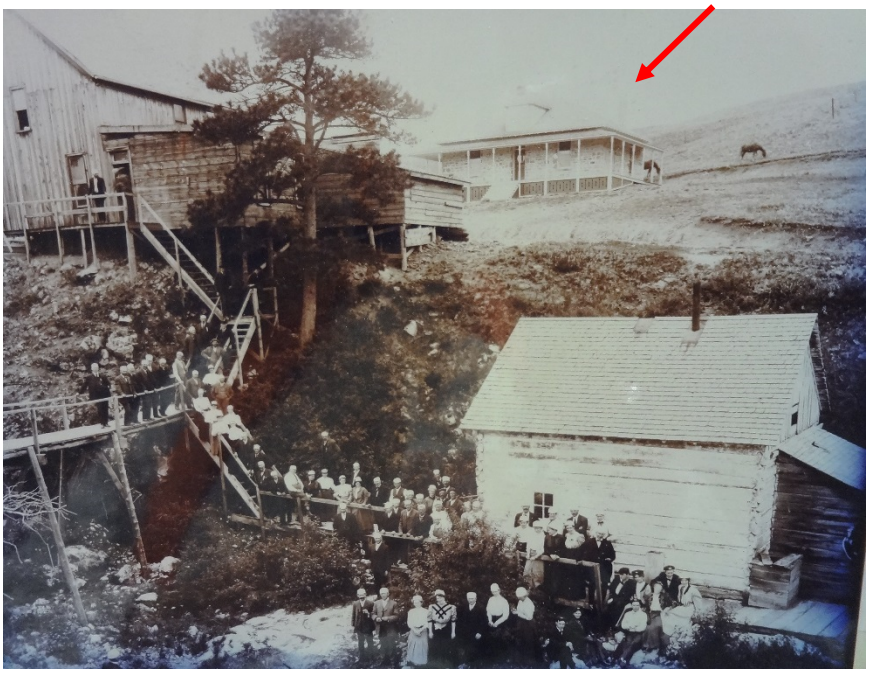


Figure 4. HS-04, ca.1907, looking west, with hotel and cave house in the foreground. (Hot Springs Public Library)

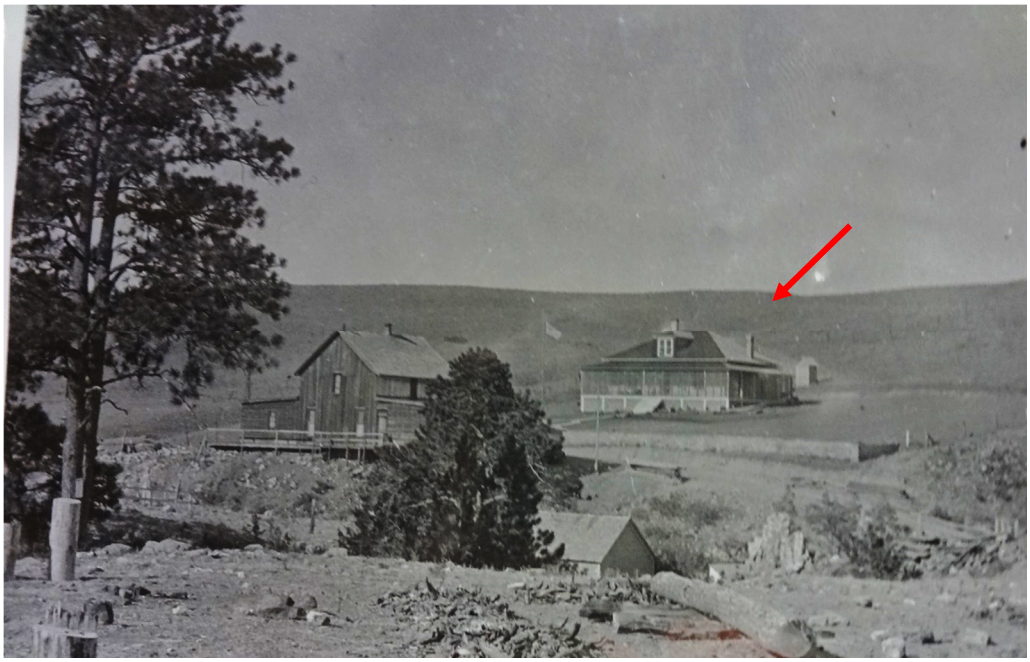


Figure 5. HS-04, 1911, July, looking west. (Hot Springs Public Library)



Figure 6. HS-04, ca.1920, looking west. (WICA 185)



Figure 7. HS-04, ca.1920, looking north. (WICA 1020)



Figure 8. HS-04, 1920, after addition, looking west. (WICA 1024)



Figure 9. HS-04, ca.1920, looking east. The addition is visible on the left side of HS-04. (WICA 8180)



Figure 10. HS-04, ca.1920s, looking east. (WICA 9194)

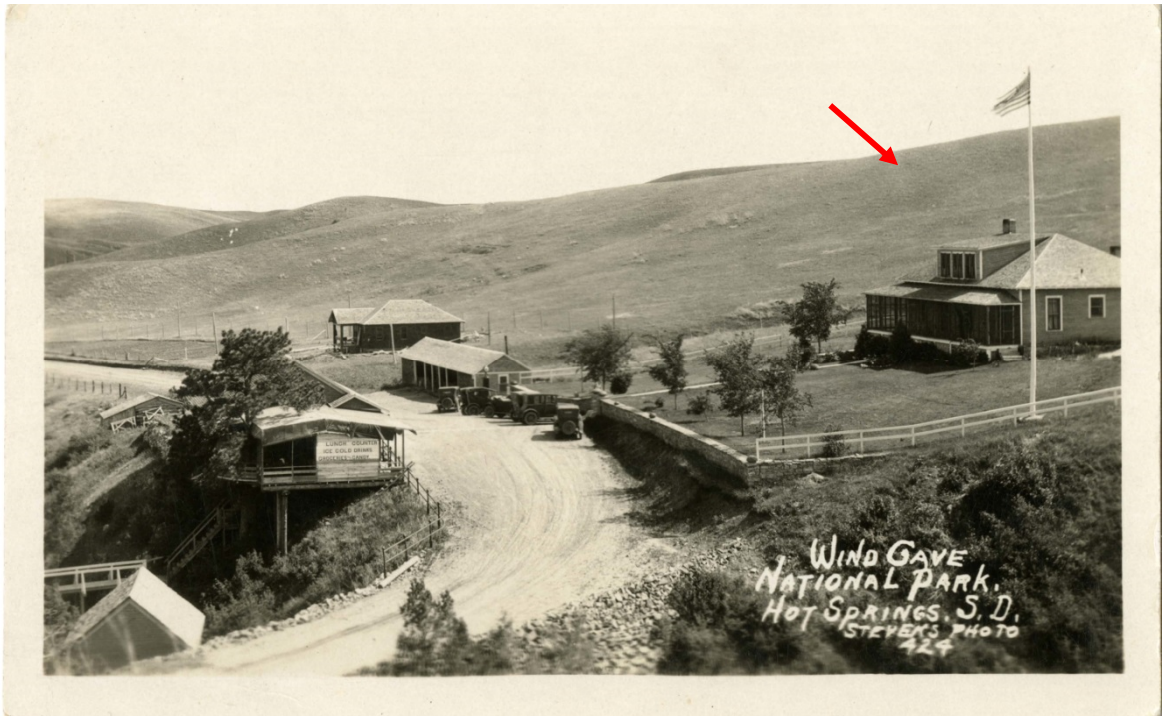


Figure 11. HS-04, ca.1924, looking south. (WICA 1032)



Figure 12. HS-04, 1926, looking west. (WICA 1034)

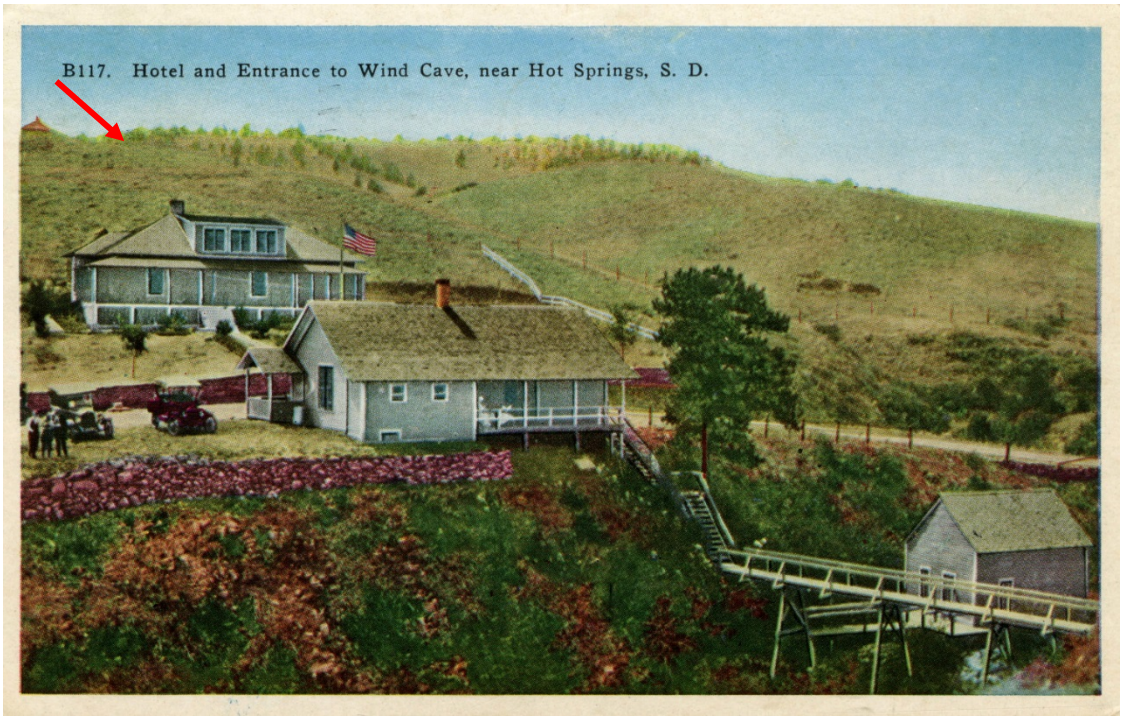


Figure 13. HS-04, ca.1928, looking west. (WICA 9913)



Figure 14. HS-04, ca.1929, July 6, looking southwest. (WICA 15348)



Figure 15. HS-04, ca.1930, looking west. (WICA 4151)



Figure 16. HS-04, ca.1931, looking west. (WICA 4153)

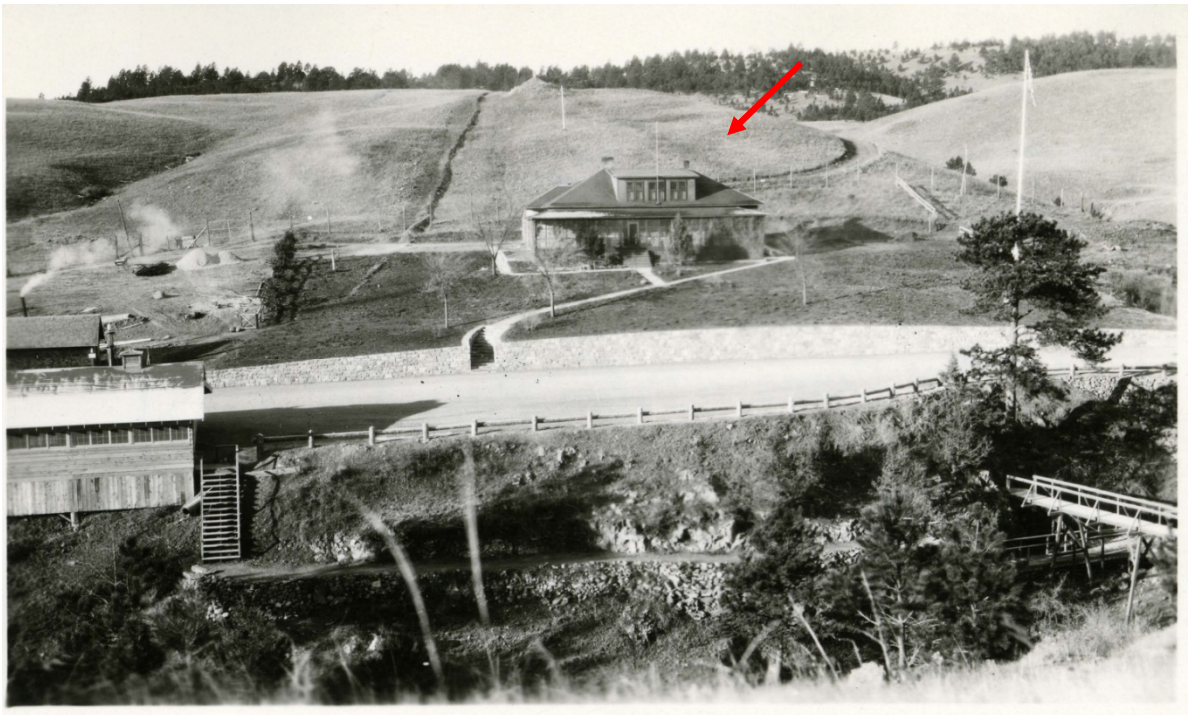


Figure 17. HS-04, 1931, Feb. 14, looking west. (WICA 4658)

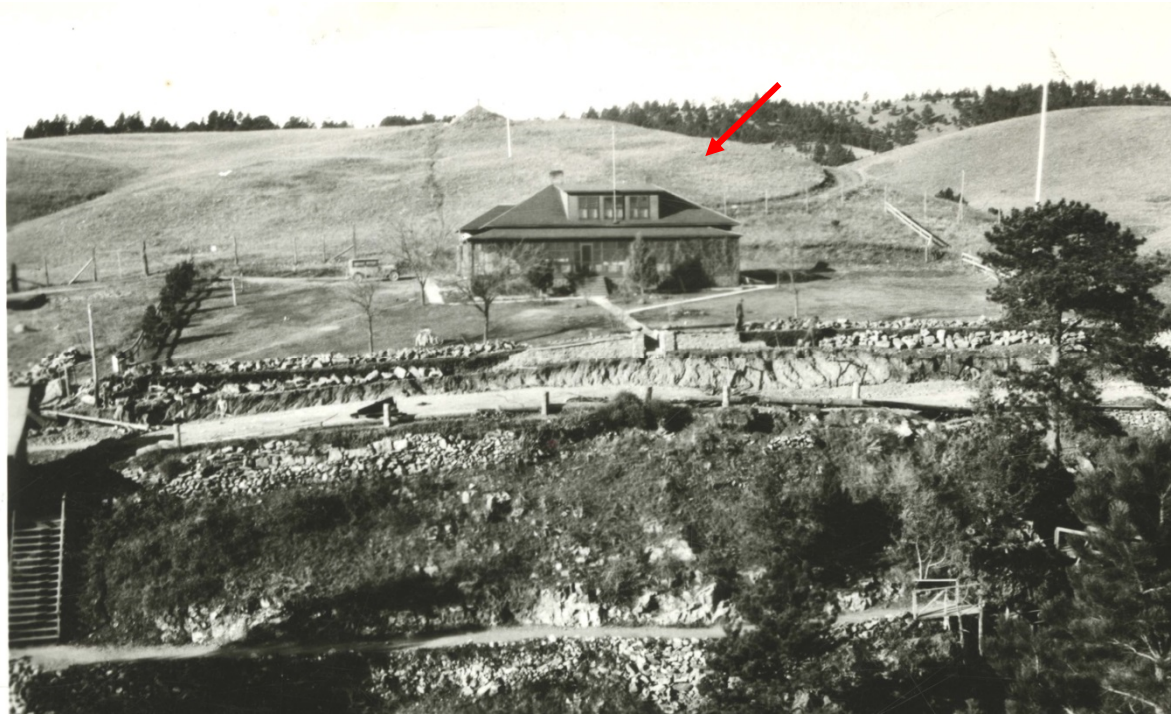


Figure 18. HS-04, ca.1935, looking west. (WICA 4657)



Figure 19. HS-04, 1935, May 8, looking west. This shows the two car garage addition of 1932, and some new stucco on the bay window. (WICA 4421)



Figure 20. HS-04, ca.1936, looking west. (WICA 4152)



Figure 21. HS-04, 1936, looking west. (WICA 4736)



Figure 22. HS-04, ca. 1937, looking west. CCC Crews planting trees. (WICA 4211) Note that this photo was scanned in reverse in the museum collection; it has been presented here in the correct orientation.



Figure 23. HS-04, ca.1937, looking west. (WICA 4735)



Figure 24. HS-04, ca.1940s, looking west. (WICA 4277)



Figure 25. HS-04, ca.1969, looking north. (WICA 6697)



Figure 26. HS-04, ca.1969, looking west. (WICA 7946)



Figure 27. HS-04, ca.1969, looking west. (WICA 7947)



HS-04 Wood trim detail. (SRJA 2015)

Existing Conditions



Figure X1. Looking West from the road. (SRJA 2014)

HS-04 Existing Conditions

HS-04 is the northern-most of the historic residences. Constructed on a hill in 1905, the building first served as the Superintendent's Residence, then the Ranger's Clubhouse, seasonal housing and finally the park Fire Office (Figure X1). Since its initial construction, the building has witnessed several campaigns of additions and renovations, which are evident on the exterior of the building. The site generally slopes down from the west to the east, towards the Visitor's Center.

The building is essentially U-shaped with the front of the house facing east. The building massing is one-and-one-half stories with a partially exposed basement foundation along the south and east elevations. The original walls for the core of the building are stone, as evidenced by the deep window and door jambs. The original stone walls were all stuccoed to conform to the new National Park Service Spanish Style in the 1930s. The 1918 north addition and the 1937 northwest ranger dormitory addition are wood frame walls with stucco. The roof lines changed drastically from a long shed dormer across the east face of the building to cross-gabled roof lines during the 1935 renovation. A majority of the original wood windows have been replaced with aesthetically inappropriate and inefficient single-pane metal windows.

Exterior Finishes

The cementitious stucco finish is applied in the Spanish style with visible trowel marks and is painted a light yellow color. The stucco is applied over the original exterior stone walls and over wood framing at newer or furred exterior walls, as noted in the 1935 and 1937 drawings. The stucco was originally installed with an integral ochre color in the top coat. This was a much more rich color than the light yellow the buildings are currently painted. It is assumed the buildings were painted to cover stucco repairs.

A majority of the exterior trim appears to be original to the 1935 and 1937 renovation efforts. In 1935, the original 1906 overhangs were removed and the fascia and cornice were constructed to match other WICA park buildings built in the 1930s. Similar cornice details and horizontal wood siding in the gables were used throughout the buildings (Figure X2). Exterior trim is painted with a matte latex paint and the siding is an opaque stain.



Figure X2. Front entry typical eave trim detail.
Note the small section of missing stucco. (SRJA 2014)

Stone Foundation and Stone Terrace

The native stone foundation is veneered over the original sandstone foundation. According to a 1936 Superintendent's report, "A small crew worked most of the month on the addition to the ranger's clubhouse, placing a stone foundation and starting the framework. Most of the old stonework around the entire building was veneered with new stone to make this structure conform in general appearance to the other buildings in this area."[7] This stone is set just proud of the original stone foundation and is slightly battered, creating a beveled stone splash where

[7] November and December, 1936, WICA Superintendent's Monthly Reports.

the foundation meets the stucco walls along the perimeter of the building (Figure X3). The foundation and terrace stone is laid in a random ashlar pattern.



Figure X3. Stone foundation detail. (SRJA 2014)

Windows and Shutters

All of the historic wood windows have been removed and replaced, except for those in the dormitory addition (Windows 111 – 115), Window 110 and Windows 202 and 203 in the attic. All other wood sashes were removed during a previous renovation. Window openings on the main part of the building retain their 1935 painted wood frames with a simple bead and cast stone or stucco sills (Figure X4). The remaining historic wood window jambs and heads are in varying states of deterioration. The many layers of paint are peeling, exposing the wood to further deterioration. The wood sills are clad in pre-finished aluminum, which is likely to conceal deterioration. Painted storm windows are currently installed, as are a set of interior aluminum sash. The painted finish on the storm windows is oxidizing and is unsightly. There are no visible lintels above the windows. Historic windows on the first floor were 1/1 double-hung, while the windows on the second floor were all 4/4 double-hung.



Figure X4. Window 104 Detail. This is typical for the first floor window openings. (SRJA 2014)

Windows in the dormitory addition on the first floor (Windows 111 through 115) and the two attic windows are not protected by storm windows and are in very poor condition (Figures X5 and X6). The sash hangers from earlier storm windows are visible at the heads of the windows.



Figure X5. Window 112 in the dormitory addition. (SRJA 2015)



Figure X6. Window 112 Detail. Note the wood deterioration and the original storm window hangers at the top. This is a typical condition for the dormitory windows. (SRJA 2015)

Only the second floor gable windows on HS-04 were designed in 1935 to have rustic board and batten painted shutters installed, as seen in Historic Figures 22, 23 and 24.[8] Windows which were designed to have shutters included 100, 101, 102, 200, 201, 202, and 203. It does not appear from the historic photographs that the first floor shutters were installed, but the second floor windows clearly had shutters by 1937. The date they were removed is unknown. These are significant character defining features that are now missing.

Roofing

The existing roofing for HS-04 is of asphalt shingles that appear to be in good condition overall and was not showing evidence of water infiltration at the time of the survey in January 2015 (Figure X7). The roof was installed in July 2000. The exact material is not specified in the files. It appears to be of similar material to the other roofs in the historic housing area. The roof ventilation is discussed in the Attic portion of this report.

The original roofing material was wood shingles, as evidenced through the historic photographs. These were removed in 1982.[9] The current asphalt shingle roof is at least the second installation.

K-style aluminum gutters and downspouts are all painted. The downspouts are corrugated rectangular sections. Many of the downspouts have deteriorated or missing paint. The roof is installed with closed valleys. Prefinished metal flashing is exposed at the chimneys and at the roof edges. Gutters from the c. 1936 renovation appear to be consistent with other standard box style gutters that were installed on the buildings constructed during that period.

[8] 1935 Drawings
[9] Maintenance Department Files



Figure X7. Roof Detail. (SRJA 2014)



Figure X8. Roof Detail. (SRJA 2014)

East Elevation

The east elevation serves as the primary entry with the raised stone terrace along this entire elevation (Figures X8 – X19). The 1906 front porch was demolished in 1935 and the existing stone and concrete terrace was constructed at that time. The east façade of the building was stuccoed in 1935 in order to mask the native stone walls. The east facing wood framed gable on the second floor was also constructed during this time period.

The native stone walls of the front terrace are slightly battered and have several drainage openings through the wall to allow the sloping concrete terrace to drain (Figures X9 – X11). The stone terrace is in good condition overall. There are small sections of missing or deteriorated mortar throughout the stone terrace walls and the stone is covered with biological growth. There is no handrail on the terrace stairs nor a guardrail installed at the terrace walls, as required by current building code (Figure X12). Walls are less than 42-inches in overall height above the concrete porch floor. The concrete porch floor is beginning to craze and is dirty and does not appear to have a sealant installed. Horizontal cracking along the east terrace wall at the north side is apparent in the mortar, which may indicate some shifting in this section of the wall. The stucco wall is cracked in multiple locations where it meets the concrete porch slab for the entire length of the east terrace.



Figure X9. Front steps and terrace detail.
Note the brush growing too close to the foundation. (SRJA 2014)



Figure X10. Front terrace detail.
Note the drainage holes in the wall for the front porch. (SRJA 2014)



Figure X11. Front terrace detail. (SRJA 2014)



Figure X12. Front terrace stone wall and concrete porch detail. (SRJA 2014)

There are two entries on the east façade. The primary entry is Door 100/1 (Figures X13 – X14). The recessed front entry surrounding Door 100/1 was furred-out to accommodate a covered entry and small roof to highlight this door. There is a large stone threshold at the front entry. Also, the east wall of the 1918 north addition, which is wood frame, was also furred out to mimic the thicker stone walls surrounding Door 109/3 (Figures X15 – X16). Both entry doors were specified as existing doors to remain on the 1935 drawings. It is assumed the oak multi-lite beveled glass door likely dates to the 1906 construction, while the paneled single-lite door in the north addition likely dates to the 1918 construction. Door 100/1 is in good condition, with the finish showing signs of wear. Door 109/3 is in fair condition, requiring wood repair and painting. The hardware is oxidizing. This door has a built-up wood threshold that requires replacement (Figure X17). This may have been built-up to match the height of the existing storm door. Both doors are obscured by painted storm doors.



Figure X13. Front Door 100/1 surround. (SRJA 2014)



Figure X14. Front Door 100/1 detail. (SRJA 2014)



Figure X15. North front Door 109/3 surround. (SRJA 2014)



Figure X16. North front Door 109/3 detail. (SRJA 2014)



Figure X17. North front Door 109/3 sill detail. (SRJA 2014)

The front entry is flanked on the first floor by a pair of matching large window openings infilled with storm windows. A pair of small wood double-hung windows is centered in the wood-sided gable above. A window air conditioning unit is installed in the southernmost window. This window was likely replaced in the 1987 renovation. The storm window installed in the north window needs a new screen and requires painting. The windows have a white jamb liner, which contrasts with the painted brown trim. The 1935 drawings indicate there was wood flower box designed to be installed under the windows, which does not appear in any of the early photographs after the renovation had been completed.



Figure X18. East gable Window 201. Note the visible white jamb liner. (SRJA 2014)

The central stone chimney is visible on this elevation. While an early chimney was located here, this stone on this chimney dates to the 1937 renovation. The chimney is used to vent the fireplace. The other two terra-cotta flues are capped with sheet metal. The northern-most cap is held in place with what appears to be a concrete block (Figure X19). It is difficult to review the condition of the chimney from grade, but the stone appears to be in good condition, requiring only cleaning and potentially some spot repointing. The chimney cap mortar wash should be inspected.



Figure X19. Center chimney detail. Note the concrete block holding down the metal chimney cap on the north flue. Photograph taken from the west, looking east. (SRJA 2014)

The northern-most and southern-most downspouts along the east elevation drain to grade. The south downspout drains between the concrete steps and the stone foundation (Figure X3). This will increase deterioration of the mortar and requires a downspout extension. The center downspout that collects from the small roof above the front door drains to the concrete terrace (Figure X13). Typically, this would not be recommended, but this condition represents a very small amount of water.

The wood siding in the gable and trim throughout this elevation is in need of minor repairs and repainting (Figure X18). There are several minor stucco cracks and spalled areas throughout the east elevation that will require repairs. There are some shrubs growing just north and east of the terrace that need to be removed before damage to the stone foundation occurs. Overall, the east elevation is in good condition.



Figure X20. South Elevation. (SRJA 2014)

South Elevation

The south elevation is a secondary elevation and is highly visible from the public right-of-way (Figure X20). This façade has an exposed stone foundation at the southeast corner with one small window on the east side of the foundation and a bulkhead basement access towards the west side of the elevation. Grade rises to the west and meets the first floor level at the west end of the building. This entire first floor exterior wall is constructed of stone that has been stuccoed. There is a large 1/1 window opening at the southeast corner. A large bay with oblique walls is centered on the façade. The east and west walls of the bay contain 1/1 window openings and the south-facing wall contains a pair of 1/1 window openings. A smaller window opening is located above the bulkhead door. This window is currently an aluminum sliding window, though the original configuration is unknown and is not visible in the historic photographs. A wood-sided gable is centered above the eastern portion of the main building. This gable was constructed

during the 1935 renovation. A small double-hung wood window is centered in this second floor gable. A small wood louver is installed above the window at the ridge, though it is not visible from the attic, so whether or not it is open for ventilation is unknown at this time.

The wood bulkhead door covers the stair to the basement (Figure X21). This bulkhead can be seen in historic photographs of the building, as well as in the 1935 drawings. The access appears to have been constructed the same time as the basement foundation for the kitchen portion of the building. This stair has stone side walls topped with concrete and poured concrete steps (Figures X22 - X23). The lintel supporting the opening into the basement is a very large piece of sandstone (Figure X23). The bulkhead door is made of tongue and groove wood boards. The sill plate and the ends of the door are buried in grade and are in poor condition (Figure X24). The concrete wash at the top of the foundation is cracked. The interior of the stone bulkhead walls need spot repointing.

The overhead electric service and meter are mounted to the south elevation just left of Window 106. A hose bibb is located just left of the bulkhead door. A plastic dryer vent is located just above the bulkhead door. The dryer vent is missing louvers. An antenna is mounted in the corner between the bay window and the bulkhead. Cable or telephone wiring extend through the frame of Window 104 and runs exposed along the exterior wall. The downspout on the west side of the bay window discharges very high above the ground and too close to the foundation. The downspout at the back of the bay also discharges too closely to the foundation and needs an extension. A pipe that exits the south wall just above the foundation has left a large hole in the wall (Figure X25).



Figure X21. South Elevation. (SRJA 2014)



Figure X22. South elevation bulkhead door. (SRJA 2014)



Figure X23. Bulkhead door stone lintel. (SRJA 2014)



Figure X24. Bulkhead door deteriorated concrete wash and wood trim. (SRJA 2014)



Figure X25. South elevation. Hole through wall for some type of pipe that requires removal and infill. (SRJA 2014)

A bush or tree is beginning to grow along the foundation of the bay window that needs to be removed, and another is growing adjacent to the bulkhead door.

There are small sections of missing or deteriorated mortar on the foundation and the stone has spots of biological growth. The wood siding in the gable and trim throughout this elevation is in need of minor repairs and repainting. There are several minor stucco cracks that will require repairs. There are some shrubs growing just north and east of the terrace that need to be removed before damage to the stone foundation occurs. Overall, the south elevation is in very good condition.



Figure X26. West side of the building with the concrete driveway and courtyard. (SRJA 2014)

West Elevation

The west elevation features a paved concrete driveway and courtyard area (Figures X26). The U-shaped floor plan is expressed on this side of the building. Only the first floor is visible from this side of the building. The foundation is concealed by grade and the surrounding concrete drive and courtyard. The courtyard has a slab drain in the center, although the staff does not know where this drains and no drawings have been located for this installation. The courtyard and driveway was installed in 2006 as part of a larger renovation project.

The rear entry into the kitchen is located in the south section of the building (Figures X27 and X28). This Door 105/1 opening has a painted wood frame with a transom window. The transom has been covered over on the interior with the kitchen ceiling being furred down. This door opening appears to be a window in early photographs of this elevation (Figures 9 and 10 in the Introduction). First a shed and then a garage addition were constructed along this wall in the early 20th century and were removed in the mid-20th century at an unknown date (Figures 7, 9, 16, 19 and 23 in the Introduction). This door in its current configuration likely dates to the 1935 or 1937 renovation. This door is protected by an aluminum storm door on the exterior. There are dozens of tiny cracks and widespread crazing in the stucco on this elevation, especially near grade. The joint between the stucco wall and the concrete driveway is not in good condition, allowing water to infiltrate the stucco finish and the stone foundation wall.



Figure X27. HS-04 West elevation, south kitchen wing. (SRJA 2014)

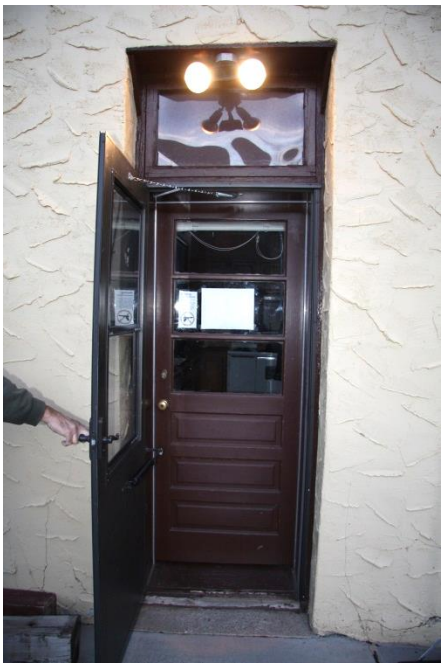


Figure X28. HS-04 South kitchen entry Door 105/1. Note that the transom is blocked on the interior due to the lowered ceiling in the kitchen. (SRJA 2014)

The south kitchen wing is topped with a rectangular stone chimney (Figure X29). This chimney location is early, as it can be seen in photographs pre-dating the 1930s renovations. The chimney stone was replaced during the 1935 renovation. This chimney does not appear on the interior of the building, except for a faint outline of an old stovepipe in the west wall of basement Stair 110. The chimney is no longer used for ventilation and the terra-cotta flue is capped with sheet metal.



Figure X29. HS-04 West chimney. (SRJA 2015)

The south wall of the courtyard has only a single Window 107, which is located above the kitchen sink (Figure X30). This opening is wide and contains a sliding aluminum storm window. The original configuration of the wood window before it was removed is unknown. This wall once contained an entry door and a large 1/1 double-hung window, as seen in historic photographs (Figures 9 and 10). A large stone protrudes near the courtyard floor, which may be the threshold of the original door in this location. This wall was likely reconfigured during the 1935 or 1937 renovation, as well. The stucco-clad stone wall must have undergone a lot of alterations to infill the old openings and create this smaller central opening. This wall has a numerous hairline cracks in the stucco, especially close to grade.



Figure X30. HS-04 West courtyard south wall. The red arrow points to the protruding stone which is likely an old stone threshold from and earlier door this location. (SRJA 2014)

The west courtyard wall contains three windows (Figure X31). The south Window 108 and north Window 110 are original to the construction of the 1906 home. Window 109, in the center, was added during the 1937 bathroom renovation. Windows 108 and 109 wood sash have been removed and replaced with interior aluminum sash. Window 110 retains its original wood sash (Figure X32). This may be the only wood sash left in an early window opening. This window is not protected with a storm window and is in overall deteriorated condition, showing signs of

wood decay, missing paint and need for new glazing. The stucco wall is filled with small cracks and the sill on Window 110 is chipped. The back side of the central stone chimney can be seen from this elevation. Several roof vents for plumbing and attic ventilation can be seen along the west roof. This is expected, since roof vents would be unsightly on the front of the building. The downspout in the northeast corner of the courtyard could be directed towards the center drain.



Figure X31. HS-04 West courtyard wall. (SRJA 2014)



Figure X32. HS-04 West courtyard Window 110. (SRJA 2014)

The west courtyard north wall contains a double-hung wood Window 111 and the porch hood over the entry into the ranger's dormitory (Figure X33). This is the southern wall of the 1937 dormitory construction. The Door 112/1 and hood may be original to this time period or was constructed shortly thereafter (Figure X34). While the original drawings for this addition show a window in this location, it is possible that changes were made during construction. Regardless, this porch hood is a significant feature of the exterior of the building. The gabled roof and decorative cornice and brackets are characteristic of the 1930s residential design found throughout the park and the detail remains in very good condition. A small downlight is installed in the tongue and groove board soffit. The stucco surrounding the door is in poor condition, with sections cracked or missing. Where the stucco is missing, the metal lath is exposed and is rusting. Door 112/1 is protected with a wood screened door that appears to be original to the opening. Window 111 is an original wood double-hung window in fair condition and is missing the wood storm window.



Figure X33. HS-04 West courtyard north wall. (SRJA 2014)



Figure X34. HS-04 West courtyard entry hood. (SRJA 2014)

A large diameter PVC pipe extends from the concrete slab adjacent to the north wall, near the west corner. This pipe supposedly is tied to the foundation wall below and was added for cross ventilation in the crawl space. This was likely installed when the concrete courtyard was re-

poured in 2006; and, while it may be effective, it is not fitting for the historic character of this property.

The west wall of the dormitory wing contains a pair of double-hung wood Windows 112 (Figure X35). These windows are not protected by storm windows and are in poor condition, exhibiting signs of wood decay, missing paint and need for new glazing (Figures X5 – X6). The wood-sided gable above contains a single small 4/4 double-hung window that is in deteriorated condition (Figure X36). Window 202 appears to be an original 1937 window and is not protected with an exterior storm window. The surrounding wood siding and the wood louver above are in good overall condition, requiring only painting.



Figure X35. HS-04 West dormitory wall. (SRJA 2014)



Figure X36. HS-04 West dormitory gable. (SRJA 2014)

The west stucco wall has an abundance of small cracks and hairline crazing. Many of these cracks create a pattern, concentrated where the vertical wood studs are installed. This is prevalent on this west elevation, as well as on the north side of this addition. The explanation for this systemic stucco deterioration is unknown, but could be caused by one or more factors. The interior of this building is not conditioned. The lath could have a faulty attachment to the wood studs. The stucco could be too thin. The stucco could be deteriorating due to increased moisture infiltration. The stucco deterioration is worse near grade. The grade does slope towards this addition. There is a lot of brush growth directly adjacent to the foundation. The grade is above the top of the foundation wall along this side of the building and needs to be lowered. An application for a potential project was found in the Maintenance File for a large renovation project for HS-04. A portion of this project included:

> *Inadequate site draining on the south and west side of the building is causing damaged and deterioration of the wood framed walls and exterior stucco. An existing swale that extends around the south and west side of the structure will be excavated deeper to improve drainage away from the building. Rotten wood elements will be repaired or replaced in-kind and stucco will be repaired and painted. Exterior wood trim will be painted. A large pine tree in the rear lawn area has loose bark and a hollow center will be removed to protect the building from damage if the tree should blow down.* [10]

Photographs of this area clearly indicate the intention was for the west and north sides of the house to be re-graded, not the south, as stated in the application. It is not clear if this work was done. This work was to be performed by maintenance staff.

The wood trim on the west elevation is in relatively good condition and requires only painting.

[10] Maintenance Department Files, Rehabilitate Historic Quarters HS-4, Categorical Exclusion Form. May 4, 2006.



Figure X37. HS-04 North elevation of the dormitory addition. (SRJA 2014)

North Elevation

The north elevation of the building contains the 1937 dormitory addition and the 1918 north addition (Figures X37 and X44). The north elevation of the dormitory has two double-hung wood 1/1 Windows 113 and 114. These windows are not protected by storm windows and are in poor condition, exhibiting signs of wood decay, missing paint and need for new glazing (Figures X38 – X39). The stucco wall is in overall deteriorated condition, with prevalent crazing throughout, as discussed above. The foundation vent centered on the wall is very small (Figure X42). Its screen is partially detached and clogged with debris. The exposed concrete foundation is in fair condition with a lot of paint over-spray. Grade along this dormitory elevation is too high and the brush and growth is too close to the foundation and must be removed. The northwest and northeast downspouts are too short and need to be extended to drain further away from the foundation (Figures X40 – X41).



Figure X38. HS-04 North elevation window detail. (SRJA 2014)



Figure X39. HS-04 North elevation window detail. (SRJA 2014)



Figure X40. HS-04 North elevation downspout discharge and overgrowth at foundation. (SRJA 2014)



Figure X41. HS-04 North elevation downspout discharge at foundation and overgrowth. (SRJA 2014)



Figure X42. HS-04 North elevation foundation vent detail. Note the over-spray of the paint on the concrete foundation. (SRJA 2014)

The east side of the dormitory addition contains a single wood double-hung Window 114, which is not protected by a storm window and is in poor condition, exhibiting signs of wood decay, missing paint and need for new glazing (Figure X43). The stucco wall has several small cracks. The exposed foundation transitions to stone along this wall. The stone is in relatively good condition, but is missing mortar and has extensive biological growth.

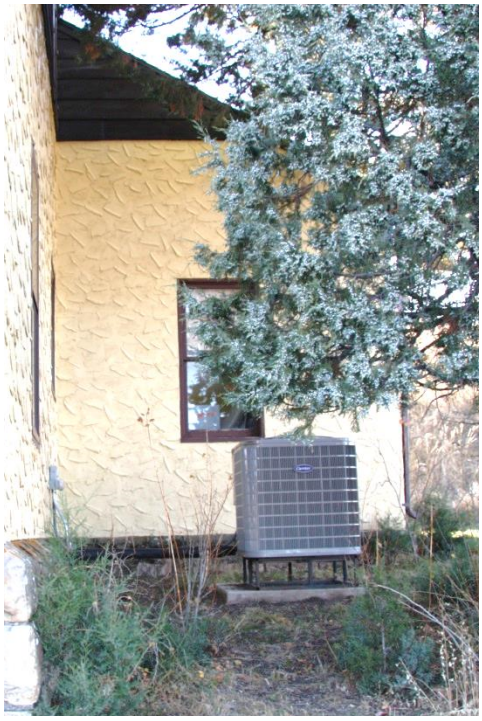


Figure X43. HS-04 East elevation of the north dormitory addition. Note the exposed stone foundation starts here. (SRJA 2014)

The north wall of the 1918 addition contains two window openings 116 and 117 (Figures X44 – X45). These openings are both missing their sash and contain only the aluminum windows. The stucco wall is in good condition, with minor cracking throughout. The wood-sided gable at the second floor contains a single small 4/4 double-hung window in deteriorated condition. Window 203 appears to be an original 1937 window and is not protected with an exterior storm window (Figure X45). The surrounding wood siding and the wood louver above are in fair overall condition, requiring only painting. The exposed stone foundation is in good condition with spots of missing mortar and is covered with biological growth. The condensing unit for the heat pump sits in this corner, elevated on a pad. Brush and other growth along the stone foundation walls is growing too close to the stone foundation.



Figure X44. HS-04 North elevation of the 1918 addition. (SRJA 2014)



Figure X45. HS-04 North elevation of the 1918 addition. (SRJA 2014)

Existing Conditions – Interior

Basement Existing Conditions

The unfinished basement consists of two primary spaces and several partially-accessible and inaccessible crawl spaces. The footprint of the basement and crawl spaces is approximately 2,800 gross square feet. The first floor structure is exposed above these spaces, as are the plumbing, electrical and mechanical systems. The finish floor in Rooms 001, 002 and 003 is concrete. The basement is lit throughout with fluorescent lighting.

Historic photographs and the early drawings of the house indicate there were once two exterior bulkhead entrances into the basement, both of which were located along the south side of the house. The eastern-most access was removed prior to the 1937 renovation. The western-most access remains. The date of the existing interior stair construction is unknown, but likely dates to the 1937 renovation. The basement was reportedly used as a laundry facility and it is discussed on a sketch plan in the mid-1930s to move the laundry to the first floor. The March 1937 WICA Superintendent's Monthly Report mentions the completion of the basement excavation and installation of furnace. This work may correspond with the large foundation wall reinforcing visible throughout the interior of basement Rooms 002 and 003.

Room 001 contains a wood stair to the first floor (Figures B-1 – B-9). This room is approximately 17'-10" by 12'-0" with a floor to underside of joist height of only 6'-6 1/2." Wood floor joists are exposed above. The rubble stone walls are exposed throughout this room and appear to have been constructed to accommodate a full basement. The stone is in overall good condition, requiring only spot repointing. The walls have been coated with some type of whitewash that has started to deteriorate.

In the southwest corner, along the west wall, paint shadows in a greenish hue show the outline of an early winding staircase in the existing stair location (Figure B-2). This stair would have been very steep with narrow treads and low headroom clearance.

Room 001 is used primarily for storage. There is a small laboratory set up in the northwest corner that contains a small drying oven and room for sample preparation. A small hole in the west wall near the stairs contains debris and low voltage wiring (Figure B-4). This may indicate a hollow area under the adjacent concrete driveway and needs to be further explored. The debris appears to be a Zonolite type of insulation that is filtering out of the wall above. This material needs to be tested for potential asbestos.

It is possible that the opening that now exists between Rooms 001 and 002 did not originally exist, but was likely added when Room 002 was excavated. This is evidenced in the rough stone opening at the north and south ends. This was likely a monolithic full height stone wall when it was originally constructed.



Figure B-1. Room 001 Looking South. (SRJA 2014)



Figure B-2. Room 001 Looking West at paint shadows of earlier winding staircase. (SRJA 2014)



Figure B-3. Room 001 Looking West. (SRJA 2014)



Figure B-4. Room 001 Looking West through foundation wall. Debris filtering through the wall appears to be the Zonolite insulation from the walls above. This material needs to be tested for potential asbestos. (SRJA 2014)



Figure B-5. Room 001 Looking Northeast. (SRJA 2014)



Figure B-6. Room 001 Looking East. (SRJA 2014)



Figure B-7. Room 001 Looking East into eastern portion of basement. (SRJA 2014)



Figure B-8. Room 001 Looking South towards door to bulkhead stair. (SRJA 2014)



Figure B-9. Room 001 Looking South into bulkhead stair. (SRJA 2014)

Rooms 002 and 003

Rooms 002 and 003 are located in the eastern portion of the basement (Figures B-10 – B-18). This area contains the furnace and large central stone chimney foundation. This portion of the basement appears to have first been structured to be a crawl space, as evidenced by the interior foundation retaining walls. Historic drawings indicate there was another basement bulkhead or access along the south wall. It was narrower and shorter in length than the western-most bulkhead. This may have just been a smaller crawl space access or was perhaps an early coal chute and may have been located where the basement Window 001 is now installed (see Appendix B, WICA 1043 for a photograph of the bulkhead door at this location).

Room 002 is approximately 33'-11" by 13'-0." Room 003 is approximately 36'-2" by 13'-8." The spaces are open to one another, separated only by the central chimney and the overhead 10"x10" beam.

The interior retaining walls were likely constructed when the basement was excavated to contain the furnace around 1934. These retaining walls span the entire length of the south wall, the east wall and the north wall, as well as a portion of the west wall of Room 003. The retaining wall height varies, but is approximately 3'-6" to 4'-10" high. The basement only contains a single Window 001. The basement window is one of the few remaining historic wood sash in the house

and is in good condition. The opening between Room 001 and 002 was likely constructed c. 1934, as well.

There is a floor drain located in the southeast corner of Room 003. A portable dehumidifier was draining into the floor drain during the January 2015 site visit. Supplemental posts and beams to support the first floor framing have been installed in Room 003. The furnace and water heater are located in the north end of Room 002.

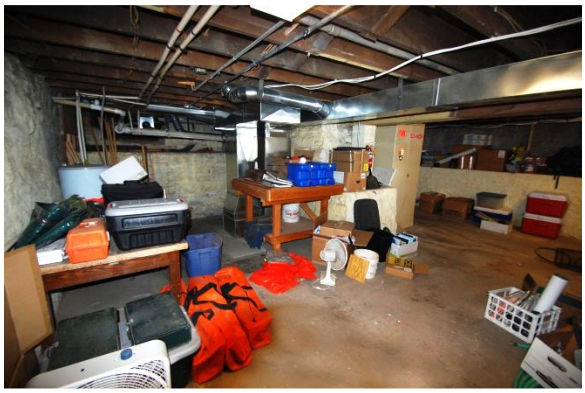


Figure B-10. Rooms 002/003 Looking Northeast. (SRJA 2014)



Figure B-11. Rooms 002/003 Looking East. (SRJA 2014)



Figure B-12. Room 002 Looking West towards Room 001. (SRJA 2014)

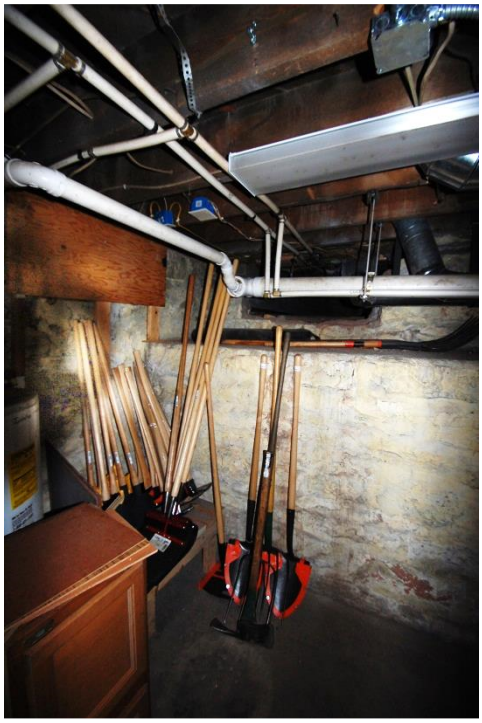


Figure B-13. Room 002 Looking north towards Crawl Space 004 opening. (SRJA 2014)



Figure B-14. Room 002 Looking east at stone and brick chimney. (SRJA 2014)



Figure B-15. Room 003 Looking north towards stone chimney and foundation. (SRJA 2014)



Figure B-16. Room 003 Looking southeast towards Window 001. (SRJA 2014)



Figure B-17. Room 003 Looking north towards Crawl Space 005 access. (SRJA 2014)



Figure B-18. Room 003 at beam end looking northwest. (SRJA 2014)

Crawl Spaces 004, 005 and 006

A small crawl space, south of Room 002, is located under the bay portion of the first floor dining room. Crawl Space 004 in located north of Room 002 and is accessible from a small opening in the wall. A concrete reinforcing footing can be seen running along the west wall in this crawl space. Plumbing related to the bathrooms is run through this space. Wood posts here were originally resting on concrete pads; there is now a substantial gap between the bottom of the posts and the pads. This is discussed further in the Structural Section of this report.

A major rehabilitation project occurred in 2006. The scope of work was extensive, and a portion of the project included the stabilization of the flooring in the warehouse, or dormitory addition. The Categorical Exclusion Form states the following:

> *Deterioration of the structural wood elements has caused the floor in the warehouse area to settle extensively…There is currently no access under the floor in this area, so one of the foundation vents will be enlarged for this purpose. The wood floor in the warehouse area will be leveled and stabilized. Any rotten wood floor joists will be replaced in kind. The warehouse storage room walls and ceilings will be repainted after cracks in plaster are repaired. Interior wood trim will be stripped and re-stained.* [11]

The work was to be conducted by park maintenance staff using cyclic maintenance funds. No further record of this work has been found in the files. It is possible that the steel beam reinforcing found in the crawl spaces dates to this period.

Crawl Spaces 005 and 006 are accessible through an opening at the north end of Room 003. Crawl Space 005 is beneath the 1918 north addition. This addition was constructed with a stone foundation, which has been dug-out on the interior (Figures B-19 – B-25). The battered stone and dirt walls support the upper structure. Supplemental wood and steel posts and beam are installed in the east/west direction in this space and are discussed in the structural portion of this report. The first floor joists above are insulated, though some of the insulation has fallen to the ground. Crawl Space 006 is only visible from the tunnel along the south wall. From here, only a small amount of the crawl space below the dormitory can be seen. The first floor framing above is not insulated.

[11] Maintenance Department Files, Rehabilitate Historic Quarters HS-4, Categorical Exclusion Form. May 4, 2006.



Figure B-19. Crawl Space 005 Looking East towards center wood post. (SRJA 2015)



Figure B-20. Crawl Space 005 Looking southeast corner. (SRJA 2015)



Figure B-21. Crawl Space 005 Looking southeast into corner. (SRJA 2015)



Figure B-22. Crawl Space 005 Looking south at old foundation wall. (SRJA 2015)



Figure B-23. Crawl Space 005 Looking south at steel post. (SRJA 2015)



Figure B-24. Crawl Space 005 Looking west at steel post. (SRJA 2015)



Figure B-25. Crawl Space 005 Looking northwest towards center post and tunnel to Crawl Space 006 in the background. (SRJA 2015)

Crawl Space 006 is accessed through Crawl Space 005 by a hand-dug tunnel through the dirt. Only the tunnel portion of 006 is accessible, the remainder of the area is too shallow for access. The same steel beam and posts from 005 continue along the south wall of 006. Some of the plumbing for the Bathroom 111 above is visible from this location.



Figure B-26. Looking west into Crawl Space 006. (SRJA 2015)



Figure B-27. Looking south at beam support between Crawl Space 005 and 006. The trench to 006 is on the right side of the photograph. (SRJA 2015)



Figure B-28. Looking southwest into Crawl Space 006 trench. (SRJA 2015)



Figure B-29. Looking north in the Crawl Space 006 trench. (SRJA 2015)



Figure B-30. Looking south towards supplemental steel beam and posts. The wood access behind these steel posts leads to Crawl Space 004. (SRJA 2015)



Figure B-31. Crawl Space 006 Looking west along the steel beam and trench. (SRJA 2015)



Figure B-32. Crawl Space 006 Looking west. (SRJA 2015)

First and Second Floor Existing Conditions

Introduction

The HS-04 Fire Office Building has undergone substantial renovations since it was originally constructed in 1905 as the home for the first superintendent. Since 2000, the building has served as the Fire Office for park staff. Although the building has been utilized as office space for the past fifteen years, it still retains much of its earlier residential characteristics and scale.

Early photographs of the home show a native stone exterior with a wrap-around screened front porch. The home originally had hipped roofs and a small dormer on the east roof. In 1918, a three room addition was constructed on the north side of the house. At the same time, the small dormer on the east-facing roof was replaced with a large shed dormer with windows. In 1935, another major renovation was undertaken to convert the home into a home for the rangers. The roof lines were transformed from hipped to gabled, the screened front porch was replaced with a raised stone terrace along the east elevation and the roof overhangs were cut back flush with the house. The entire house was covered in stucco. In 1937, a large ranger's dormitory addition was constructed to the northwest corner of the house and a portion of the basement was excavated. Two bedrooms and a staircase were added to the second floor in 1987, when the building was used as a seasonal residence for park staff. The original 1905 stone residence can still be recognized by the thick exterior and interior plastered stone walls.

The basement is unfinished and contains three rooms and several crawl spaces. The first floor now contains thirteen rooms and is approximately 2,783 gross square feet. The finished portion of the second floor contains only three rooms and is approximately 414 gross square feet. Presently there are between six and fifteen staff working in the building, depending upon the season.

Major Renovations

Besides the major renovations and expansions in 1918, 1935 and 1937, other notable major projects include the following. A full summary can be found in the Timeline of Major Events and Alterations Section of this report. :

- 1932 new two car garage addition at the west side of the kitchen
- 1952 wood double-hung windows replaced. This was likely part of the overall insulation project occurring throughout the historic housing area. This contract does not specifically mention windows in HS-04 being replaced, but it does mention installing fiberglass insulation in the exterior walls and in the attic.
- 1957 redecorate interior.
- 1980 storm doors and windows installed. Installed solar hot water system.
- 1982 removal of existing wood shingle and reroofed with asphalt shingles for the first time.

- 1985 electrical systems updated and new electric baseboard heaters installed.
- 1987 construct 2 bedrooms, 2 closets, hallway on second floor and new staircase to the second floor.
- 1991 install wood/coal furnace.
- 1993 tested for lead based paint.
- 1997 lead based paint abatement project. Interior trim removed for off-site stripping. Interior walls encapsulated. Basement stair reconstructed. Front door refinished. New ceiling fans installed and other electrical upgrades.
- 2000 re-roofed and new gutters and downspouts. Northern Great Plains Fire Office moved into the building.
- 2006 west concrete patio removed and replaced. Excavate at perimeter of dormitory. Stabilize and level floor in dormitory. Wood rot repair. Remove pine tree in back yard. Replace water supply piping and waste and vent piping. Renovate bathrooms. Remove solar water heater system. Install new smoke detectors.

Room 100

Office Room 100 currently serves as office space for four to five staff (Figures 1-1 – 1-8). This room once served as the living room of the house when the building was first built and the recreation room for the rangers when the building was later remodeled. The room is rectangular at approximately 25’-0” by 14’-4”. The room is separated from the Conference Room 102 by a cased opening which once had glass French doors installed and is also open to Office Room 101 on the north side. The central focus of the room is the large stone fireplace along the west wall. Trim in this room was removed and lead based paint was stripped off-site and reinstalled in the original locations. The baseboard was not removed as it did not contain the lead paint when it was tested. The window jambs were stripped on site.



Figure 1-1. Room 100 Looking North. (SRJA 2014)



Figure 1-2. Room 100 Looking South. (SRJA 2014)

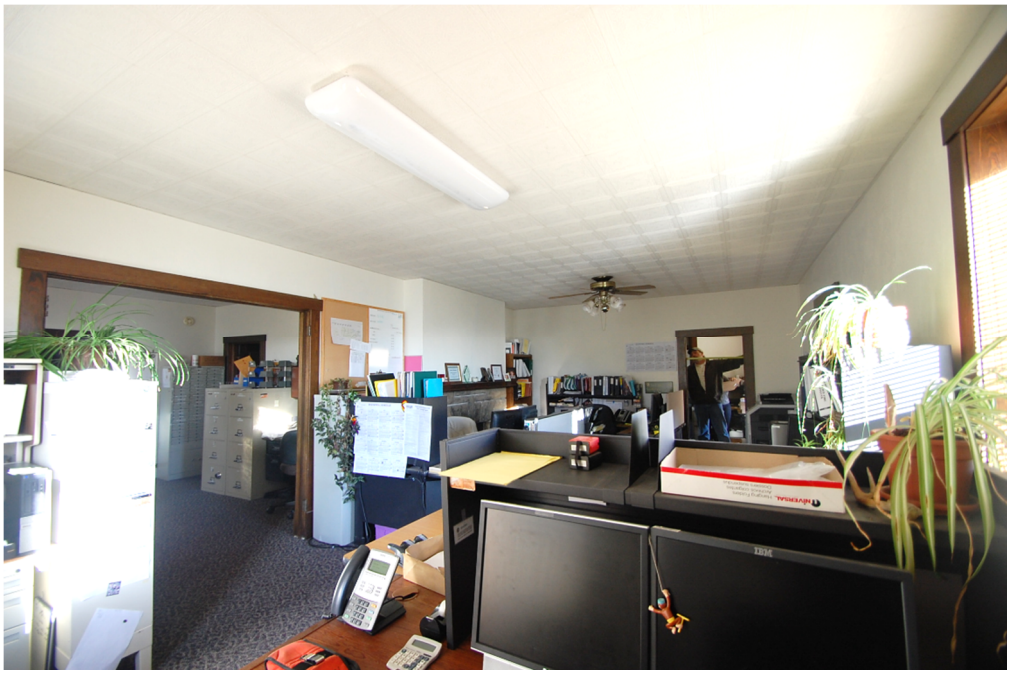


Figure 1-3. Room 100 Looking Northwest. (SRJA 2014)



Figure 1-4. Room 100 Fireplace Detail. (SRJA 2014)

This room has witnessed many renovations through the years, including the construction of the wall dividing Room 100 and 101. The walls are plaster and the ceiling is covered with modular acoustic tiles. The ceiling height is only 8’-9”, indicating that the ceiling is furred down from its original 10’-0” height. This was likely done during the 1987 building renovation. The ceiling may be furred to disguise additional wood framing used for the new second floor rooms, or it may have been furred for cosmetic reasons.

Millwork throughout the room appears to be painted and stained pine and may date to the original construction of this building. The trim is very simple flat profile with eased edges. The painted baseboard is flat with a very tall shoe molding (Figure 1-5).The interior stained window casings are slightly splayed with flat trim and a bull-nosed stool (Figure 1-8). The original wood window sash are missing and have been replaced with a contemporary aluminum sash, as discussed in the Windows section of this report.

The front Door 100/1 appears to be stained oak (Figure 1-6). This door likely dates to the original 1905 construction and has a brass lockset with a decorative knob and thumb-turn. Hinges are brass ball-tipped. The 1935 drawings indicate this was an existing door that was to be reused in this location. The exterior finish of the door was refinished in 1997.

Lighting is a contemporary ceiling fan and fluorescent fixtures. The floor is carpeted and the substrate is an unknown wood material. There are several metal floor registers to supply air throughout the room, as well as electric wall-mounted baseboard heaters. Data outlets and electrical receptacles are placed throughout the room to serve the staff.

The stone fireplace is along the west wall and is capped with a simple wood mantel with some circular button detailing. The mantel appears to be pine and is in good condition. The cut stone fireplace surround with jack arch is in good condition, but the stone is soiled from smoke. There is currently a fireplace insert installed at an unknown time. This matches another insert in HS-03. Park staff is unaware if this insert is in usable condition. There has not been any information found to indicate when the last time the chimney was cleaned. The hearth is constructed of earthen-colored oversized bricks set in a basket weave pattern. Aside from the cosmetic dirt, the masonry surround and hearth are in good condition. The original fireplace was rebuilt during the 1937 renovation to include a new furnace flue.[12]



Figure 1-5. Room 100 Millwork. Note the simple baseboard with the tall shoe molding.

[12] March, 1937. Superintendent's Monthly Report.



Figure 1-6. Door 100/1. (SRJA 2014)



Figure 1-7. Door 100/1 Hardware. (SRJA 2014)



Figure 1-8. Window 102 Interior jamb detail.
Note the side jambs are slightly splayed. (SRJA 2014)

Room 101

Office Room 101 was originally part of Room 100. During one of the early renovations of the building, the south wall was constructed to divide the room. Room 101 is currently serving as office for one to two staff and is approximately 11'-4" by 14'-4" (Figures 1-9 – 1-11). This room has one window in the east wall and two door openings with no doors (one on the north wall and the other on the south wall). To access the hall, office and restroom at the north end of this section of the building, occupants must cross through this room. There was once a door opening in the north side of the east wall that led to a bathroom. This was infilled during an earlier renovation. The ceiling in this room is almost ten feet in height.

The walls and ceiling are plaster. Three corners of the room and the ceiling have a painted wood quarter round trim installed where the west and south walls were added or altered over the years. This trim likely hides the joints between the added walls and original plaster. Millwork throughout the room appears to be painted and stained pine, some of which may date to the original construction of this building. The trim is very

simple flat profile with eased edges. The painted baseboard is flat with a very tall shoe molding. The interior window casings are slightly splayed with flat trim and a bull-nosed stool. The original wood window sash are missing and have been replaced with a contemporary aluminum sash, as discussed in the Windows section of this report.

Door opening 101/1 has a glass transom and may have been an early side entry door before the north addition was constructed (Figure 1-9). The jambs are very deep, as this wall was once an exposed stone exterior wall and the sides of the jambs are slightly splayed to match the window openings.

Lighting is a contemporary ceiling fan. The floor is carpeted and the substrate is an unknown wood material. There is one metal floor register to supply air in the room and an electric wall-mounted baseboard heater. Data outlets and electrical receptacles are placed throughout the room to serve the staff.

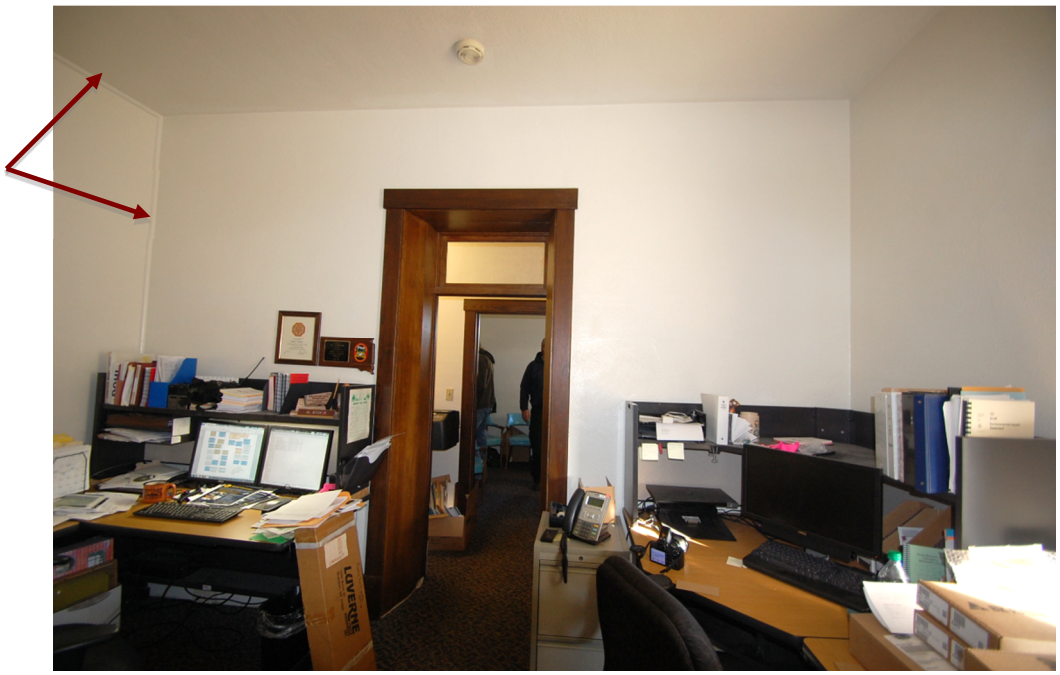


Figure 1-9. Room 101 Looking North. Note the wood quarter round trim in the corner and at the ceiling. (SRJA 2014)



Figure 1-10. Room 101 Looking east. (SRJA 2014)



Figure 1-11. Room 101 Looking south. (SRJA 2014)

Room 102

Room 102 currently serves as a conference room and file storage (Figures 1-12 – 1-19). This was once the dining room when the building was used as a residence. The room is approximately 19'-8" by 13'-0" and is essentially rectangular with a projecting bay with forty-five degree corners at the south end of the room. The ceiling is approximately 8'-9"

in height, indicating that the ceiling is furred down from its original ten foot height. The stair to the second floor was constructed in 1987 and the landing for this stair is framed over the dining room. This is masked by the furred down ceiling.

The walls are plaster and the ceiling is covered with modular acoustic tiles. The walls tested positive for lead based paint and were encapsulated in 1997. Millwork throughout the room appears to be painted and stained pine, some of which may date to the original construction of this building. The painted baseboard is profiled at the top edge and is topped with another stained profiled trim piece. This is the only room in the building with this type of trim installation. A project in 1997 focused on lead based paint mitigation and some of the trim in the room was removed and stripped off-site and reinstalled.

Door trim in this room varies and gives clues to the period for which they were installed. Door openings 102/1 and 102/2 have simple flat trim with decorative profiled plinths, following the Queen Anne Style and likely date to the original construction of the building (Figure 1-16). Door 102/2 is a five-paneled door and has early Queen Anne Style hardware, as well. Door 100/2 has simple flat trim and simple flat plinths, indicating this opening was installed later (Figure 1-17). This door opening was widened during the 1935 renovation to install the salvaged French doors from the north side of Room 100, as indicated in the construction drawings.[13]

The interior window casings are flat trim and a bull-nosed stool (Figure 1-19). The jambs of the windows in the dining room are not splayed, as they are in other parts of the house. The original wood window sash are missing and have been replaced with a contemporary aluminum sash, as discussed in the Windows section of this report.

A built-in stained pine wood cabinet with glass doors and large drawers is installed along the east wall. This cabinet appears to be early to the construction of the building and has an original latch, drawer pulls and hinges. The drawers are a slightly different color, but may have been refinished separately from the cabinet. The interior of the cabinet is vertical beaded board with fixed wood shelving. This cabinet was painted in photographs found in the Maintenance Files, and was stripped as part of the lead based paint mitigation project.

Lighting is supplied by a contemporary ceiling fan and fluorescent ceiling light. The floor is carpeted and the substrate is an unknown wood material. There is a metal floor register in the bay to supply air in the room and a large floor return air vent in the northeast corner of the room. A large electric wall-mounted baseboard heater is located under the bay windows. Data outlets and electrical receptacles are placed throughout the room to serve the staff.

[13] 1934 Construction Documents (See Appendix A).

Two large fireproof file cabinets are lined along the north wall of the room. It is imperative that the first floor framing have the capacity to safely hold these cabinets. This is discussed further in the Structural Section of this report.



Figure 1-12. Room 102 Looking north toward fireproof file cabinet. (SRJA 2014)



Figure 1-13. Room 102 Looking east. (SRJA 2014)

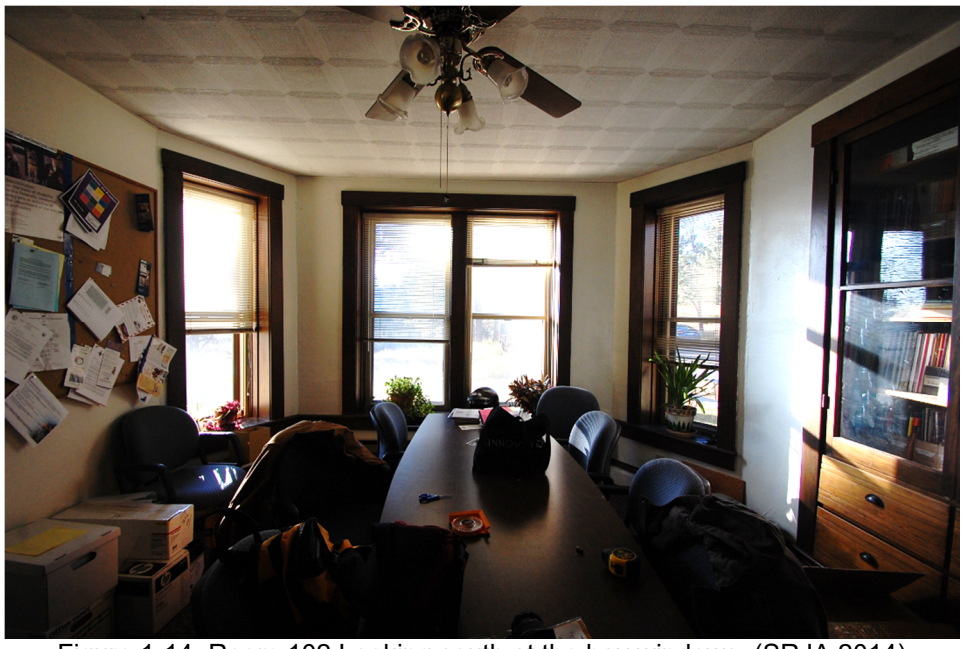


Figure 1-14. Room 102 Looking south at the bay windows. (SRJA 2014)



Figure 1-15. Room 101 Looking west at the built-in cabinet and Door 102/1 to the kitchen. (SRJA 2014)



Figure 1-16. Door 102/1 Trim Detail. (SRJA 2014)



Figure 1-17. Door 100/2 Millwork Detail. (SRJA 2014)



Figure 1-18. Door 102/2 Detail. (SRJA 2014)



Figure 1-19. Room 102 Bay window detail. (SRJA 2014)

Room 103

Room 103 currently serves as office space with one built-in workstation. The room is approximately 10' by 11' and contains the open staircase to the second floor (Figures 1-20 – 1-24). A sketch plan found in the maintenance files[14] indicates that this room served as a bedroom prior to the stair being installed. This room had private access to Bathroom 104. This room remains the only access to that bathroom.

A lead based paint mitigation project in 1997 states to encapsulate the walls, remove baseboard and strip off-site and reinstall.[15]

The walls and ceiling appear to be painted plaster. Millwork in the room is a combination of painted and stained pine. The window in the west wall has simple flat trim, splayed jambs and a bull-nosed stool that matches other window trim in the building. The original wood window sash are missing and have been replaced with a contemporary aluminum sash, as discussed in the Window Section of this report.

Lighting is a contemporary fluorescent ceiling light. The floor is sheet vinyl and the substrate is an unknown wood material. There are two metal floor registers in the room. An electric wall-mounted baseboard heater is located along the west wall. Data outlets and electrical receptacles are placed throughout the room to serve the staff.

The carpeted wood staircase is contemporary and appears to have been constructed in the last 20 years. The detailing is residential in style and does not meet current building code. The spindles are too far apart and the rise of the stair treads is too tall. Headroom at the landing is too low. A small closet is accessible from the north side of the landing (Figure 1-24). The ceiling in the closet is only 5'-9 1/2" tall. A pull chain light fixture provides light in the closet.

[14] Maintenance File for HS-04
[15] Maintenance Department Files.



Figure 1-20. Room 103 Looking north. (SRJA 2014)



Figure 1-21. Room 103 Looking east. (SRJA 2014)



Figure 1-22. Room 103 Looking south. (SRJA 2014)



Figure 1-23. Room 103 Looking west. (SRJA 2014)



Figure 1-24. Closet 103A. Note the low ceiling height at only 5'-9 /2" tall. (SRJA 2014)

Bathroom 104

Bathroom 104 is one of two existing bathrooms to serve the staff. This room is approximately 10'-9" by 5'-0" with a ceiling height of 8'-9". This is a full bathroom with a tub/shower, toilet and vanity sink (Figures 1-24 – 1-29). The baseboard is painted wood and appears to be contemporary with the bathroom renovation. The area incorporating Bathrooms 104 and 113 have witnessed many renovations and alterations to their configurations through the years, with at least three distinct periods and differing layouts. The exact date of the current configuration construction is unknown, but likely dates to the 1987 or 2000 renovation of this portion of the building.

There are two windows in this room. Window 109 is a smaller window opening that was installed during the 1937 renovation to serve a smaller bathroom configuration. This stained pine window jamb and stool does not match the earlier windows in detailing and is not installed plumb (Figure 1-27). Window 110 is an original opening and the simple stained pine trim and stool detailing matches others in the house. Both windows are missing their original sash, which have been replaced with contemporary aluminum sash, as discussed in the Window Section of this report.

The doors and hardware in the Bathroom 104 appear to be of varying vintages. Door 104/1 is a contemporary door and hardware, likely installed within the last 30 years. Closet Door 104/2 is a historic painted wood door, with two flat panels but the hardware dates to several periods. The hardware on the bathroom side of the door has a typical rectangular back plate with an oval knob, typical throughout the first floor (Figure 1-28). The knob matches the knob on Door 102/2. The interior-facing hardware is chrome in the Art Deco Style, consistent with other hardware dating to the 1937 renovation (Figure 1-29). The hinges appear to be brass ball-tipped and are of older vintage, as well. This door and trim was likely salvaged and reinstalled from a previous door location, as this closet likely dates to the 1987 renovation.

The walls and ceiling appear to be either painted plaster or gypsum board and have a knockdown finish texture. Finishes and fixtures in this space are contemporary. Flooring is sheet vinyl. There is one metal floor register in the room and an exhaust fan. Lighting is supplied by a contemporary fluorescent ceiling fixture and a wall light above the vanity. An electric wall-mounted baseboard heater is located along the west wall. Data outlets and electrical receptacles are placed throughout the room to serve the staff.

A walk-in Closet 104A is located on the east side of the room and has the same interior finishes as the bathroom. Lighting is a wall-mounted pull chain fixture.



Figure 1-25. Bathroom 104 Looking north. (SRJA 2014)



Figure 1-26. Bathroom 104 Looking south. (SRJA 2014)



Figure 1-27. Bathroom 104 Window 109 Detail. Note this stool and jamb detailing does not match other windows in the building. (SRJA 2014)

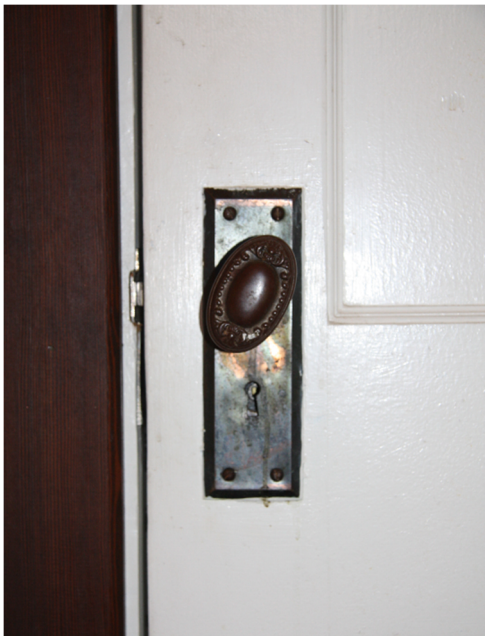


Figure 1-28. Bathroom 104 Door 104/2 hardware on the bathroom side of the door. (SRJA 2014)



Figure 1-29. Bathroom 104 Door 104/2 hardware on interior of closet. (SRJA 2014)

Kitchen 105

HS-04 was designed to serve as a residence and therefore has a full residential kitchen installed (Figures 1-30 – 1-33). The kitchen appears to have always been located in this portion of the house, with the sink in the existing location. The kitchen is approximately 23’ by 13’-7” with a ceiling height of approximately 8’-0.” The ceiling has been furred down in this room for unknown reasons.

Finishes through the room include painted plaster walls, an acoustical tile ceiling and vinyl tile flooring. Cabinets, counters and backsplash appear to have been installed in the 1983 renovation.[16] Lighting is supplied by two fluorescent ceiling fixtures.

A lead based paint mitigation project in 1997 work plan states to encapsulate the walls, strip the window sills above the sink and in the nook (in-house), remove baseboard and strip off-site and reinstall. A photograph also shows the door trim to the basement was stripped.[17]

The only remaining historic millwork includes portions of the baseboard. The back Door 105/1 with three horizontal raised panels and three horizontal lites, appears to be original or early to the building. This door once had a transom expressed on the interior, but the ceiling has been furred down and now covers this feature. It can still be seen on the exterior of the building.

Window 107 opening may be early, but the size and detailing of the window has changed over time, as evidenced in early photographs. The window in this location was once taller, matching the proportions of other windows. The existing radiused plaster jambs matches similar details on the 1935 drawings. The wood window sash are missing and have been replaced with aluminum sash.

The basement stair wall framing projects into the southwest corner of the kitchen. These walls were likely constructed during the 1997 renovation.

A single metal floor vent supplies heat. Outlets and electrical receptacles are placed throughout the room.



Figure 1-30. Kitchen 105 Looking North. (SRJA 2014)

[16] Maintenance Department Files
[17] Maintenance Department Files.



Figure 1-31. Kitchen 105 Looking East. (SRJA 2014)



Figure 1-32. Kitchen 105 Looking Southwest. (SRJA 2014)



Figure 1-33. Kitchen 105 Looking West. (SRJA 2014)

Breakfast Nook 106

The Breakfast Nook 106 is adjacent to the kitchen and accessed through a large arched plaster opening (Figures 1-34 – 1-37). The arched opening may have been constructed in the mid-1930s, as the plans indicate to remove the partition between the breakfast nook and the kitchen. The room shares the same finishes and detailing as the kitchen. The nook is 5'-0" by 12'-0." The original plaster ceiling is exposed in this space with a ceiling height of almost 10'-0." The built-in cabinet in the Dining Room projects into this room and forms the east wall.

Finishes through the room include painted plaster walls and ceiling and vinyl tile flooring. There is a historic pendant fixture hanging from the ceiling that does not contain a bulb, so it is not known if this light fixture functions.

The remaining historic millwork includes the stained baseboard. The five-paneled basement Door 107/1 matches Door 102/1 and appears to be original or early to the building. Door plinths on the breakfast nook side are simple with no detailing, while plinths on the stair side of the door are Queen Anne in detailing and are painted.

Window 106 opening may be early, but the detailing of the radiused plaster jambs matches similar details on the 1935 drawings. Original wood window sash are missing and have been replaced with aluminum sash.

A single metal floor vent supplies heat. Outlets and electrical receptacles are placed throughout the room. A portion of the baseboard along the east wall is missing and there appears to be a capped drain in the floor under the table. This was a location for an earlier washer and dryer which have been removed.



Figure 1-34. Breakfast Nook 106 Looking north. (SRJA 2014)



Figure 1-35. Breakfast Nook 106 Looking east. (SRJA 2014)



Figure 1-36. Breakfast Nook 106 Looking south from the kitchen. (SRJA 2014)

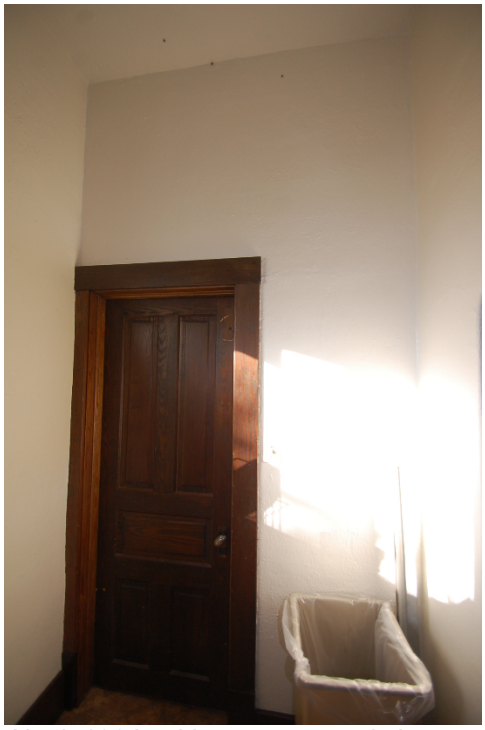


Figure 1-37. Breakfast Nook 106 Looking west towards basement door. (SRJA 2014)

Stair 107

The basement Stair 107 is located in the southwest corner of the kitchen wing of the building (Figures 1-38 – 1-40). This room may have originally been a smaller pantry. Early drawings of this room are either blank with no detail shown, or have a winding stair sketched in. The winding steep stair was constructed at an unknown date and was removed in 1997. This space was expanded sometime in the mid to late 20th century towards the north, into the kitchen, in order to construct a straight-run stair to the basement. An old stovepipe thimble can been seen high on the west wall (Figure 1-39). This probably served an early stove, which was located in this space before the stair was enlarged into the kitchen.

The stair does not meet current code due to the riser at the door, rise/run height and length, and open risers.

The walls and ceiling in this space are painted plaster. A wall light mounted on the east wall lights the room.



Figure 1-38. Existing Stair 107 Looking north and at stair that was removed in 1997. (SRJA 2014 and Maintenance Department Files)



Figure 1-39. Stair 107 Looking north at old stovepipe location. (SRJA 2014)



Figure 1-40. Stair 107 Looking south. (SRJA 2014)

Hall 108

Hall 108 runs east/west in what is referred to at the north addition (Figures 1-41 – 1-44). In 1918 the porch that wrapped this north side of the original house was removed and this addition was constructed to provide space for the growing needs of the Superintendent.

A lead based paint mitigation project description from 1997 has attached photographs that show the paint on the trim and hall cabinet being stripped.[18]

This hall is approximately 3'-6" by 12'-2." The ceiling height is almost ten feet and is sloped on the east end under the attic stairs. The 1937 renovation in-filled the door along the north wall that led to a bathroom. Door opening 112/2 at the west end of the hall is currently boarded over and is not usable. Door opening 101/1 leads to Office 101 to the south. This door has a glass transom above and was originally an exterior door that led to the north porch. Remnants of paint remain on the transom sash. When the north addition was added, this opening became an interior door. Hinges on the north side of the frame indicate there was once a door affixed in this location. Door 109/1 leads to Office 109. This two-paneled stained wood door and frame appear to date to either the 1935 or 1937 renovation, with simple stained pine trim.

The construction date for the built-in cabinet along the east wall is unknown. It is assumed it dates to the 1918 addition. The millwork matches other millwork throughout the first floor. The detailing of the cabinet is unusual in that it may have been salvaged from another location and used here. The lower door sill does not extend all the way under the surrounding door trim on the left side. The interior shelving is cut like it was meant for another location. The finish of the upper and lower doors does not match. This cabinet does not appear on any of the 1930s floor plans, but neither does the built-in cabinet in the dining room. The cabinet may date to the 1918 addition with trim or alterations added during one of the 1930s renovations.

The walls and ceiling are painted plaster. The flooring is carpet over an unknown wood substrate. The wood baseboard is simple and is painted. Door trim in this room is simple with eased edges, matching other stained pine throughout the first floor.

[18] Operation Plan for Lead Abatement in Q-04. Maintenance Department Files. September 9, 1997.



Figure 1-41. Hall 108 Looking East. (SRJA 2014)

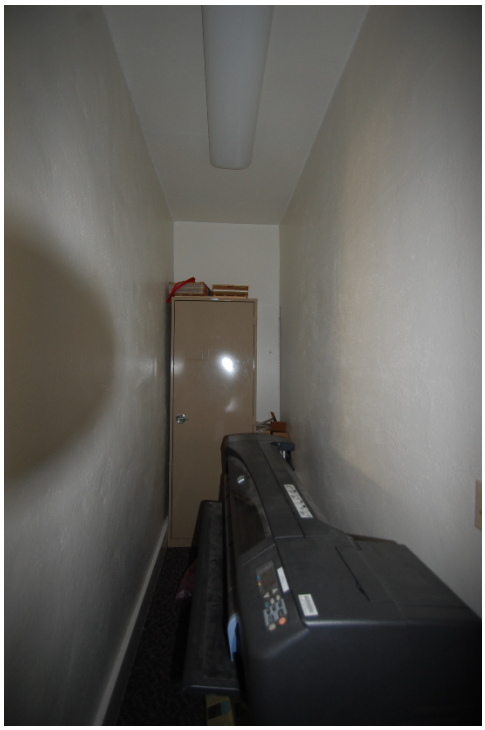


Figure 1-42. Hall 108 Looking West towards in-filled Door 112/2. (SRJA 2014)



Figure 1-43. Hall 108 Detail of built-in cabinet and transom of Door 101/1. (SRJA 2014)



Figure 1-44. Hall 108 Looking east towards built-in cabinet. Note the sill does not extend under the left trim. (SRJA 2014)

Office 109

Office 109 is located within the north addition, constructed in 1918 (Figures 1-45 – 1-50). It is likely that this room, along with Hall 108 were once one larger space. This room contains an exterior door 109/3 that leads to the front terrace, suggesting this was likely an office or other type of gathering space. The dividing wall between Hall 108 and this room were constructed during the 1935 renovation to make this a bedroom. This room also has the only access to Bathroom 111 and the Attic Stair 110. Now used as an office, the room has not changed much since the 1930s. The room is approximately 10'-7" by 12'-6" with a ceiling height of 9'-10." There is a small closet in the southwest corner that has shelving.

The walls and ceiling are painted plaster with a sanded texture. There are many cracks in the plaster ceiling. Millwork is stained pine and painted baseboard. The millwork matches other simple flat millwork throughout the house with no details and eased edges. The doors are pine. The flooring is carpet over an unknown wood substrate.

A lead based paint mitigation project description from 1997 states that the window sill was stripped in-house and the base and window trim were removed and stripped off-site and reinstalled.[19]

Window 118 is missing the original wood sash, which have been replaced with aluminum sash. Door hardware throughout the room varies. All doors have brass ball-tipped hinges. Door 109/3 was an existing exterior door that was indicated to be reused in the 1935 plans. This door has three horizontal panels and a single lite above. Hardware on this door is a combination of what appears to be from 1918 and 1937 (Figures 1-46 and 1-49). The entry Door 109/1 has a combination of hardware from the early period with the oval knob and rectangular back plate on the hall side of the door and brass Art Deco hardware on the office side of the door. Closet Door 109/2 and attic Door 109/4 have hardware dating to the 1937 renovation in the Art Deco Style (Figure 1-50). Hardware for Door 109/3 that leads to the bathroom has the Art Deco hardware with brass on the office side and chrome on the bathroom side.

A single metal floor vent supplies heat under the north window, but is partially obscured by the office furniture. Outlets and electrical receptacles are placed throughout the room. A baseboard heater is located along the east wall but is not easily accessible. Lighting in the room is supplied by a contemporary ceiling fan.

[19] Operation Plan for Lead Abatement in Q-04. Maintenance Department Files. September 9, 1997.



Figure 1-45. Office 109 Looking north. (SRJA 2014)

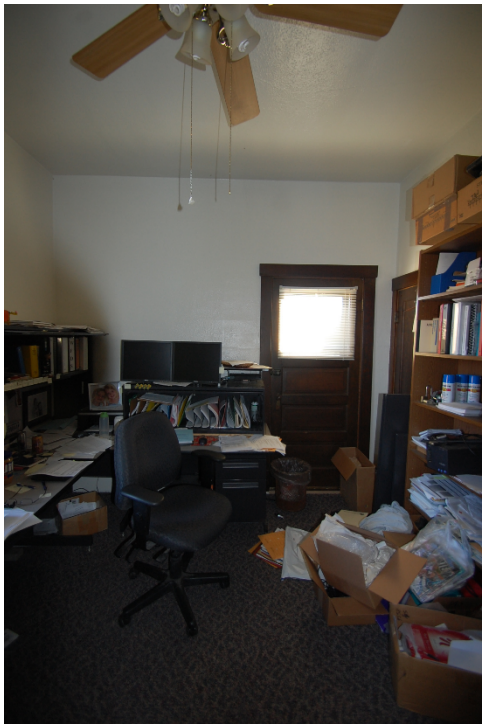


Figure 1-46. Office 109 Looking east at Door 109/3. (SRJA 2014)



Figure 1-47. Office 109 Looking south at the attic stair Door 109/4. (SRJA 2014)



Figure 1-48. Office 109 Looking south at the office entry Door 109/1. (SRJA 2014)



Figure 1-49. Office 109 Detail of Door 109/3 hardware, a combination of the earlier knob with a 1937 back plate. (SRJA 2014)



Figure 1-50. Office 109 Detail of Door 109/1 hardware, consistent with the 1937 renovation. (SRJA 2014)

Attic Stair 110

The Attic Stair 110 is accessed through a door in the southeast corner of Office 109 (Figures1-51 – 1-53). This stair was constructed in 1918 as part of the north addition. Prior to this attic stair, there was an attic stair located more central to the first floor, just north of the fireplace. This is a winding stair with very narrow treads and very steep risers. It is partially covered with a temporary wood structure at the top that can be moved out of the way to access the attic. The door at the bottom of the stairs is not weatherstripped.

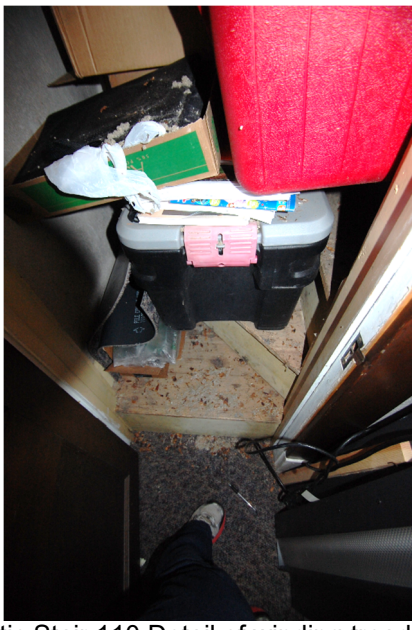


Figure 1-51. Attic Stair 110 Detail of winding treads. (SRJA 2014)



Figure 1-52. Attic Stair 110 Detail of treads. (SRJA 2014)



Figure 1-53. Attic Stair 110 Detail. (SRJA 2015)

Bathroom 111

Bathroom 111 was remodeled to its current configuration in the 1937 renovation (Figures 1-54 – 1-56). The bathroom contains a toilet, vanity sink and shower. The room measures approximately 6'-0" by 5'-2." The ceiling is furred down from the original height of approximately 9'-10" to 7'-3" and has a lay-in acoustical ceiling with acrylic diffuser. The lay-in ceiling intersects the head of the window.

Finishes and fixtures date to several periods of renovations. The walls are a combination of ceramic tile wainscoting and painted plaster with a sanded texture. The painted trim at the window matches other simple flat millwork throughout the house with no details and eased edges. The door is painted. The flooring is vinyl tile over an unknown wood substrate. Window 118 is missing the original wood sash, which have been replaced with aluminum sash.

A single metal floor vent supplies heat along the east wall. A small baseboard heater is located on the north wall under the window. A GFCI receptacle is located near the vanity. A ca. 1937 wall sconce is installed on the west wall adjacent to the medicine cabinet. Overall lighting is provided from a ceiling fixture installed above the lay-in ceiling.



Figure 1-54. Bathroom 111 Looking north. (SRJA 2014)



Figure 1-55. Bathroom 111 Looking east. (SRJA 2014)



Figure 1-56. Bathroom 111 Looking south. (SRJA 2014)

Dormitory 112

The Ranger's Dormitory addition (Room 112) was constructed in 1937 to provide space for up to twelve rangers (Figures 1-57 – 1-64). This room is approximately 25-feet by 33-feet with a ceiling height of 10'-0." This room is currently used for storage and is not accessible from within the main building at this time. The Door 112/1 that once connected this addition with the Hall 108 has been boarded-over and fixed in the closed position. This room is accessible only through the south Door 112/2 from the west courtyard. Very little has changed in this space since its original construction. This room is difficult to photograph and inspect due to the large amount of items currently stored within the space.

The walls and ceiling are painted plaster with a sanded texture finish. The plaster is in fair to poor condition throughout the space, exhibiting prevalent cracking and water staining. Due to this section of the building not being heated for the last several decades, the temperature in this space nearly matches the outdoor temperatures.

The floors are wood strip flooring and appear to be pine. They are in good overall condition but in need of refinishing. Light is prevalent throughout the room due to the six wood double-hung windows. Window trim is different in this space than any other room in the building. The stepped wood trim is simple (Figure 1-63). The windows and interior

millwork in this room are all painted. The baseboard is also a simple painted flat trim with a painted quarter-round shoe molding.

An extensive renovation project for HS-04 was projected in 2006, which was to include the stabilization and leveling of the floor in the dormitory. This proposed work was also to include the stripping of the trim, plaster repairs and painting. This work was proposed to be completed by maintenance staff. It is not clear if any or some of this work was completed.[20]

Door 112/1 serves as the only entry into the dormitory at this time. Original 1937 plans of this space do not indicate a door in this location. In the plans, the only access to this space was through the Door 112/2, which is now concealed. Door 112/1 appears to be either original to the construction of this addition, or it was built shortly thereafter. It is possible that the change was directed during construction for the safety and practicality of having twelve men sleeping in this one space.

Six Art Deco Style flush mount ceiling fixtures provide lighting in the room. These chrome and porcelain fixtures are unique and are original to the construction of this space. A central cloth-wired bulb hangs from the center of the room. Several outlets surround the room, but it is not known if any of the electrical for this space, including the lighting, is in working condition.

The crawlspace below this addition is not insulated; however, the attic above this space is minimally insulated. It is unknown if the walls are insulated.



Figure 1-57. Dormitory 112 Looking southeast. (SRJA 2014)

[20] Rehabilitate Historic Quarters HS-4, Categorical Exclusion Form. Maintenance Department Files. May 4, 2006.



Figure 1-58. Dormitory 112 Looking east at covered Door 112/2. (SRJA 2014)



Figure 1-59. Dormitory 112 Looking south. (SRJA 2014)



Figure 1-60. Dormitory 112 Looking southwest. (SRJA 2014)



Figure 1-61. Dormitory 112 Detail of lights. (SRJA 2014)



Figure 1-62. Dormitory 112 Door 112/1 Hardware detail. (SRJA 2014)



Figure 1-63. Dormitory 112 Interior window detail. (SRJA 2014)



Figure 1-64. Dormitory 112 Millwork and wood floor detail. (SRJA 2014)

Bathroom 113

Bathroom 113 is in the process of being renovated (Figures 1-65 – 1-68). Therefore, only a shower and a washing machine are currently installed. Plumbing has been stubbed for a toilet and sink, but they are not yet installed. This bathroom has undergone many renovations, along with the adjacent Bathroom 104.

The Door 113/1 opening has been altered with new jambs that are not yet finished. This alteration may have been to accommodate a wider door opening, as the original opening was specified to be only 30-inches in the 1937 drawings. A contemporary door and hardware serve this space. The plywood subfloor is exposed at this time and there is no transition provided between the subfloor and the adjacent finished wood floor in the dormitory. Wall and ceiling finishes are gypsum board with a knock-down textured finish.

There are no historic finishes or any significant features in this space.



Figure 1-65. Door 113/1 into Bathroom 113 Looking south. (SRJA 2014)



Figure 1-66. Bathroom 113 Looking South. (SRJA 2014)



Figure 1-67. Bathroom 113 Looking east at toilet plumbing. (SRJA 2014)



Figure 1-68. Bathroom 113 Looking north. (SRJA 2014)

Stair and Hall 200

The existing stair to the second floor occupiable space is located in Room 103. This open stair, constructed in 1987, is a residential style stair and is carpeted with an open railing (Figures 2-1 – 2-2). As discussed earlier, this stair does not meet current code for office space. The stair lands in a small hall on the second floor. Finishes in this space include gypsum drywall and carpeting. There are no historic finishes in this space.

The second floor on the south portion of the building does not communicate with the unfinished attic on the west and north sides of the building.



Figure 2-1. Stair 200 Looking north. (SRJA 2014)



Figure 2-2. Hall 200 Looking East. (SRJA 2014)

Office 201

Office 201 was constructed in 1987 as a second floor bedroom and is approximately 11'-11" by 12'-0" (Figures 2-3 – 2-5). The ceiling in this space slopes on both sides, matching the gabled roof line. The ceiling height in the center of the room is 6'-11," while the knee wall heights are 5'-0." A closet with folding doors is located along the east wall. A small wood double-hung window (Window 201) is centered in the south wall. This window opening does not meet current egress code sizing. An electric baseboard heater is installed under the window. Finishes in this space include painted gypsum drywall, wood trim and carpeting. An exhaust fan in the ceiling circulates cooler air from the first floor through the second floor and the warm air into the attic. There are no historic finishes in this space.



Figure 2-3. Office 201 Looking south. (SRJA 2014)



Figure 2-4. Office 201 Looking north. (SRJA 2014)



Figure 2-5. Office 201 Looking east. (SRJA 2014)

Office 202

Office 202 was constructed in 1987 as a second floor bedroom and is approximately 11'-5" by 13'-9" (Figures 2-6 – 2-9). The ceiling in this space slopes in several directions, matching the gabled roof line. The ceiling height in the center of the room is 7'-1," while the knee wall heights are 4'-10" to 5'-10." A walk-in closet is located on the north side of the room. A pair of small wood double-hung windows (Window 200) are centered in the south wall. These windows do not meet current egress code for residential. Finishes in this space include painted gypsum drywall, wood trim and carpeting. An electric baseboard heater is installed under the window. A window air conditioning unit is installed in the lower sash.

The fly infestation during the November 2014 site visit was heaviest in this space. It was a constant battle to rid the office of the flies. There are no historic finishes in this space.
An exhaust fan is installed in the ceiling to vent warmer air into the attic.



Figure 2-6. Office 202 Looking east. (SRJA 2014)



Figure 2-7. Office 202 Looking south. (SRJA 2014)



Figure 2-8. Office 202 Looking west. (SRJA 2014)



Figure 2-9. Closet 202A. (SRJA 2014)

Unfinished Attic 203

The unfinished Attic 203 is accessed through Stair 110 located in Office 109 (Figures 2-10 – 2-14). This small winding staircase leads to the unfinished attic, which does not have any permanent flooring installed. Exposed first floor ceiling joists form the floor structure, which is obscured with loose insulation. From this open attic space, many of the roof re-framing and alterations that have occurred through the years can be seen. The north gable construction is exposed, as are the roofing changes required when the east flat shed dormer was re-framed into a gable. There are supports installed throughout the attic to strengthen the connections between old and new framing. Evidence of the older chimneys can be seen through the framing and roof sheathing. The brick chimney that serves the main fireplace and basement furnace is visible in the center of the space. The walls for the finished southern portion of the basement are visible, but there is no communication or access between the finished an unfinished spaces. The large hand-built trusses over the 1937 dormitory addition can also be seen.

There is evidence of previous animal intrusion throughout this space, including pine cones and feces strewn throughout the insulation. Flies were also prevalent during the November 2014 site visit. The attic is currently ventilated through two gable louver vents (one at the west end of the dormitory addition and another in the north gable). A third gable louver vent is installed in the south gable, but with the Office 201 installed in this location, it is not clear if this vent is open to the attic. There is no other roof ventilation.

Exhaust fans serving the first floor restrooms also vent directly into the attic and are not attached to roof vents. The ventilation of the exhaust fans located in the second floor offices is not directly apparent from this space, but it is assumed that these also vent directly into the attic.



Figure 2-10. Attic 203 Looking east toward the attic stair. (SRJA 2015)



Figure 2-11. Attic 203 Looking south at center chimney and second floor walls. (SRJA 2015)



Figure 2-12. Attic 203 Looking southwest. (SRJA 2015)



Figure 2-13. Attic 203 Looking northwest towards dormitory roof framing and post. (SRJA 2015)



Figure 2-14. Attic 203 Looking west through dormitory roof truss framing. (SRJA 2015)



Figure 2-15. Attic 203 Looking northwest at back side of the north gable and Window 203. (SRJA 2014)

Existing Conditions - Structural

HS-04 is a wood framed structure with shallow foundations. The original construction and addition on the south portion of the building is a one-and-one-half story structure. The north (dormitory) addition is single story construction. There is a basement area and crawl space below the original structure.

The original building was constructed in 1905. A north addition of two rooms and a bathroom were constructed in 1918. The house was extensively renovated in 1935. In 1937, a Ranger's Dormitory addition was constructed to the northwest corner of the building. During these additions modifications were made to areas of the roof framing.

Basement

Basement 001 under the kitchen was constructed as a full basement when the house was originally built in 1905. Basement 002 and 003 were originally crawl space and were excavated to a greater depth in the 1930s to allow for use. Interior stone retaining walls were constructed in Room 002 and 003 and new posts and girders were installed to support the first floor joists. The basement now exists in Rooms 001, 002 and 003. Crawl Space 004 is open to Rooms 002 and 003. Crawl Space 005 is separated by a stone wall with an access point through the north wall in Basement 003. Crawl Space 006 is under the north dormitory addition.

To accommodate the difference in elevation from the original shallow foundations and the deeper excavated basement, stone retaining walls were constructed two to three feet inward of the original foundation walls. A concrete cap was installed over the soil separating the two. The concrete cap is fractured and there are some cracks in the stone retaining wall. These occur on the east retaining wall however, there is not a substantial offset in the wall at these cracks (Figure S1).



Figure S1. Crack in east stone retaining wall and concrete cap. (SEA 2015)

Modifications were made to the support of the floor joists. There is a girder between Rooms 001 and 002. The girder bears on the stone foundation wall at each end (Figure S2). This was likely added when the opening between Room 001 and 002 was made.



Figure S2. Girder bearing. (SEA 2015)

A 10 x 10 (nominal) wood girder has been added between Rooms 002 and 003. At the south end the girder was originally supported by the foundation wall. A newer 2 ½-inch steel post has been added with wood plates at the top of the post for support. The base of the steel post is only bearing on the concrete slab-on-grade. At the north end, the girder is supported by a 10 x 10 wood post bearing on the foundation wall (Figures S3, S4, and S5).



Figure S3. Steel post supporting wood girder. (SEA 2015)



Figure S4. Top of steel post. (SEA 2015)



Figure S5. Bottom of steel post. (SEA 2015)

The girder appears as if it was salvaged from a roof truss of another structure, because the top of the girder is notched consistent with the way roof trusses are notched to receive diagonal members. There is also a recess with a corresponding hole drilled through the girder. This would be consistent with a roof truss where steel tie rods ran through the top or bottom chords where they are anchored by a steel plate (Figure S6).

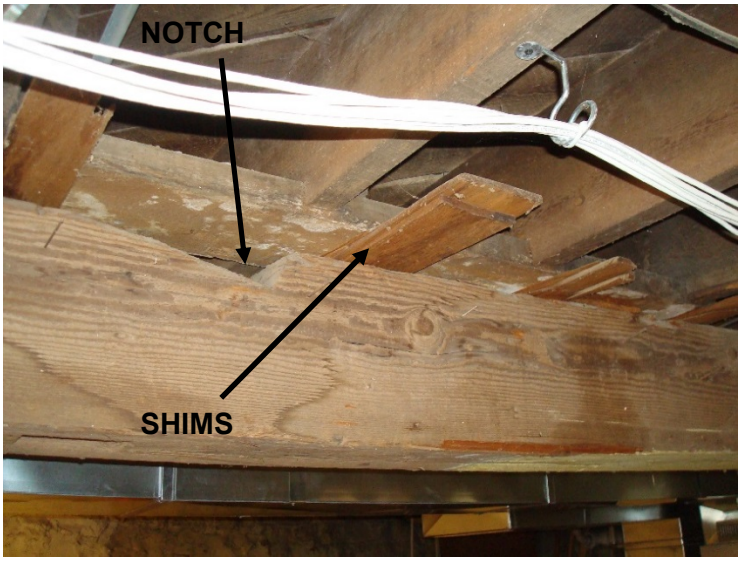


Figure S6. Timber girder notched at top with recess at bottom. (SEA 2015)

Some of the joists over this girder have been extended to reach the girder support point. The splices do not appear to be adequate, because there are thick shims between the joists and the girder. It appears as if an original sill plate was left in place and the shims were installed between this sill plate and the top of the girder (See Figure S6 above).

There is another girder that has been installed running north-south in Room 003. This appears to have been added below the "splices" for support. This girder is 5 ¼" x 7" (actual). It is supported at the south end with a 2 ½-inch steel post and the south end with a 6 x 6 (nominal) wood post. The 6 x 6 wood post bears on a stone pilaster (Figures S7 and S8). This girder does not extend far enough to the south to support the spliced joists next to the girder separating Rooms 002 and 003 (Figure S9). It is possible that the girder has deflected and is transferring load into the lockers at the north end.


Figure S7. Girder and post in Room 003. (SEA 2015)



Figure S8. Post support at north end. (SEA 2015)



Figure S9. Inadequately spliced floor joist beyond end of girder. (SEA 2015)

Crawl Space 004

There is a wood post and wood girders installed running north-south just northwest of the furnace in Crawl Space 004. The girder is a 6 (wide) x 4, supported on a 6 x 6 post (nominal) which is sitting on a concrete pad.

Access to this area was limited. There is a gap between the bottom of the post and the concrete pad. It appears that settlement has occurred below the concrete pad or a bearing plate is missing between the post and pad (Figure S10).



Figure S10. Gap between post and concrete pad. (SEA 2015)

Crawl Space 005

Crawl Space 005 is located under the north portion of the building. This is below the first addition to the building and the Dormitory addition. Portions of the crawl space below the first north addition have been dug out for access, most likely for utility installation or maintenance (Figure S11).

There is a wood girder running east-west in the middle of Crawl Space 005. The girder is supported by different systems. Several locations were observed where the existing foundations are minimal. This consists of rocks stacked up underneath girders. During the trenching of the crawl space for utility installation, wood posts were installed. The posts bear directly on soil with no apparent footing (Figures S12, S13 and S14).



Figure S11. Trench for access in crawl space. (SRJA 2015)



Figure S12. Loose stone pilaster supporting girder. (SRJA 2015)



Figure S13. Post supporting girder. (SRJA 2015)



Figure S14. Post bearing on soil. (SRJA 2015)

At a later date, steel posts were installed to support a steel beam along the south edge of Crawl Space 005. The steel posts bear on concrete blocks similar to patio blocks (Figures S15 and S16).



Figure S15. Steel post supporting steel beam. (SRJA 2015)



Figure S16. Post bearing on concrete patio block. (SRJA 2015)

At the west end of Crawl Space 005 the girder is missing. At this location there is only what appears to be a sill plate. This sill plate is supported randomly with stacked rocks.

There is an opening in the foundation wall between Basement 003 and Crawl Space 005. The stone wall continues above this opening. There is no lintel to support the stone above (Figure S17).



Figure S17. Stone wall above opening. (SRJA 2015)

First Floor

The first floor framing for the first floor was visible in the basement and most of the crawl space areas. Framing primarily consists of 2 x 10s (nominal) at sixteen-inches o.c. The first floor wall framing was hidden from view with finish materials.

Second Floor

The second floor was covered with interior finish material. The framing was not visible.

Attics

The attic spaces were accessed. The attic of the original 1905 construction consists of wood rafters, beams and hip rafters. Some of the roof rafters and hip rafters have been spliced, and some of the splices are not adequate. Along the east facing gable at the northeast valley, one of the rafters extends down towards the original roof framing (Figure S18). The support at this point is not adequate. On the west side, where the main roof meets the dormitory roof, the framing has been modified (Figure S19). There is now a gable roof over the hip roof area.



Figure S18. Inadequate splice of roof rafter at northeast valley. (SEA 2015)



Figure S19. Inadequate support of roof rafter. (SEA 2015)

Along the wall to Rooms 200 and 201 the roof framing has been modified. The extent of modifications and how the modifications were made was not visible to view due to the presence of the stud wall for Rooms 200 and 201 (Figure S20). This is also in an area where roof modifications were made from the original hipped roof to a gable roof. It appears as if these rafters were abandoned as part of the modifications.



Figure S20. Modified roof framing adjacent to Room 201. (SEA 2015)

The roof framing over the north addition consists of robust roof trusses. No structural concerns were noted (Figure S21).



Figure S21. Roof truss framing over warehouse addition. (SEA 2015)

Gaps through the exterior walls were observed through the exterior sheathing. This was located at the west face of the north addition (Figure S22).



Figure S22. Gap in exterior sheathing. (SEA 2015).

Structural Analysis

An area of concern for the Fire Office staff is the location of the two 4-drawer fire rated file cabinets, which are currently located along the north wall in the Conference Room 102. The manufacturer of the file cabinets was Fire Safe. The identification on the file cabinets was FL2000 242059. Fire safe was contacted by phone, and according to Fire Safe customer service, the weight of the file cabinets fully loaded is 886 pounds each. The plan dimensions of the file cabinets are 20-13/16” x 31-9/16” x 52-¾” (actual) tall.

The floor joists supporting the file cabinets are 2” x 9 ¼” net at 16-inches on center. Calculations were performed to approximate the live load capacity of the floor joists. No samples were taken of the floor joists for species identification at the time of the site visit, so a species of Douglas Fir was assumed for structural calculations. Modern values for Douglas Fir #2 were used for the basis of the analysis. Load Reduction Factor Design (LRFD) methodology was used. Based on these assumptions, the live load capacity with the file cabinets in place meets the code required live load capacity for office use.

Existing Conditions – Mechanical, Electrical and Plumbing



Figure MEP01. Fire Offices – HS-4. (SRJA 2015)

Introduction

Henderson Engineers conducted a site visit on January 26th through the 29th of 2015. The existing mechanical, electrical, and plumbing (MEP) systems are consistent with residential equipment found in homes of this size. None of the MEP systems currently installed are original to the structure. The current MEP systems consist of 240/120V electrical distribution system, an indoor forced air fan coil unit with three-ton heat pump condensing unit, supplemental electric baseboard heating, an electric hot water heating system, a domestic water system, and a drain, waste, and venting system.

This historic structure stays open year round and has been utilized as the park Fire Office since 2000. This use is not intended to change in the near future.

Potable and irrigation water is supplied to the park from a remote pumping station. The pumps deliver water to a holding cistern located to the northeast of the site. The stored water is at a higher elevation than the rest of the site. From there the water is gravity fed through a series of water mains to supply the park with potable water and irrigation water.

A series of 4-inch and 6-inch sanitary sewer branches exit the historic structures and gravity drain into a private sewer main system owned by the National Park Service. This private sewer main appears to be routed under the main drive between the visitor's center and the housing area.

The electrical service is supplied to the site by the Black Hills Corporation and is fed from a centrally located, single-phase, pole mounted transformer located on the southwest side of Building HS-06. The electrical service on the secondary side of the transformer is 240/120V, single phase, three wire. The service conductors extend overhead along the service road to supply the buildings with power.

The 2012 International Building Code and the 2011 National Electrical Code (NEC) were used for the evaluation of the MEP systems.

Heating and Cooling Systems

The original heating system is unknown. No heating or cooling system appears on the original 1933 construction drawings.

An electric heating system (Figure M01) has been added throughout the building on the remodel that took place in the 1980s. Living Room 100 currently has a fan powered, wood-burning fireplace that is no longer utilized (Figure M02).



Figure M01. Example of electric baseboard heaters in Dining Room 102. (HEI 2015)



Figure M02. Fireplace in Living Room 100. (HEI 2015)

There was a large central pellet burning heater located in Basement 002 that, in 2010, was replaced with a forced air system. The flue for the pellet burner was abandoned in place. The forced air systems consists of a 3-ton outdoor heat pump condensing unit (Figure M03), an indoor fan coil unit with a direct expansion coil to match the condensing unit (Figure M03), and an auxiliary electric heating coil. The thermostat to control the forced air system is located in Dining Room 102 (Figure M04). The forced air system serves the basement, crawl spaces, and entire first floor excluding t Dormitory 112 and Bathroom 113. The second floor is not supplied by this unit.



Figure M03. Heat pump condensing unit and fan coil unit in Basement 002. (HEI 2015)



Figure M04. Thermostat in Dining Room 102. (HEI 2015)

Supply ductwork is routed in the unfinished basement. Duct mounted, residential style, supply registers condition the basement. Floor mounted supply registers condition the first floor. The forced air system does not supply outdoor air to the building. Supply grilles serving the crawl spaces were all closed at the time of this site observation and none of the supply ductwork within these areas were insulated.

Employees expressed current inadequacies of both the heating and cooling system. Overall the existing heating, cooling, and ventilation systems appear to be in good condition but are inadequate for the building's current use. The system seems to be undersized and/or not properly balanced in both heating and cooling operations. Refer to the treatment recommendations section for additional information.



Figure M05. Example of supply ductwork and supply register. (HEI 2015)

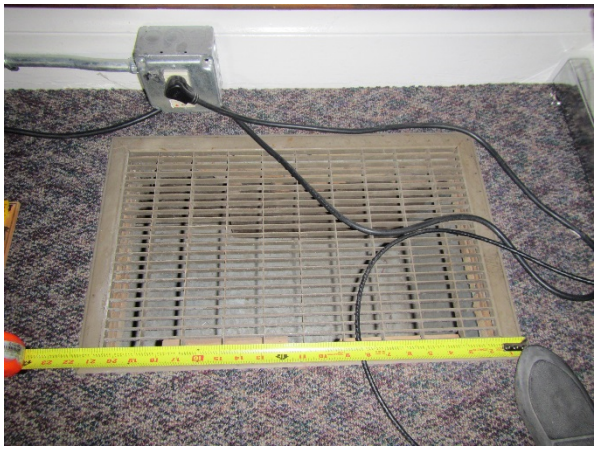


Figure M06. Return grille in Dining Room 102. (HEI 2015)

No makeup air is being provided for the exhaust systems. This creates the potential for outdoor air infiltration and the possibility of moisture and mold problems. Refer to the treatment recommendations section for additional information.

Ceiling fans are installed throughout the first and second floors for general air circulation (Figure M07).

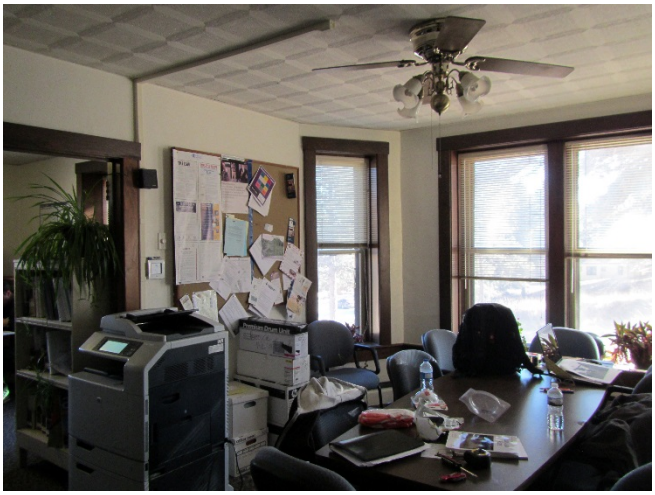


Figure M07. Example of ceiling fan in Dining Room 102. (HEI 2015)

An exhaust hood is located above the stove in the Kitchen 105 and is a residential style hood for air recirculation (Figure M08).



Figure M08. Exhaust hood in Kitchen 105. (HEI 2015)

Breakfast Room 106 has a dryer vent that terminates on the south exterior wall with a broken dryer vent cap (Figure M06). Currently this dryer vent is no longer utilized.



Figure M09. Breakfast Room 106, Dryer vent and termination. (HEI 2015)

Bathroom 104 has a ceiling mounted exhaust fan that is ducted into the attic (Figure M10). Per International Mechanical Code section 501.3, air shall not be exhausted into an attic space. Moisture can potentially build up in the attic creating deterioration and mold problems.



Figure M10. Bathroom 110, Exhaust fan and termination in the attic. (HEI 2015)

Bathroom 111 is currently not exhausted.

Bathroom 113 has a ceiling mounted exhaust fan that is ducted into the attic (Figure M11). Per International Mechanical Code section 501.3, air shall not be exhausted into an attic space. Moisture can potentially build up in the attic creating deterioration and mold problems.

A ceiling mounted electric heater (Figure M12) serves the Basement 001. A floor mounted dehumidifier serves the Basement 003 (Figure M13).



Figure M11. Bathroom 113, Exhaust fan and termination. (HEI 2015)



Figure M12. Electric heater in Basement 001. (HEI 2015)



Figure M13. Portable dehumidifier in Basement 003. (HEI 2015)

A ceiling mounted combination exhaust fan/light pulls air from the first floor into Office 201 (Figure M14). The air is then exhausted into the attic space. The fan is controlled by a wall switch. The fan appears to not provide sufficient conditioning of this space. A window mounted air conditioning unit serves Office 201 (Figure M15) but was not installed during the January 2015 site visit.

A ceiling mounted combination exhaust fan/light pulls air from the first floor into Office 202 (Figure M16). The air is then exhausted into the attic space. The fan is controlled by a wall switch. The fan appears to not provide sufficient conditioning of this space. A window mounted air conditioning unit currently serves Office 202 (Figure M17).



Figure M14. Exhaust fan in Office 201. (HEI 2015)



Figure M15. Window air conditioning unit in Office 201. (SFJA 2014)



Figure M16. Exhaust fan in Office 202. (HEI 2015)



Figure M17. Window air conditioning unit in Office 202. (HEI 2015)

A 4-inch PVC vent is believed to serve as a natural ventilation outlet for the inaccessible space below Dormitory 112 (Figure M18).



Figure M18. Vent below Dormitory 112. (HEI 2015)

Plumbing Systems

Prior to entering the building, the water main splits to serve the potable water system in the building and the irrigation system on the site. The irrigation system pipe is routed above grade, through an anti-siphon pressure vacuum breaker, routes back below grade, and then runs to concealed sprinklers (Figure P01). The irrigation system is controlled by manually operated shut off valves. The potable water system is routed below grade and enters the building in the south side of Basement 001.



Figure P01. Irrigation vacuum breaker. (HEI 2015)

The original plumbing system, shown on the construction drawings from 1935, consisted of domestic water piping system and a drain, waste, and vent piping system. A water heater could not be verified in the 1935 construction drawings. The interior plumbing system original to the structure was removed and replaced with an all plastic piping system during the remodel that took place in 1980s.

Overall the existing water systems and drain, waste, and vent systems appear to be in good working order and are adequate for the building's intended use.

The basement (Rooms 001, 002, and 003) plumbing systems consist of the domestic water entry, water heater (Figure P02), exposed water piping, and exposed drain, waste, and vent piping. The first floor plumbing systems serve Bathroom 104, Kitchen 105, Bathroom 111, Bathroom 113, and exterior hose bibbs (Figure P03). The second floor plumbing systems consists of exposed vent piping within the attic space.



Figure P02. Domestic electric water heater in Basement 001. (HEI 2015)



Figure P03. Wall hydrant. (SRJA 2014)

A ¾-inch copper domestic water line enters the building through the basement wall on the south side of Basement 001 (Figure P04). The domestic water goes to a domestic water meter, located in the southwest corner of this room.



Figure P04. Domestic water entry in Basement 001. (HEI 2015)

The water then exits the meter to service the building plumbing fixtures. All domestic water piping downstream of the copper water entry is cross-linked polyethylene (PEX) with brass fittings (Figure P06). The domestic entry does not currently have a building backflow preventer installed. Per IPC section 608 a backflow preventer should be installed.

The sanitary waste piping is polyvinyl chloride (PVC) drain, waste, and vent (Figure P06). The first floor plumbing fixtures and floor drain located in Basement 003 drain into a 4-inch sanitary waste system that is routed below the basement floor and exits the building. Sanitary cleanouts are located in lines prior to the line going beneath the basement floor. The 4-inch building sewer is routed to the private sewer system owned by the National Park Service.



Figure P05. Example of water and sanitary piping system in Basement 003. (HEI 2015)

Bathroom 104 has a counter mounted lavatory, white vitreous china water closet, and a molded fiberglass tub (Figure P06).



Figure P06. Lavatory, water closet, and shower in Bathroom 104. (HEI 2015)

Kitchen 105 has a two-compartment white enamel sink (Figure P10).



Figure P07. Enamel two-compartment sink in Kitchen 104. (HEI 2015)

Bathroom 111 has a counter mounted lavatory, white vitreous china water closet, and a tiled shower (Figure P08).





Figures P08 and P09. Lavatory, water closet, and shower in Bathroom 111. (HEI 2015)

Bathroom 113 has a water closet flange, washing machine connections, and a molded fiberglass shower (Figures P10 – P13).



Figures P10 – P13. Lavatory, water closet flange, washing machine connections, and shower in Bathroom 113. (HEI 2015)

Storm water from the roof is drained via exterior gutters and downspouts. The downspouts are either daylighted at grade with corrugated plastic pipe or routed to below grade (Figure P14).





Figure P14 - P16. Example of gutter and downspout systems (top left), exterior area drain (top right), and area drain discharge (bottom). (HEI 2015)

Electrical and Lighting Systems

The electrical service is supplied to the property by the Black Hills Corporation and is fed from a centrally located, single-phase, pole mounted transformer located on the south side of Building HS-06. The electrical service on the secondary side of the transformer is 240/120V, single phase, three wire. The service conductors extend overhead along the service road to a power pole located south of the HS-04 building. The service conductors from the power pole are routed overhead to a weatherhead located on the south side of the building and then in conduit to a meter on the exterior of the building (Figures E01 and E02). The meter is an Elster digital meter (Figures E02 and E03). From the meter the conduit runs down the wall and pokes through the wall to terminate in the electrical service panelboard.



Figure E01. Service conductors at weatherhead located on the south side of the building. (HEI 2015)



Figure E02. Exterior electrical service meter located on the south side of the building. (HEI 2015)

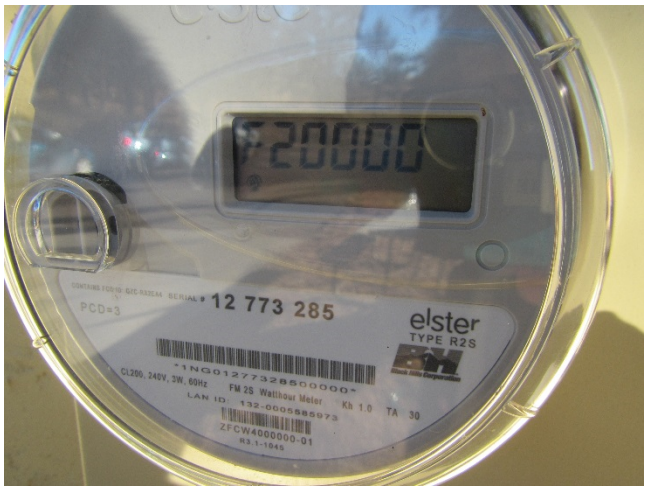


Figure E03. Exterior electrical service meter located on the south side of the building. (HEI 2015)

The electrical service panelboard is located on the south wall of Basement 001 (Figure E04). It is a 225A, 42-pole, 240/120V single phase, 3 wire panelboard with a 225A main circuit breaker (Figure E05). This panelboard serves all of the power loads in the building including lighting, HVAC, kitchen equipment and general purpose receptacles. The panelboard is manufactured by Westinghouse and appears to be in good condition but the code required clearance is not met. The date of installation could not be confirmed.



Figure E04. Electrical service panelboard located in Basement 001. (HEI 2015)



Figure E05. Electrical panelboard located in Basement 001. (SRJA 2014)

The electrical distribution and wiring is consistent with methods used in residential construction. The distribution wiring is a combination of NM cable and conductors run in conduit. Most of the branch circuit conductors coming out of the main panelboard are exposed NM cable. Overall the existing electrical system appears to be in good working order but will need to be modified to meet commercial building electrical code requirements.

General use grounded duplex receptacles are installed throughout the building. There are ungrounded duplex receptacles located in Dormitory 112. Ground Fault Circuit Interrupting (GFCI) receptacles are installed in the restrooms, laundry area and kitchen.

There is an Econotrol Peak Demand Controller next to the panelboard in Basement 001 that appears to be connected, but is not in use (per the park maintenance staff). The basement heater located in the ceiling of Basement 001 did not appear to have a local disconnect switch but it is within sight of the panelboard which is acceptable per the NEC. The electric water heater located in Basement 002 does not have a local disconnect switch. The furnace located in Basement 002 has a circuit breaker disconnect switch located on the unit. The portable dehumidifier located in Basement 003 has a cord and plug disconnecting means. The condensing unit is located on the exterior of the north side of the building. It has a non-fusible pullout disconnect switch and weatherproof, GFCI receptacle mounted on the wall behind the unit.

There is a data network located in Basement 003 on the south wall (Figure E06).



Figure E06. Data network located in Basement 003. (HEI 2015)

The interior lighting throughout the building is a mixture of incandescent, compact fluorescent and fluorescent fixtures that appear to be in good condition. The exterior door on the south side of Dormitory 112 has a recessed porcelain socket in the overhang above the door which does not have a lamp and the fixture has a wasp nest in it. The exterior door on the southwest side of the building has a 2-lamp motion sensor halogen flood light fixture mounted above door. The exterior lighting is controlled by a toggle switch located on the interior side of each door. The exterior doors on the east side of the building do not have any exterior lighting.

Basement 001, 002 and 003 have 2-lamp fluorescent strip lights mounted to the floor joists throughout the spaces (Figure E07). The two fixtures in Basement 001 are controlled by three-way toggle switches located at the top of the basement stairs and next to the door leading to the exterior. The fixtures located in Basement 002 and 003 are controlled together by a single toggle switch.



Figure E07. Light fixture located in Basement 001, 002 and 003. (HEI 2015)

Living Room 100 has a five-blade ceiling fan with screw base compact fluorescent lamps (Figure E08) and a two-lamp fluorescent surface mounted wraparound fixture (Figure E09). Each fixture is controlled separately by a toggle switch.



Figure E08. Ceiling fan located in Living Room 100. (HEI 2015)



Figure E09. Fluorescent surface mounted wraparound light fixture located in Living Room 100. (HEI 2015)

Office 101 has a four-blade ceiling fan with a four-lamp glass shade light kit and screw base compact fluorescent lamps (Figure E10). It is controlled by a toggle switch.



Figure E10. Ceiling fan located in Office 101 and Dining Room 102. (HEI 2015)

Dining Room 102 has a four-blade ceiling fan with screw base compact fluorescent lamps similar to the Dining Room light fixture (Figure E10) and a two-lamp fluorescent surface mounted wraparound fixture similar to the Living Room light fixture (Figure E09). They are both controlled by a single toggle switch.

Office 103 and Hall 108 each have a two-lamp fluorescent surface mounted wraparound fixture similar to the Living Room light fixture (Figure E09). They are individually controlled by single toggle switches.

Closet 103A has an incandescent porcelain socket fixture. It is controlled by a pull chain.

Bathroom 104 has a 2-lamp fluorescent surface mounted wraparound fixture similar to the basement light fixture (Figure E07) and an incandescent decorative two-glass shade bathroom mirror sconce (Figure E11). Both fixtures are controlled by a single toggle switch.



Figure E11. Decorative sconce located in Bathroom 104. (HEI 2015)

Closet 104A, has an incandescent glass jar sconce mounted next to the door (Figure 12). It is controlled by a toggle switch.



Figure E12. Light fixture located in Closet 104A. (HEI 2015)

Kitchen 105 has a two-lamp fluorescent surface mounted wraparound fixture similar to the Living Room light fixture (Figure E09) and an incandescent vintage glass globe fixture (Figure E13). The glass globe fixture is filled with dirt and debris. Both fixtures are controlled separately with toggle switches.



Figure E13. Light fixture located above the kitchen sink. (HEI 2015)

Breakfast Room 106 has an incandescent chain hung pendant fixture but is missing a lamp and glass shade (Figure E14). It may be controlled 'on/off' with the Kitchen 105 fluorescent strip.



Figure E14. Light fixture located in Breakfast Room 106. (HEI 2015)

Stair 107 has an incandescent glass globe sconce (Figure E15). It is controlled by a toggle switch.



Figure E15. Light fixture located in Stair 107. (HEI 2015)

Office 109 has a five-blade ceiling fan with screw base compact fluorescent lamps similar to the Living Room ceiling fan (Figure E08). It is controlled by a toggle switch.

Closet 109A does not have any lighting installed.

The Attic and Attic Stair 110 do not have any lighting installed.

Bathroom 111 has a 1x4 fluorescent strip fixture mounted above a suspended ceiling grid. There are two, 2x2 acrylic prismatic lens panels in the grid to let the light shine through (Figure E16). There is a decorative glass shade incandescent sconce located next to the bathroom mirror (Figure E17). The sconce has a rocker switch integral to the fixture. The fluorescent strip is controlled by a toggle switch.



Figure E16. Light fixture located in Bathroom 111. (SRJA 2014)



Figure E17. Decorative sconce located in Bathroom 111. (SRJA 2014)

Dormitory 112 has six incandescent surface mounted fixtures (Figures E18) and one incandescent pendant fixture located in the center of the room (Figure E19). The vintage surface mounted fixtures date to the 1937 construction and are controlled separately from the center pendant fixture by toggle switches. The pendant fixture is missing a glass cover.



Figure E18. 1937 light fixture located in Dormitory 112. (HEI 2015)



Figure E19. Pendant light fixture located in Dormitory 112. (SRJA 2014)

Bathroom 113 has two, 2-lamp fluorescent strip lights mounted to ceiling similar to the basement fixture (Figure E07). They are controlled together by a single toggle switch.
Stair 200 has a 2-lamp fluorescent surface mounted wraparound fixture similar to the living Room light fixture (Figure E09). It is controlled with the fixture in Office 103 at the bottom of the stairs by two, 3-way switches located at the bottom and top of the stairs.

Office 201 has a 2-lamp fluorescent strip light mounted to the ceiling similar to the basement fixture (Figure E07). It is controlled by a toggle switch.

Closet 201A does not have any lighting installed.

Office 202 has an incandescent exhaust fan/ light fixture (Figure E20). The fan and lights are controlled by separate toggle switches.



Figure E20. Combination exhaust fan/light fixture located in Office 202. (HEI 2015)

Closet 202A has a recessed square incandescent light (Figure E21). It is controlled by a toggle switch.



Figure E21. Light fixture located in Closet 202A. (HEI 2015)

The exhaust fans located in Bathrooms 104, 109 and 113 and Offices 201 and 202 all have toggle switch disconnects. There are window units in Offices 201 and 202 and both have plug and cord disconnects.

The telephone service runs in conduit underground to the telephone demark point located on the northeast side of the exterior of the building (Figure E22). A TV satellite antenna was installed on the southwest side of the building exterior but the satellite dish has since been removed (Figure E23). A coax cable extends from the antenna pole down the wall and pokes through the wall above grade.



Figure E22. Telephone service entrance located on the northeast exterior of the building. (HEI 2015)



Figure E23. TV satellite pole located on the southwest exterior of the building. (HEI 2015)

Fire Alarm Systems

The fire alarm system consists of hardwired smoke detectors with battery backup located in Room 101 and in the hallway on the second floor.

Fire Protection Systems

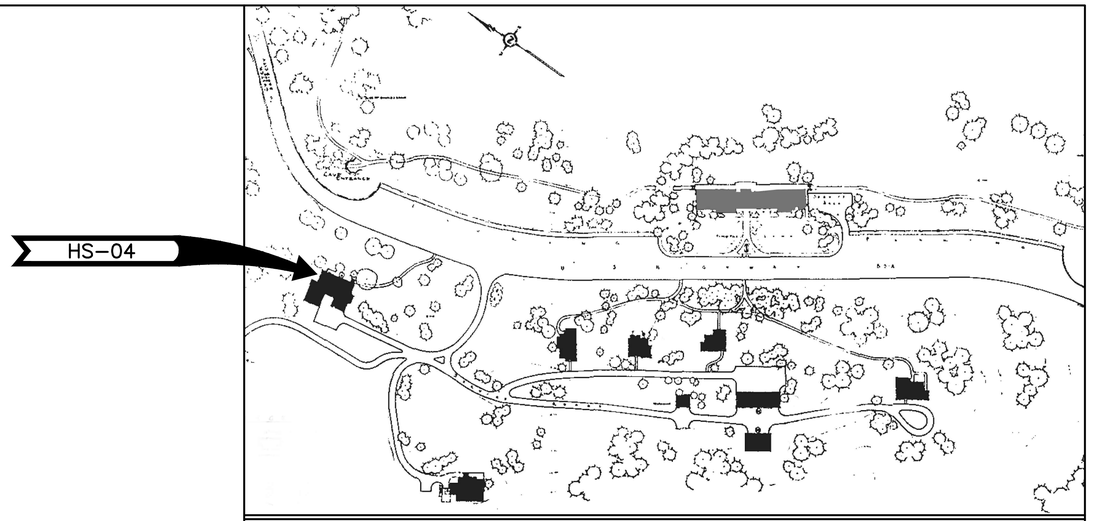
The building has two hand activated dry chemical fire extinguishers. The first is located in Kitchen 105 and the second is located in Stair 200 (Figure F01).



Figure F01. Fire extinguishers. (Kitchen 105-Left, Stairs 200-Right) (HEI 2015)

HS–04 FIRE OFFICE BUILDING
HISTORIC STRUCTURES REPORT
HISTORIC HOUSING AREA
WIND CAVE NATIONAL PARK

EXISTING CONDITION DRAWINGS
HOT SPRINGS, SOUTH DAKOTA



HISTORIC HOUSING AREA, WIND CAVE NATIONAL PARK, HOT SPRINGS, SOUTH DAKOTA
(WIND CAVE NATIONAL PARK HISTORIC CONTEXTS AND NATIONAL REGISTER GUIDELINES REPORT, 1992)



HS–04 FIRE OFFICE BUILDING (SRJA 2014)

INDEX OF DRAWINGS

00 COVER

ARCHITECTURAL
A0 BASEMENT/FOUNDATION FLOOR PLAN
A1 FIRST FLOOR PLAN
A2 SECOND FLOOR PLAN
A3 ROOF PLAN
A4 EAST ELEVATION
A5 SOUTH ELEVATION
A6 WEST ELEVATION
A7 NORTH ELEVATION

ELECTRICAL
E0 BASEMENT/FOUNDATION FLOOR PLAN
E1 FIRST FLOOR PLAN
E2 SECOND FLOOR PLAN

MEASURED IN NOVEMBER 2014

HISTORIC STRUCTURES REPORT

UNITED STATES
DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE
DENVER SERVICE CENTER

TITLE OF PROJECT
EXISTING CONDITION DRAWINGS
HS–04
FIRE OFFICE BUILDING
HISTORIC HOUSING AREA
WIND CAVE NATIONAL PARK

REGION: MIDWEST
COUNTY: CUSTER
STATE: SOUTH DAKOTA

DRAWING NO. 108
128866

PMIS/PKG NO. 158029

SHEET 1 OF 12

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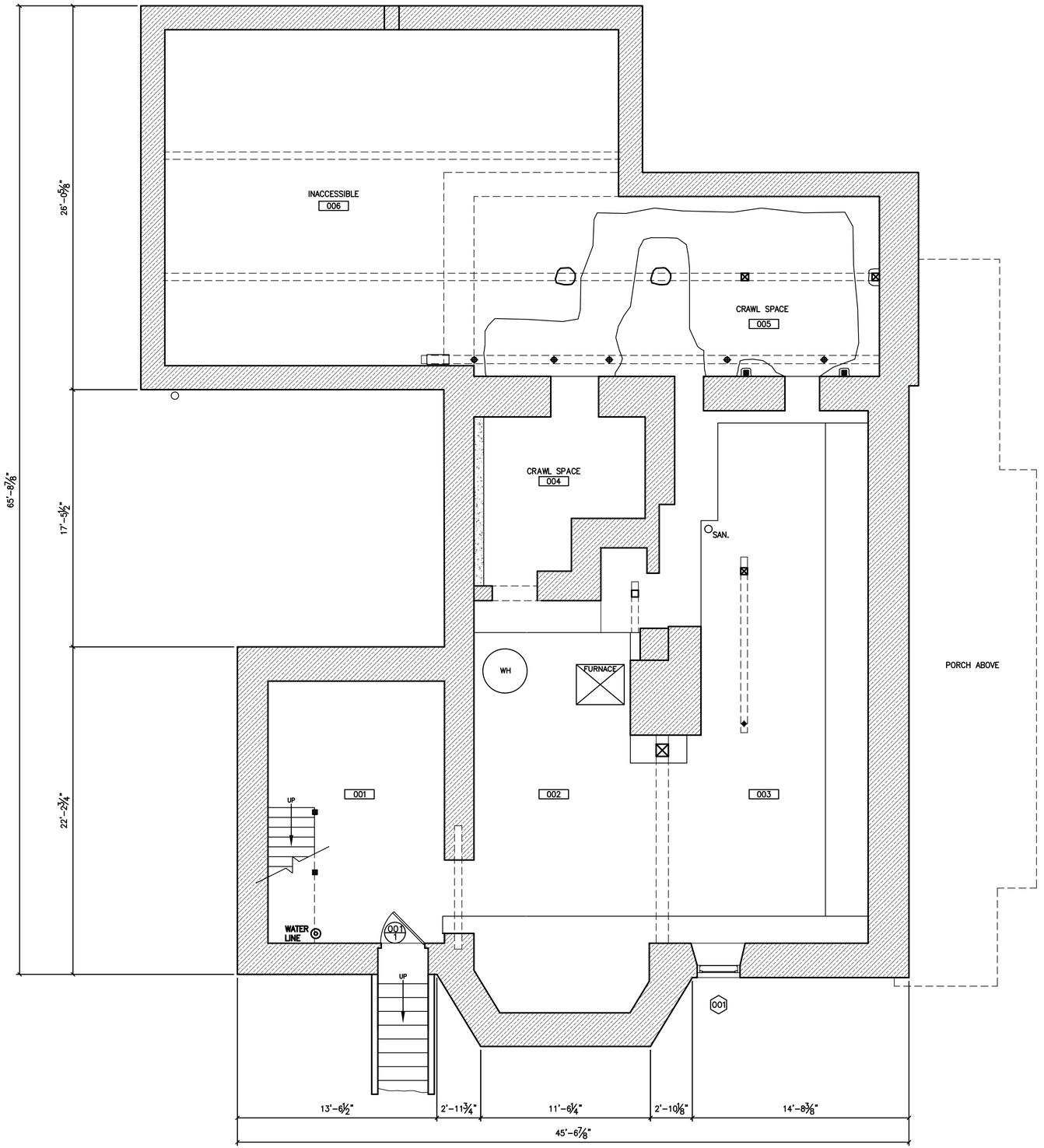

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1/4" = 1'-0"

DRAWING KEY:

MASONRY FOUNDATION WALLS

CONCRETE FOUNDATION WALLS

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SCALE OF FEET

Susan Richards Johnson & Associates, Inc.
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DRAWN: AG
TECH. REVIEW: AG
DATE: 10/23/15

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WIND CAVE NATIONAL PARK
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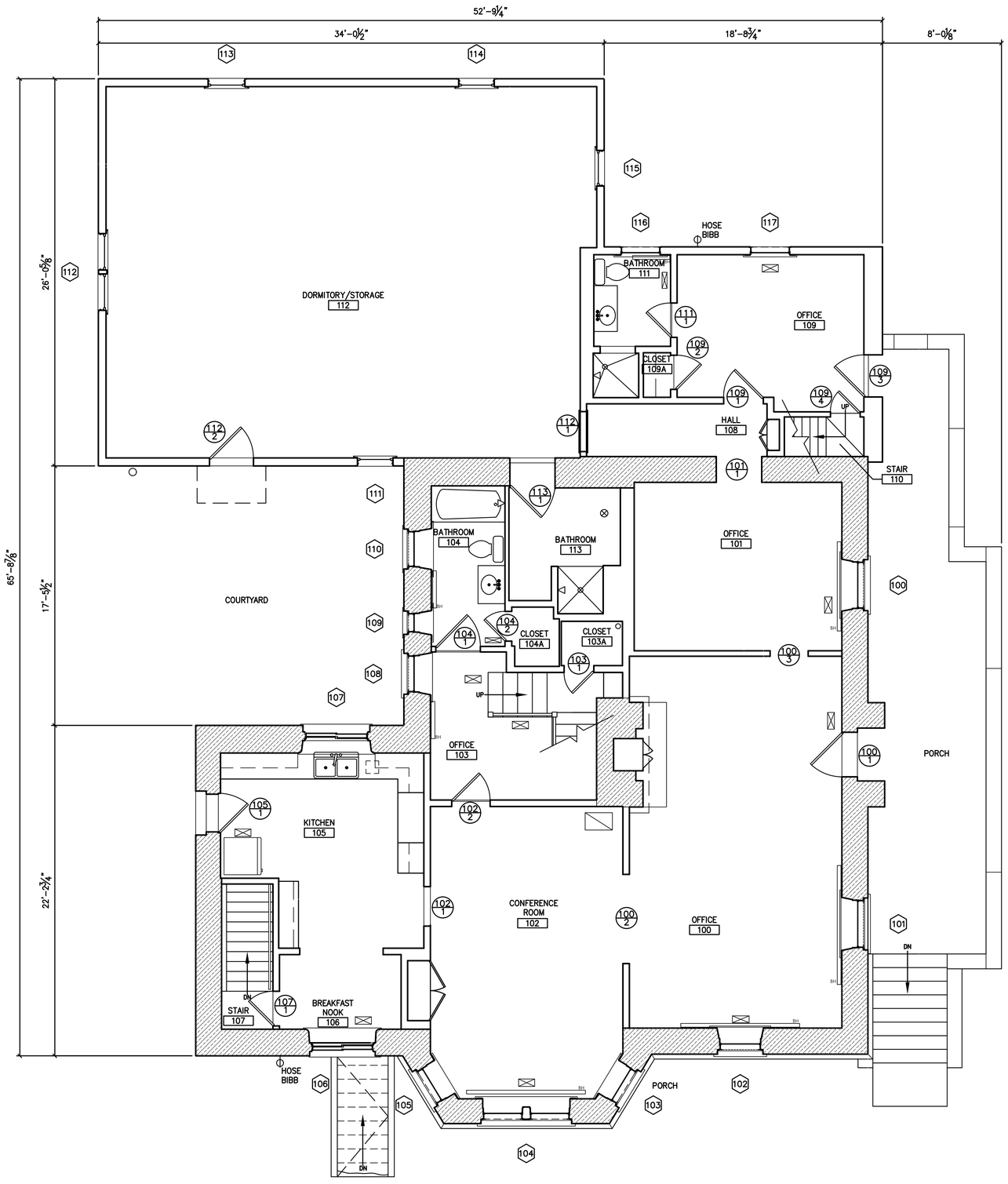
SHEET 2 OF 12



1 / A1 EXISTING HS-04 FIRST FLOOR PLAN
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DRAWING KEY:

MASONRY FOUNDATION WALLS

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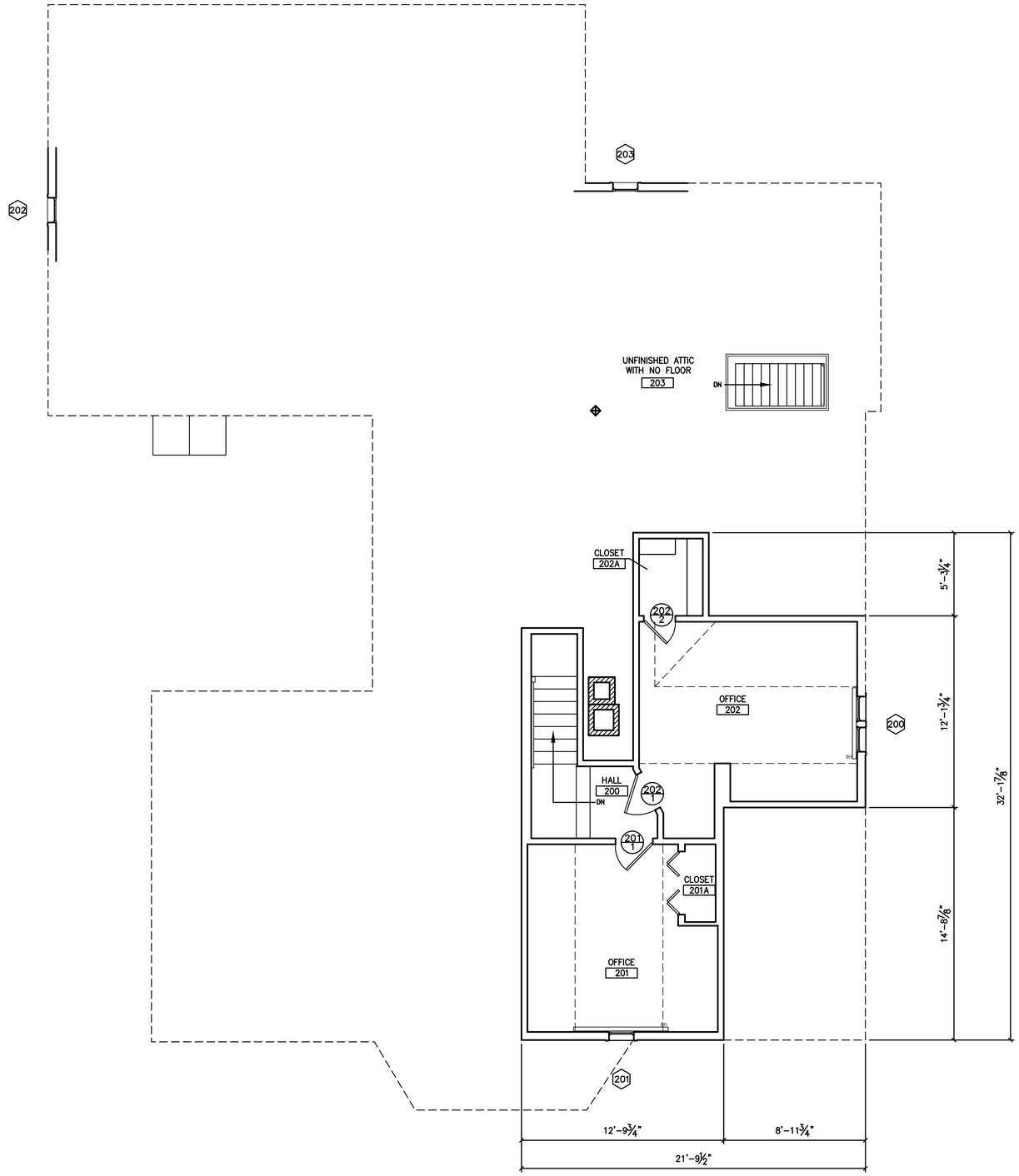

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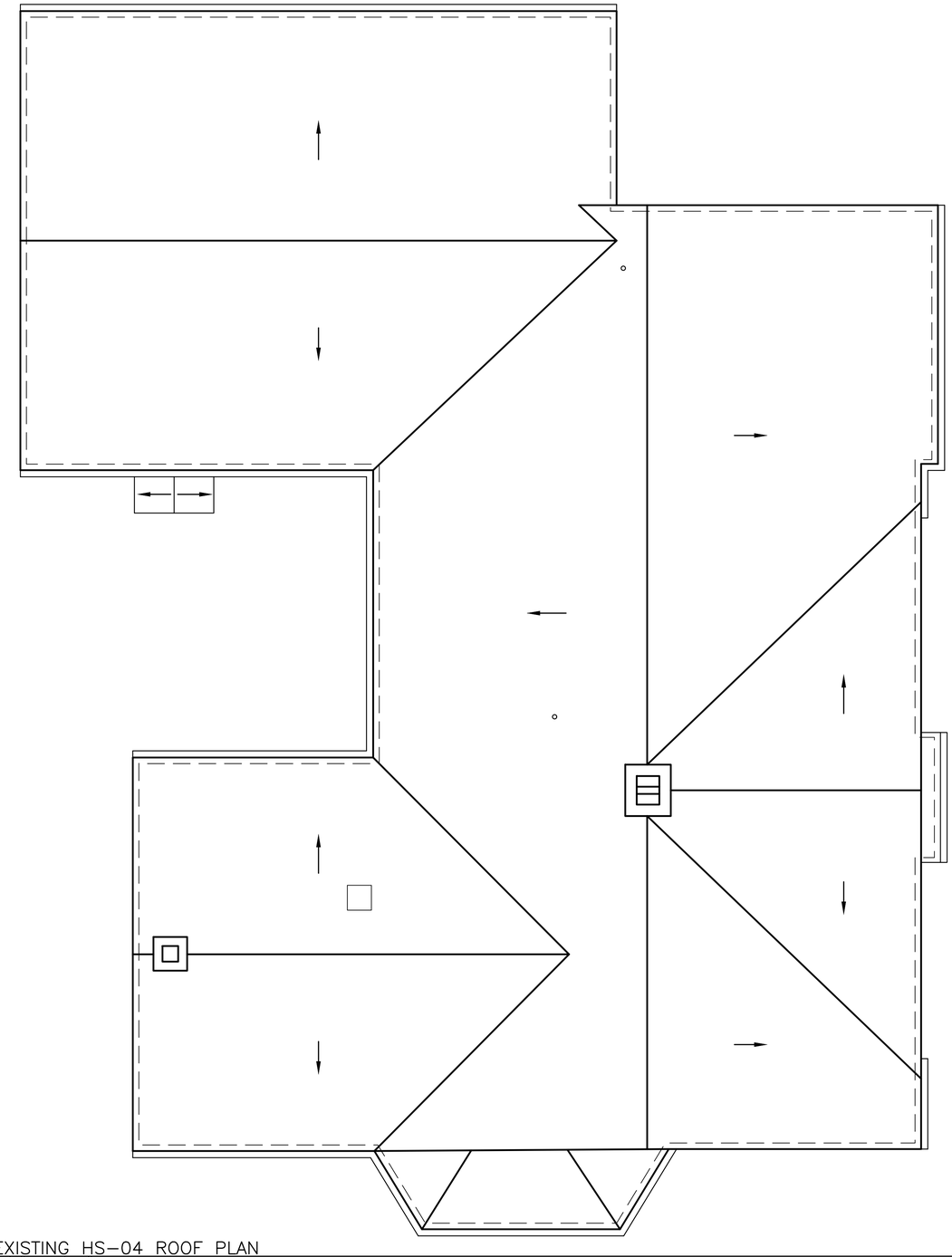
SHEET 4 OF 12



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WIND CAVE NATIONAL PARK
HOT SPRINGS, SOUTH DAKOTA

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1 / A4 EXISTING HS-04 EAST ELEVATION
1/4" = 1'-0"

4 0 4 8
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DRAWING NO. 108
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SHEET 6 OF 12



1 / A5 EXISTING HS–04 SOUTH ELEVATION
1/4" = 1'–0"

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SCALE OF FEET

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SHEET 7 OF 12



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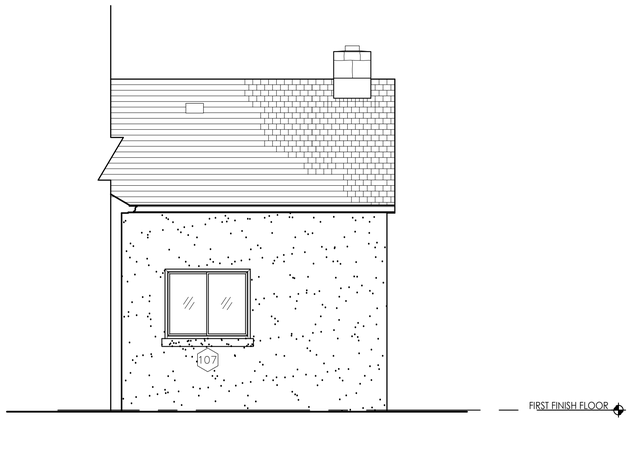

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4 0 4 8
SCALE OF FEET



1 A6 EXISTING HS-04 WEST ELEVATION
1/4" = 1'-0"

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WIND CAVE NATIONAL PARK
HOT SPRINGS, SOUTH DAKOTA

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SHEET 8 OF 12



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DRAWING NO. 108
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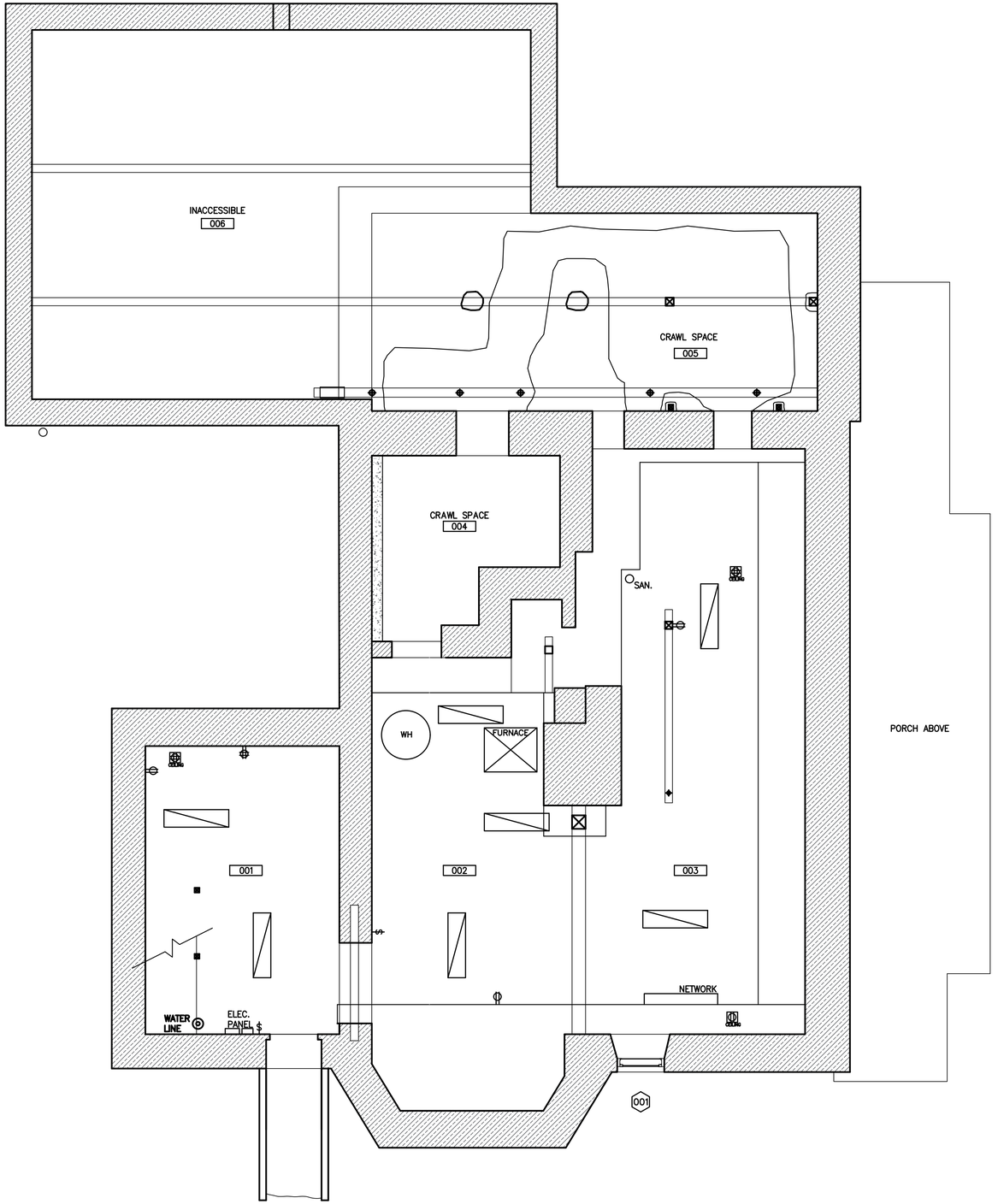
PMIS/PKG NO. 158029
SHEET 9 OF 12



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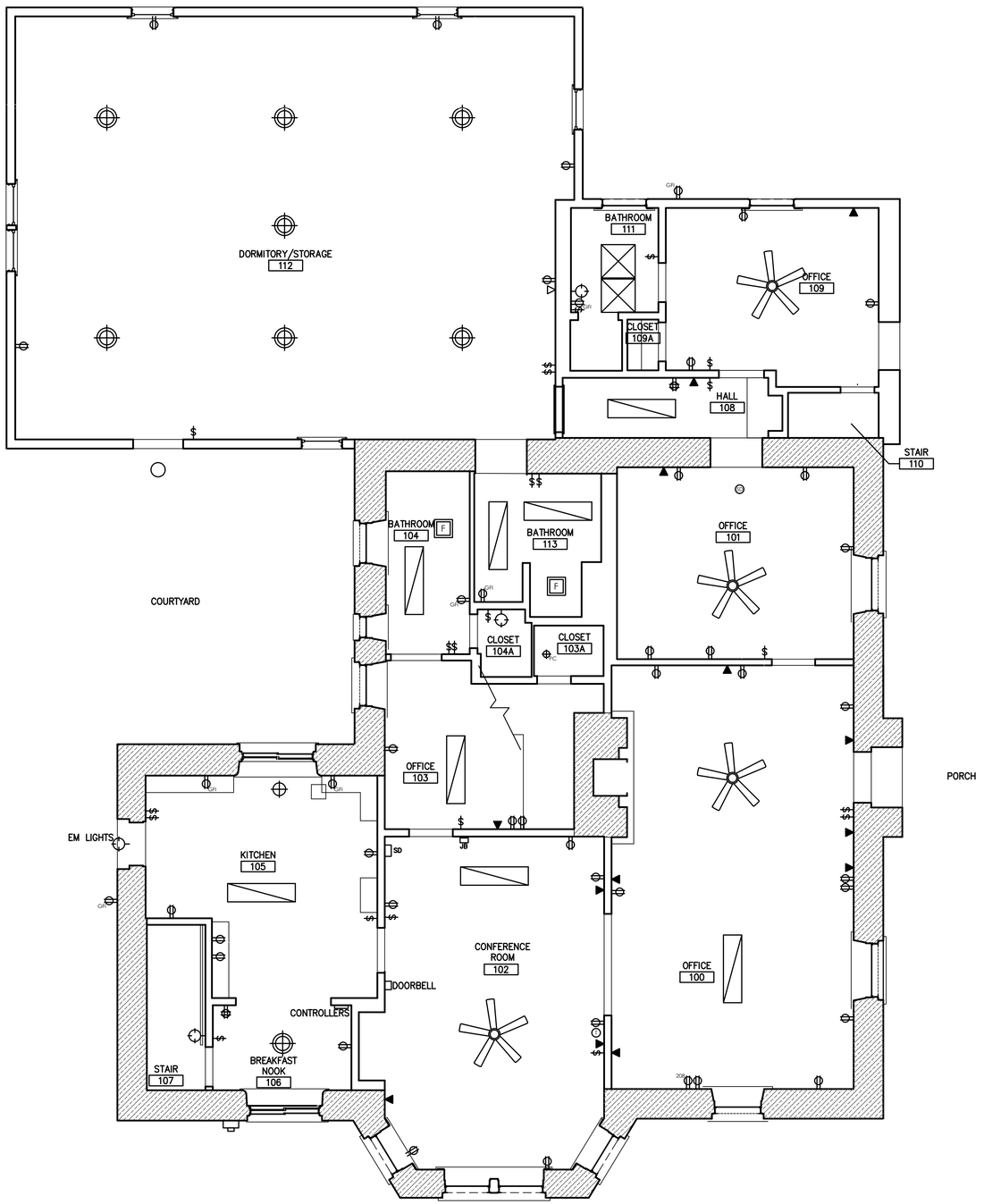
SHEET 10 OF 12



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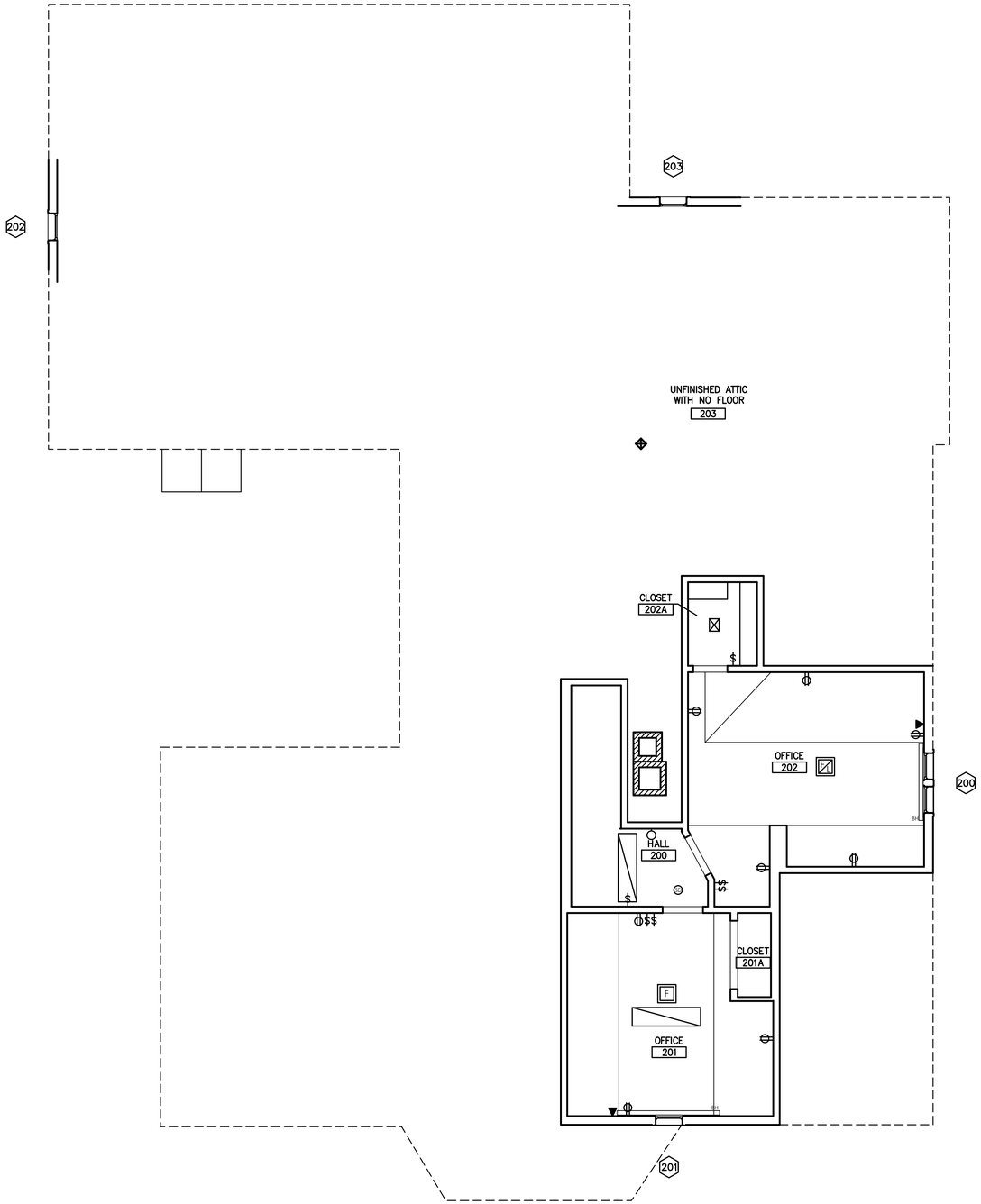
SHEET 11 OF 12



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HISTORIC HOUSING AREA
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HOT SPRINGS, SOUTH DAKOTA

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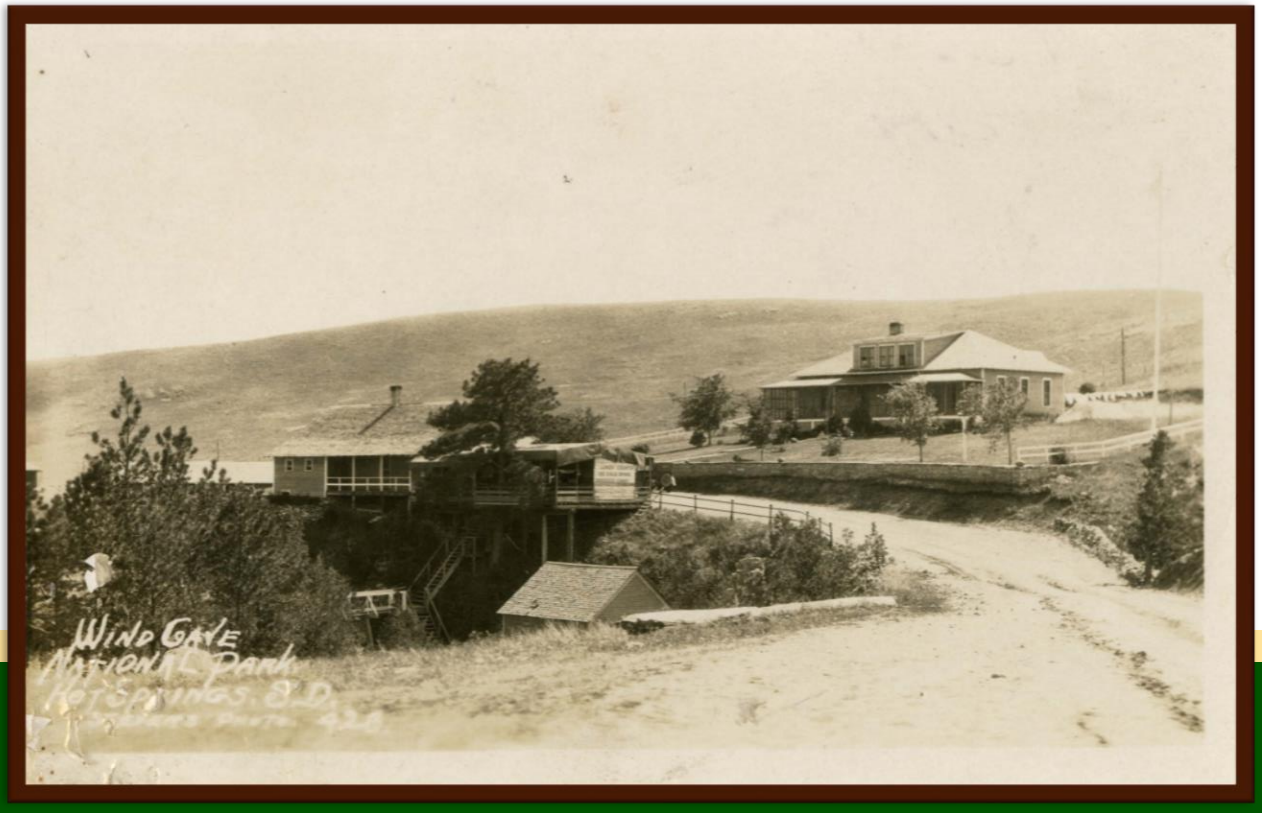
SHEET 12 OF 12



HS-04 ca. 1920. (WICA Museum Collection #WICA 185)

Treatment Recommendations

Treatment Recommendations

Introduction

This Historic Structure Report for the HS-04 Fire Office is intended to serve as the primary document to provide recommended treatments for the historic building. This section of the report provides treatment recommendations to address the immediate preservation and stabilization of the existing historic fabric, and to establish long term rehabilitation and maintenance needs. The immediate recommendations are to be used as a guide for the preservation of the existing structure, while the long term treatment recommendations are items to consider when future maintenance or rehabilitation work occurs.

The period of significance the Historic Housing Area at Wind Cave National park is established to be from 1928 to 1942. HS-04 was initially constructed in 1905, with major renovations and additions in 1918, 1935, 1937 and 1987. The building was originally constructed as the park superintendent's residence, overlooking the historic cave entrance. This house was later used as a ranger's dormitory and seasonal housing until the Fire Office moved into the building in 2000. It has served as office space for between six to sixteen persons since that time.

This building has undergone extensive renovations, with very little resemblance to the ca. 1905 appearance. The National Park Service renovated the building by changing the roof lines and eaves details, adding gables, constructing a raised stone terrace and cladding the building with Spanish stucco in 1935. While the existing structure retains a substantial amount of architectural fabric dating to the period of significance, a few important exterior character-defining features are missing. Historical photographs have produced a fairly clear image of the exterior of the house before and throughout the period of significance, the original wood double-hung 1/1 windows and the shutters on the second floor windows.

The current use for the HS-04 Fire Office is for park staff office space and that use is not anticipated to change in the future. While most of the previous rehabilitation work provided functional space, the building has a cobbled-together appearance that has led to degradation of energy efficiency, employee comfort and use and perhaps structural capability. Identifying an appropriate historic treatment approach for the historic building is important, in order to serve as a guideline for planning and design purposes.

Historic Treatment Approaches

The identification of the possible four following historic treatments is based upon the *Secretary of the Interior's Standards for the Treatment of Historic Properties*:

> ***Preservation:*** *Sustaining the existing form, integrity, and materials of a property.*
>
> ***Restoration:*** *Accurately depicting the form, integrity, and materials of a property as it appeared during a particular period.*
>
> ***Rehabilitation:*** *Compatible use of a property through repair, alterations, and additions while preserving significant historical features.*

Reconstruction: *Depicting, by means of new construction, the form, features, and detailing of a non-surviving site, landscape building, structure, or object at a specific period of time and in its historic location.*

Selected Historic Treatment Approach - Rehabilitation

Rehabilitation was selected as the treatment approach in order to allow for the retention of historic authenticity while accommodating the installation of modern amenities. HS-04 has been extensively renovated prior to and during the period of significance. Renovations have continued through 2002. The structure is in very good overall condition and retains a substantial amount of historic integrity from the period of significance on the exterior and interior of the building. The primary interior spaces (Rooms 100, 101, 102, 108 and 109) retain the room layout and historic trim and doors from the period of significance. However, the back-of-house areas in the building have been renovated and retain very few significant interior finishes. These spaces are prime for future renovation. The building will require extensive rehabilitation to update finishes and potentially abate hazardous materials. Rehabilitation work associated with these repairs and renovations will affect the exterior and interior of the house and will also affect the grading at the north and west sides of the house. Work will need to be coordinated and designed to provide the necessary stabilization and repairs and to protect the building's historical features.

While rehabilitating the structure for the recommended Immediate Treatment Recommendations, plans should be made to accommodate for these required repairs: excavation of grade at the west and north elevations; substantial stucco wall repair and replacement; painting; window replacement; window restoration; structural stabilization in the basement and attic; and general maintenance and repair items. Great care should be taken to respect the existing historic fabric of the building, a majority of which dates to the period of significance (1928 – 1942). A more comprehensive Long Term Treatment Recommendations Rehabilitation would have a much greater impact on the interior of the building.

Construction Impact

All construction activities that may impact the grading or soils surrounding the building must be closely monitored by a National Park Service Archeologist. No demolition, excavation or digging can occur without the required notifications, approvals and documentation. Section 106 compliance is also required for any construction activities that may impact the historic structure and surrounding landscape.

Building Code / Life Safety / Zoning / Accessibility Evaluation

The one-and-one-half story HS-04 Fire Office Building was originally constructed in 1905. The original structure consisted of load bearing masonry walls with interior wood floor, wall and roof framing. An addition in 1918, renovations in 1935 and another addition in 1937 utilized wood frame walls on stone foundations. The second floor with two bedrooms and the stair were constructed in 1987. The structure was originally intended to be a single family residence, and was later used for seasonal staff housing.

Since 2000, the building has been used as a park office. The building was not significantly renovated when the staff moved in; and therefore, no independent consultation or evaluation of building code/life safety or ADA accessibility was conducted. It is understood that park staff initially anticipated use of the first floor only until additional staffing required expansion to the second floor in 2007.

A *National Park Service Fire Protection Variance / Waiver Request* filed on August 17, 2007[21] documents the noncompliance issues with the building. A waiver was granted for a requirement that cannot be met, but does not impact life safety. The park requested the following in the waiver:

> *The park would like to move two offices into the second story of WICA building HS-04. These offices are needed to increase operational effectiveness of the Northern Great Plains Fire Management Office and to house an employee with the Northern Plains Inventory and Monitoring Network.*
>
> *The distance between the stairs and the ceiling does not meet code on the landing going up to the second floor.*
>
> *We have purchased and placed in each of the two offices emergency escape ladders to be deployed through the windows in case of emergency.*
>
> *We are asking for a waiver for the stairway leading to the second floor.*

The park anticipates continuing to use the building as an office for the current staff. For the purposes of this building code review, the building is assessed for use as office, along with required support spaces, such as restrooms and a kitchen. This intended use requires that the entire structure be analyzed under current life safety code and ABAAS accessibility requirements.

The applicable codes for the project are:

- 2012 International Building Code (IBC)
- 2012 International Existing Building Code (IEBC)
- 2012 International Energy Conservation Code (IECC)

[21] *National Park Service Fire Protection Variance / Waiver Request*. August 17, 2007. Maintenance Files.

- 2012 International Mechanical Code
- 2011 National Electric Code (NEC)
- 2012 International Plumbing Code (IPC)
- 2012 International Private Sewage Disposal Code
- 2012 International Fuel Gas Code
- National Fire Protection (NFPA)
    - 2013 Standard for the Installation of Sprinkler Systems (NFPA 13)
    - 2013 National Fire Alarm and Signaling Code (NFPA 72)
    - 2012 Life Safety Code (NFPA 101)
- Structural Fire Reference Manual 58, National Park Service.
- Architectural Barriers Act Accessibility Standards (ABAAS)

For design and planning purposes, as proposed for the original building first floor footprint, the building would be considered to require the following:

- Type VB Construction, Currently Unsprinklered, and is reviewed as Unsprinklered for the initial Immediate Treatment Recommendations.
    - The Long Term Treatment recommends installation of a new fire suppression system. NPS requirements for fire suppression installation are further discussed in the Long Term Treatment Recommendations Section.
- 'B' Occupancy (occupant load of less than 50 persons shall be classified as Group B).
- The Occupant Load is based on Business on the First and Second floor calculated at 100 SF per person.
- First floor egress is compliant, as there are three exits in the main portion of the first floor, which lead directly outside. In the proposed Long Term Treatment plan, the existing door to the courtyard will also be utilized.
- Emergency egress lighting is required and is not currently installed.
- Installation of a fire alarm/smoke detection system on the first and second floors is required and is currently installed.
- The second floor is currently occupied through the grant of a waiver from the NPS. The proposed Long Term Treatment Recommendations also uses the second floor, but has a new code compliant stair proposed.
- Restrooms for this building exist but are not in full compliance for the intended use. The compliance requirements will be addressed in the Long Term Treatment Rehabilitation plans.
- The current building does not meet required ADA access. The Door 112/1 will be altered, as required, to become the new ADA compliant door and accessible entrance in the Long Term Treatment Rehabilitation plans.
- The existing second level is reviewed as a Mezzanine space, due to the small square footage and the short travel distance to an exit. This is a legally occupiable level for office.
- The existing stair to the basement is not rated. It is allowed to remain unrated, as the stair can be open to one or more floors.
- An automatic fire sprinkler system is not required for B occupancy.

The code assessment utilized for the existing structure – Use Group B Occupancy:

- Floor Area:
  - Basement: 744 net square feet (Non-occupied)
  - First Floor: 2,783 net square feet
  - Mezzanine: 341 net square feet
- Building Height: Approximately 24 feet
- Use Group: B
- Construction Type – 5B (Unsprinklered)
  - Allowable Height (B) – 2 Story 40'
  - Allowable Floor Area (B) – 9,000/floor
  - Ext. Load Bearing Walls – 0 hours
  - Ext. Non-load Bearing Walls – 0 hours
  - Interior Bearing Walls - 0 hours
  - Floor Construction - 0 hours
  - Structural Mem. Supporting Walls - 0 hours
- Occupant Load
  - Basement (B Accessory)
  - First Floor (B) 28 persons
  - Mezzanine (B) 3 persons

Updated code assessment, based Long Term Treatment Recommendation Drawings - Use Group B Occupancy, expansion of the second floor and installation of a sprinkler system – Per 2012 IBC and IEBC:

- Floor Area:
  - Basement: 744 sf (Non-occupied)
  - First Floor: 2,783 net square feet
  - Mezzanine: 511 net square feet
- Building Height: Approximately 24 feet
- Use Group: B
- Construction Type – 5B (Sprinklered)
  - Allowable Height, Table 503 (B) – 2 Story 40'
  - Allowable Floor Area, Table 503 (B) – 9,000 sf/Floor
  - Ext. Load Bearing Walls – 0 hours
  - Ext. Non-load Bearing Walls – 0 hours
- Occupant Load
  - Basement: Non-occupied
  - First Floor: 28 persons
  - Mezzanine: 5 persons

The 2012 International Existing Building Code, Chapter 12, addresses Historic Buildings. The intent of the IEBC, Chapter 12, is to provide a means for the preservation of historic buildings. Repairs to any portion of a historic structure are permitted (IEBC-2012.1) to be made with original or like materials and methods of construction. Since the provisions of the IEBC are to

be utilized for this project, the building code or person having jurisdictional authority, may require a report from the registered design professional to address compliance issues. The report should identify compliance with Chapter 12, identify each safety feature that is not in full compliance, and describe how the intent of the provisions are complied with by establishing an equivalent level of protection.

To address means of egress, any newly constructed egress elements will comply with the IBC requirements for door widths, maintaining a clear 32 inch opening. Existing door and stairway widths will be allowed to remain in its existing condition (with the provision of the local authority having jurisdiction making the determination that sufficient width and height for a person's passage through the opening has adequate capacity and meets the occupant loading requirements). An example of this is the Waiver granted for use of the second level. Future rehabilitation documents should include an egress analysis to illustrate exiting adequacy and compliance.

Neither of the existing stairs meet current rise and run code requirements for commercial properties. In the Long Term Treatment Recommendations drawings, the main stair to the second level is noted to be reconstructed to meet current code.

Accessibility

The current building does not meet ADA accessibility requirements. There is not ADA entry, no handrail at the front steps, and there is no ADA compliant restroom. Many of the turning radii and clearances in the building do not meet current ADA requirements.

Accessibility requirements are addressed in IEBC, Chapter 12, and state that in historic buildings per Section 1012.8 (Accessibility in change of occupancies), the building must comply with Level 1 Alterations, as well as the requirements of IEBC 1012.8.2. Alterations Level 1 addresses the removal and replacement of existing materials or fixtures, and these alterations do not require that the building be provided with an accessible means of egress. Given the potential for a large rehabilitation project addressed in the Long Term Treatment Recommendations, every effort should be made to provide an accessible entrance and restroom facility, as well as the required clearances for full use of the structure.

IEBC Section 1012.8.2 establishes that the property provide the following:

- Accessible parking.
- At least one accessible route connecting accessible parking to an accessible entrance.
- At least one accessible passenger loading zone where loading zones are provided.
- At least one accessible entrance.
- At least one accessible route from an accessible building entrance to primary function areas.
- Signage complying with Section 1110 of the IBC.

Treatment Recommendations

With the intent of protecting the future integrity of the existing historic fabric and character defining features of the HS-05 Quarters, the following treatment recommendations are proposed. These recommendations were developed based on the assessment of the building during the two site visits in fall of 2014 and winter of 2015 and provide direction for immediate issues and long term historic treatment work.

All architectural, structural and MEP recommendations are in keeping with the *Secretary of the Interior's Standards for Rehabilitation* as a guide. The goal of any sensitive preservation or rehabilitation project is to retain and preserve the extant original historic materials with the least amount of visible alterations to the structure, while supporting the proposed interpretive use of the building.

Immediate Treatment Recommendations

These immediate recommendations are based on the stabilization and maintenance of the existing structure in its current configuration. A useful reference for small building caretakers is the National Park Service, *Preservation Brief 47: Maintaining the Exteriors of Small and Medium Size Historic Buildings* by Sharon C. Park, FAIA. This brief outlines example maintenance schedules and checklists, as well as making recommendations for preparation of maintenance and a means for determining qualified contractors who will understand the project objectives for the structure's preservation.

The cost estimate associated with the Immediate and Long Term Treatment Recommendations can be found in Appendix C.

General Treatment Recommendations

All suspect building surfaces and materials should be tested for lead based paint and asbestos containing materials prior to the initiation of any work. Testing should be done by a qualified hazardous materials consultant.

Immediate Treatment and Maintenance Repair Recommendations

Refer to the Immediate Treatment Recommendation Drawings and the Window Replacement Recommendations at this end of this section.

Exterior

1. Remove vegetation -
   Remove brush and vegetation growth surrounding the stone foundation and terrace.

2. Re-grade –
   Re-grade at northwest corner of the building (dormitory addition) along the west and north walls to a minimum of 4-inches below the top of the foundation wall. Install a swale and a French drain to daylight.

3. Stone foundation –
   - Clean 100% of stone foundation.
   - Spot re-point foundation, as required. Match historic mortar.
   - Spot repair/replace mortar wash at top of stone foundation wall.
   - Replace a total of six stones on the east terrace wall.

4. Stone chimneys (Central chimney and west chimney) –
   - Clean all stone.
   - Re-point stone, as required.
   - Repair/replace mortar wash at top of chimneys.
   - Inspect flashings.
   - Remove unused downdraft flue from central chimney.
   - Install permanent pre-finished metal flue caps, per SMACNA details.

5. Concrete/stone foundation –
   Repair newly-exposed concrete/stone foundation at dormitory addition after re-grading.

6. Stucco –
   - All stucco repairs should match the existing 3-coat system that is in place. Use the recommended stucco bonding agent for all repairs.
   - Repair stucco cracks and crazing on the main portion of the building.
   - Replace missing or damaged sections of stucco on the main portion of the building.
   - Investigate cause of plaster deterioration at the dormitory addition. Anticipate to demolish 100% of stucco from exterior of dormitory addition. Install new vapor barrier, metal lath and 3-coat stucco finish to match the existing. Depending upon the scope of anticipated future work, this may be prudent to wait until a larger renovation project occurs.

7. Concrete Terrace and Courtyard –
   - Install soft joint between the concrete terrace floor/steps and the stucco/stone walls.
   - Clean existing concrete terrace/steps. Seal any cracks and install water repellent.
   - Install soft joint at concrete/stucco wall in courtyard and along driveway.

8. Handrail –
   Install new galvanized painted pipe railing at front terrace steps.

9. Exterior Painting –
   - Prep, prime and paint 100% of stucco exterior after repairs are completed. New paint color to match historic stucco color, as defined in the Volume I, Historic Building Materials, Stucco section of this report. A Benjamin-Moore paint color match was determined, but must first be sampled, as recommended.
   - Prep, prime and paint 100% of all wood trim (cornice, fascia, window/door trim and sills, louvers, and stain horizontal gable siding).
   - Paint gutters and downspouts.

10. Window replacement (Refer to Window Replacement Recommendations at the end of this section) –
    - Replace existing non-historic metal windows (Windows 100, 101, 102, 103, 104, 105, 106, 107, 108, 109 and 110). Remove existing interior and exterior sash, including all metal panning.
    - Restore or replace, in kind, all historic wood trim and sills.
    - Install new reproduction aluminum clad wood double-hung 1/1 windows with Low-e glass.
    - Stain or paint interior to match surrounding trim.

11. Window restoration –
    - Restore existing historic wood double-hung windows in the dormitory and in the attic (Windows 111, 112, 113, 114, 115, 202 and 203).
    - Repair/replace wood window components, as required.
    - Re-glaze all windows (reinstall historic glass).
    - Restore existing sash hardware (locks and pulls).
    - Install new sash cord.
    - Fabricate new custom top-hung wood storm windows with Low-e glass for each window.

12. Storm windows –
    - Install (2) new storm windows at Window 200.

13. Exterior doors –
    - Replace threshold at Door 109/3.
    - Remove existing and install three new storm doors at 100/1, 109/3 and 105/1.

14. Wood trim repairs –
    - Perform wood trim repairs, as required. Match existing trim profiles, dimensions and installation.
    - Restore wood bulkhead door. Repair/replace deteriorated trim boards, as required.
    - Prep, prime and paint, as required.

15. Wood louvers –
    - Inspect existing three wood louvers. Determine if south louver is functional due to the office addition on the second floor.
    - Replace screening on the interior, as required.
    - Remove exterior screening from north louver. Repair wood louver, as required.
    - Determine if additional attic ventilation is required.

16. Exposed wiring –
    Relocate exposed wiring on south elevation of bay window to the interior.

17. Remove pipe from south wall – patch stucco and interior structure, as required.

18. Flashing –
    Repair missing flashing, as required, in kind. Paint to match surrounding trim.

19. Downspouts –
    Install downspout extensions, as required, to direct water away from the stone foundation.
    Install new splashblocks, as required.

Interior

20. New concrete pad –
    The steel post at the south end of the girder between Rooms 002 and 003 bears directly on the slab on grade. The load should be distributed over a wider area by adding a concrete pad. Section B/TS3 shows a typical detail for this repair.

21. Structural Modification to girder and new concrete pad –
    Some of the floor joists in Room 003 do not extend to the girder separating Rooms 002 and 003. The north-south 5 ¼ x 7 girder in Room 003 should be extended further to the south to support these joists. The post at the south end of this extended girder should bear on a concrete pad to distribute the load on the slab-on-grade. Section C/TS3 shows a typical detail for this repair.

22. New concrete in-grade footings -
    There is a girder and posts in Crawl Space 004. The posts are not in contact with the bearing pad. New footings should be installed with a new base plate for the posts. SK-D/TS3 shows a remedy for this repair.

23. New concrete in-grade footings –
    The girder in Crawl Space 005 is not supported adequately. Support consists of loosely stacked rocks or wood posts that bear directly on soil. New footings should be installed to properly support the girder. D/TS3 shows a remedy for this support.

24. Girder and in-grade footings -
    Additional support should also be added at the west end of the girder line where the girder is missing. The floor should be temporarily supported, the existing soil should be excavated and a new girder should be installed. The new girder should be supported with new posts and footings similar to detail D/TS3.

25. New concrete in-footings at steel posts -
    The steel beam and steel posts along the south wall of Crawl Space 005 are bearing on concrete patio type blocks. The steel beam should be temporarily shored and new footings similar to G/TS3 should be installed.

26. New lintel –
    At the opening in the foundation wall between Basement 003 and Crawl Space 005, there is no lintel present to support the stone wall above. A new lintel should be installed. This should consist of new steel beams pocketed into the stone walls on each side of the opening.

27. Concrete cap replacement -
    In select areas along the basement stone retaining walls, the concrete cap is deteriorating. Once all items are removed from storage, a closer inspection may validate repairs for the concrete cap. This is shown in SK-A/TS3.

28. Attic rafter repair –
    The attic framing has been modified a few times changing the original hip roof to a gable roof. There have also been modifications as part of the additions. There are some of the rafters that have been inadequately spliced. F/TS3 shows a detail for a splice repair.

29. Attic rafter inspection –
    While it appears that the modifications have resulted in some framing being abandoned, the roof rafter framing adjacent to Room 201 should be investigated further to attempt to determine the extent of modifications.

30. Fire Safes -
    Based on the assumption that the floor framing consists of Douglas Fir Grade #2, the existing calculated floor framing is capable of supporting the two existing fire safes, as they now rest in Conference Room 102. If the safes are relocated, a separate inspection would be required of the flooring framing in the proposed location.

31. Conduct a radon test in the basement and crawl space areas. Install mitigation, as required.

32. Investigation void –
    Basement 001– investigate hole in west wall – infill with stone and mortar.

33. Insulate –
    - Investigate existing exterior walls for presence of existing Zonolite type and/or mineral wool insulation. This may require hazardous materials inspection/testing. If no hazardous materials exist, install additional wall insulation, as required. If hazardous materials exist, a separate project scope should be prescribed, which may require complete removal of the building occupants and furnishings and equipment due extensive removal of interior wall finishes for access to abate materials.
    - Insulate exposed ductwork in the basement and crawl space that is not currently insulated.
    - Insulate first floor joists under Office 109 and Restroom 110.
    - After attic insulation is tested for hazardous materials, remove contaminated attic insulation (animal feces and debris). Install new R-49 insulation throughout attic.

- Potentially block off Crawl Space 005 from 006 so that Office 109 and Restroom 111 will remain more temperate.

34. Vapor barrier –
    Install new 12 mil vapor barrier throughout the crawl spaces. Lap and tape joints. Lap vapor barrier up sides of walls. Insulate exterior foundation walls.

35. Replace existing receptacles in the basement that are not GFCIs. Replace existing receptacles in kitchen and bathrooms that are not GFCIs.

36. Install new disconnect at water heater.

37. Spot re-point stone walls in bulkhead stair.

38. Extend exhaust vent through roof in Bathrooms 104 and 111.

39. Install ducted hood at range in Kitchen.

40. Install code compliant egress lighting at all exterior doors.

41. Ventilate crawl space under Office 109. Open HVAC vent.

Long Term Treatment Recommendations

The building currently is used by the Fire Office and the USGS staff. During off-season, the building may have as few as six occupants, while in high-season, they may have as many as fifteen or sixteen staff. The staff are crammed into small office spaces and are frequently dissatisfied with the ability to heat and cool their spaces. The historic wood windows on the first floor were previously removed and replaced with metal sashes that are similar to a storm window. Exterior storm windows are also installed. Staff reports that these windows are very drafty and do not function. The building has no ADA entrance and does not meet the ADAAG code in many situations. There is also no egress lighting.

During the November 2014 site visit, suspect asbestos containing materials were found in the basement in two locations. The park will have these independently tested. Loose wall insulation from the first floor was found leaking into the basement. This appears to be a vermiculite type of insulation such as Zonolite that may contain asbestos. Paper-wrapped floor joists exposed in the basement where the old heating system was installed should also be tested. The blown-in insulation in the attic should be tested. An independent hazardous materials consultant should be contracted to perform a complete environmental assessment for the structure, including identifying lead containing paints and materials.

Also during the November 2014 site visit, the building was under siege by swarms of flies. The second floor and attic, as well as the first floor Office 100 were filled with flies, especially in and around the windows. Weatherstripping at doors and windows and inspection of the attic for access holes is recommended, as well as investigating other fly management solutions. The flies are not only a nuisance, but they are irritating to employees and are unsanitary. The fly infestation appears to be a seasonal issue, affecting the building the most in the fall. This affects other buildings in the Historic Housing Area, as well.

HS-04 retains most of the significant exterior features from the period of significance, 1928 - 1942. The missing features that are the most significant include the wood windows on the first and second floors and the shutters at the second floor. The wood windows in the dormitory addition remain intact. The missing wood windows would be easily replicated, as the exterior of the building was very well documented through the years.

The interior of the building, on the other hand, was not very well documented. No historic photographs of the interior have been found to date. Drawings from 1935 and 1937 show the proposed alterations to the first and second floors. The primary spaces on the first floor remain much as they were originally constructed. These spaces with the highest amount of historical significance and material authenticity include: Living Room 100, Office 101, Conference Room 102, Hall 108, Office 109, Stair 110 and Dormitory 112. Ceilings in several of the rooms have been furred down for unknown reasons and require further investigation. A large amount of historic trim and interior doors and hardware in these primary spaces remains. Secondary spaces that have witnessed the most significant changes include the Kitchen 105, Room 103, and all of the three Bathrooms. There are no significant features in these spaces, except for a few doors and door hardware. Light fixtures in Bathroom 111 and Breakfast Nook 106 are also early. The second floor finished spaces and stair in Room 103 was constructed in its current configuration in 1987 and has no historical significance.

Due to the significant amount of anticipated work with regards to potential hazardous materials mitigation, the long term treatment for this building is for a major rehabilitation project. This building has been altered numerous times since it was first constructed in 1905. With major alterations and expansions in 1918, 1935, 1937 and 1987, the building has witnessed significant alterations. The focus of a major rehabilitation would be to identify the exterior and interior significant features to be retained and to design a sensitive rehabilitation to preserve these key features and the overall characteristics and feeling of this building. Even though the Fire Office has resided in this building since 2000, the building still retains its residential feeling and scale - something that will be important to retain through any proposed rehabilitation.

This historic building is well positioned to continue to serve the park as an office for staff well into the future. With a sensitive rehabilitation, the building will be desirable office space with modern amenities and historic character. The focus of this proposed Long Term Treatment Scope of Work is for the building to be rehabilitated to serve as office space for the existing building tenants, the Fire Office and USGS. If the building were to be returned to a residential use as seasonal or year-round staff housing, then a completely different approach would be recommended, including a different type of interior treatment and life safety code review.

Proposed Long Term Treatment Scope of Work

A future rehabilitation project for the building to remain as office space would include the following proposed work items, as listed below. Refer also to the Long Term Treatment Drawings that accompany this report.

Demolition –

A. Refer to the Long Term Treatment Drawings for the proposed demolition. Note that a majority of the walls that are proposed to be demolished are not historic walls. The goal with this project is to maintain as much of the original historic fabric as possible.
B. Demolish all existing plumbing, electrical and HVAC. Some ductwork may be able to be reused.
C. Demolish all existing floor finishes, modern cabinetry, and accessories, as required.

General –

D. The scope of work related to the potential hazardous materials abatement is not clear at this time. This may include partial or whole-sale demolition of the interior furred walls at the perimeter of the building in order to mitigate insulation. This work will need to be closely monitored and may require temporary relocation of office equipment and staff.
E. All historic millwork will be retained, in situ, or will be salvaged and reinstalled in its original locations.
F. Restore all existing plaster walls and ceilings scheduled to remain.
G. Restore all existing wood floors to remain.
H. Paint the entire interior.
I. Install all new electrical distribution and service throughout the building.
J. Install all new lighting, including emergency egress lighting. Consider replacing the fixtures with LED fixtures to save on energy costs.
K. Install a new fire alarm and fire suppression -

The building currently has no fire alarm system or fire suppression system installed. Per Chapter 7, Appendix A of the National Park Service Reference Manual 58, Structural Fire Protection of Cultural Resources in the National Park Service; and Director's Order #58: Structural Fire Management, a fire alarm system is required to be installed and a fire suppression system is recommended to be installed. Using the Historic Property Assessment Matrix in Chapter 7 of the Reference Manual 58 yields a score for the structure between 15 and 28.

The scoring recommendations in Chapter 7 for a building scoring 15 – 21 are, "Fire alarm system required; Park may Want to Install a Fire Suppression System in this Structure (variance request would be required if no system installed)." The scoring Recommendations in Chapter 7 for a building scoring 22 – 28 are, "Fire alarm system required; Park should install a Fire Suppression System in this Structure (variance request would be required if no system installed.)"

If a fire suppression system is going to be installed, a new fire water service line will need to be installed, across the front yard, to the building. The existing domestic water service main size and location shall be evaluated prior to starting work. A flow test should also be provided to test for adequate water pressure and capacity. If a new domestic water service is to be brought to the building, a combined water and fire service entry may be installed if approved by the Authority Having Jurisdiction. If a combined service entry is not allowed, a new dedicated fire entry water line would need to be installed for the fire suppression service. This would require significant excavation and site disruption. The fire protection service line would be provided with an approved backflow prevention device.

The sprinkler system serving all conditioned areas of the house should be a wet pipe system designed per NFPA. The pipe should be schedule 40 steel with threaded fittings for piping 2" and smaller. Schedule 10 pipe would be used for piping 2 ½" and larger utilizing grooved fittings. Unheated areas will be served by a dry pipe sprinkler system. Antifreeze cannot be used here due to the risk that a discharge into the basement may eventually percolate into the cave system.

Due to the sensitive nature of the historic structure and subgrade caves beneath the building, it will be important to insure that the piping and sprinkler layout is carefully coordinated and reviewed by the National Park Service. A fire protection engineer should be retained to provide a full sprinkler system design including pipe layout, sizing and sprinkler layouts. This will require that the system design is engineered to ensure that the installation does as little harm to the building as possible. It must be noted that ceilings may need to be removed to install the sprinkler system.

A code compliant fire alarm system is required to be installed when the building is rehabilitated. A variance request would be required if either the fire alarm system or suppression system are not installed.

L. Install new telephone and data.
M. Install all new HVAC systems. Consider a separate system for the second floor.
N. Restore all interior and exterior historic doors and hardware.
O. Office 100/101: Remove the wall between Office 100/101. Investigate and remove furred ceiling at Room 100. Remove the furred east wall in Office 101. Restore plaster ceiling and walls in both spaces. Remove fireplace insert/clean fireplace and hearth. Seal fireplace damper. Install new carpeting and lighting.
P. Conference Room 102: Investigate and remove furred ceiling. Remove related stair to the second floor landing that projects into the space. Salvage historic wood doors. Locate missing French doors in park storage. Retrofit all four doors to become pocket doors. Retrofit walls to accommodate pocket doors. Repair wall and ceiling framing, as required. Restore plaster ceiling and walls. Restore/repair existing wood floors. Install new lighting. Restore built-in cabinet, as required.
Q. Copy Room 104: Demolish existing stair, closet and bathrooms in this section of the house. Re-frame for new code-compliant stair to the second floor. Install new finishes, including laminate flooring, cabinetry in the copy room, millwork to match the rest of the house and new lighting.
R. Entry 105 and Kitchen 106: Demolish existing Kitchen and Breakfast Nook finishes and some of the dividing walls. Demolish the existing basement stair. Construct new walls to create a back entry and a separate kitchen. The enclosure for the stair to the basement will also increase in size to accommodate a code-compliant stair to the basement. Install new kitchen cabinetry, counter, sink and all related accessories and equipment sized for office use. Install new laminate flooring and lighting throughout. Entry 105 could have built-in cabinetry for charging stations, coat rack, or other required equipment storage.
S. Hall 108: Restore Hall 108 historic plaster walls and ceiling finishes. Restore/repair wood flooring. Restore existing millwork and built-in cabinetry. Install new lighting.
T. Hall 109: Restore Office 109 historic plaster walls and ceiling finishes. Restore/repair wood flooring. Restore existing millwork and doors. Install new lighting.
U. Restroom 111: Construct new wall further to the east to enlarge the Restroom space. Install a new mop sink closet in the southwest corner. Install a new restroom with a toilet and sink and all related restroom accessories. Install new laminate flooring and base and new lighting. Use salvaged historic door and hardware for the restroom and a replica historic door with salvaged hardware for the mop sink door.
V. Dormitory 112: This is a prime historic space within the building. Preserving the volume of space in this room, along with the wood windows, wood flooring and historic lighting are essential. The plaster walls and ceiling in this space are significantly deteriorated and will likely require 100% removal and replacement. The historic trim should be salvaged and reinstalled. Gypsum wall board would be an appropriate replacement material. When installing the new wall board, the new walls may need to be furred slightly, so that the historic trim will fit properly. Removal of the exterior walls will allow for insulation and rewiring. Restore the historic ceiling fixtures and supplement with new lighting. Restore the Entry Door 112/1 to be the new ADA entrance. This will require a new threshold at the door and new hardware. A new

opening between the dormitory addition and the Copy Room 104 will need to be made through the stone wall. The old opening into the Restroom 113 can be infilled. The floor may need to be reinforced in Room 112 where the fire safe filing cabinets are located.

W. Restroom 113: Construct a new ADA compliant restroom with all new finishes and fixtures.

X. At the second floor, demolish walls between the offices and hall, as indicated on the plans. Construct new stair with open railings. Construct new walls at the north end to pick up the north stair and to allow access into the adjacent attic spaces. Construct new mechanical room. Install new carpeting and lighting throughout the second floor. Replace existing windows in Office 201 and 202 (Windows 200 and 201) with new aluminum clad wood replacement outswing windows with simulated mullions for additional egress (these will be non-compliant but will be an improvement).

Y. Install reproduction painted wood board and batten window shutters on Windows 200, 201, 202 and 203.

Z. Relocate exposed PVC foundation vent in west courtyard.

AA. Remodel Basement Room 001. Install new furred or plastered stone walls. Clean and seal concrete floor. Install new door between Room 001 and 002. Restore and weatherstrip bulkhead door. Install new washing machine hookup and base along east wall. Install new vent hood for laboratory oven to exhaust through the north wall or the roof in the northeast corner.

BB. Install new lighting throughout the Basement and Crawl Spaces.

CC. Install new insulated access door into Crawl Space 005.

DD. Consider installing a metal bulkhead door in lieu of the wood door.

EE. Consider reconfiguring the west courtyard to have plantings and sidewalks to be more welcoming.

FF. Install ADA parking spot and access to picnic area.

GG. When it is time to replace the existing roof, consider the installation of the Decra metal roofing shingles to match the Administration Building. The existing 40 year asphalt roof was installed in 2002, so by the time the roof requires replacement, there may be even newer acceptable substitute products that will have the look of a historic wood shingle, with less maintenance and a longer life span. New roofs should be outfitted with integral fall protection clips. These are a safety feature that has very little effect on the overall look of the roofs.

HH. When the roof is replaced, install new reproduction box gutters with rectangular downspouts to match the historic conditions.

II. Insulate entire building to meet current energy standards. Install additional insulation, as required in walls, crawl spaces and in attic.

It is recommended that the existing roof and wall insulation be evaluated and modified to meet the requirements set forth in Table C402.2 of the 2012 IECC.

2012 IECC TABLE C402.2 OPAQUE THERMAL ENVELOPE REQUIREMENTS

Climate Zone	7	
	All Other	Group R
Roofs		
Attic and other	R-49	R-49
Walls, Above Grade		
Wood framed	R-13 + R-7.5ci or R-20 + R-3.8ci	R-13 + R-7.5ci or R-20 + R-3.8ci
Walls, Below Grade		
Below-grade wall	R-7.5ci	R-10ci

ci = Continuous insulation
Refer to 2012 IECC for additional information.

Window Replacement Recommendations

Project: Replace Windows in Fire Office Building (HS-04) with Historically Appropriate Energy Efficient Windows and Install New Storm Windows on Historic Windows.

Description of Work:
Replace a total of sixteen (16) existing incompatible metal windows: Windows 100, 101, 102, 103, 104 (2 units), 105, 106 (2 units), 107 (2 units), 108, 109, 110, 116, and 117. Replacement windows shall be aluminum-clad wood units to match the historic double-hung windows which have previously been removed. Historic wood frames are to be retained in order to retain historic interior trim. Portions of deteriorated wood frames and sills will be repaired or replaced in kind. Install new custom top-hung painted wood storm windows at Windows 111, 112 (2 units), 113, 114, 115, 202 and 203.

Replacement windows will meet Energy Star and 2012 IECC standards for South Dakota. Storm windows in unoccupied and unconditioned spaces will assist in the protection of the historic windows and increase the thermal protection for these openings.

Justification:
The non-historic metal replacement windows in the Fire Office Building (HS-04) are outdated and inefficient; air can be felt coming through the frames. The windows do not block cold or hot temperatures. Glass stays cold in the winter causing condensation to build on the window and drip onto the frame; reducing the life of the window frame. The inability of the windows to effectively help control interior conditions creates an uncomfortable working environment for employees. Energy efficient windows can substantially reduce the costs associated with heating and cooling and provide comfort for employees. High-performance windows not only provide reduced annual heating and cooling bills, they also reduce the peak heating and cooling loads. Cold glass can create uncomfortable drafts as air next to the window is cooled and drops to the floor, energy efficient windows reduce this affect. Also, strong direct sunlight through window onto people and interior surfaces can cause overheating and discomfort. High-performance windows create warmer interior glass surfaces, reducing frost and condensation and reduce the amount of UV light transmission.

The existing metal windows are inappropriate and detract from the historic aesthetic of the building. The existing wood frames are deteriorated and require significant repairs or replacement. The 2015 Historic Housing Historic Structures Report recommended replacement of these windows as an Immediate Priority to increase thermal efficiency, employee comfort and historic integrity of the building.

Measurable Results:
Greening of the park through energy efficiency, reduced energy use and utilities cost. Increase employee health and safety through creating comfortable environment with the ability to control

office temperatures. Benefit visitors and staff by improving the historic aesthetic environment of the Historic Housing Area within the park.

Existing and Historic Windows:

The original first floor wood windows were 1/1 double-hung wood windows (Figure T1). Two first floor windows (106 and 107) have had the window openings altered during previous remodeling efforts. Good quality photographs of these window openings have not been located. These windows are squat and wide and are installed with the head of the window lower than the original windows and also with the bottom of the window above counter-top height. One drawing in the 1930s suggests that these may have had a wide mullion in the center, which was removed when the current windows were installed. This would mean the windows on either side of the mullions were either casement or short double-hung windows. A majority of these windows were replaced with single-pane metal windows of a very poor quality. Metal storm windows are installed on the exterior of the windows, as well. These replacement windows are in disrepair and are inappropriate for a historic window opening and are not energy efficient.



Figure T1. HS-04 1/1 double-hung windows at the first floor and 4/4 double-hung windows at the second floor. Red arrow points to Window 106, which is difficult to see in the photographs. (Detail WICA 4277)

Windows on the second floor were historically 4/4 double-hung. The windows on the east and south elevations (200 and 201) were replaced during the 1987 remodel. These windows are in fair overall condition. If the project allows, these windows could be replaced with the others, in order to match overall aesthetic. To increase the egress from these two second floor spaces, these windows could be converted to out-swing casement windows. They could be manufactured with a simulated meeting rail with 4-lites on the top of the rail and 4-lites below in order to simulate a double-hung window.

The second floor windows on the west and north elevations (202 and 203) are historic double-hung windows. These historic windows are to remain and be restored. Custom top-hung painted wood storm windows should be manufactured to cover Windows 202 and 203.

The double-hung wood 1/1 windows in the dormitory addition are original to construction and are able to be restored. These windows require new custom top-hung painted wood storm windows to be installed for protection of the historic windows and for increased thermal efficiency.

Potential Window Replacement Manufacturers and Products:
The selection of an appropriate replacement window is paramount to the success of the project. Replacement windows must be historically appropriate on both the interior and exterior of the building, fit the existing openings, be relatively low maintenance and be energy efficient. A goal of historic window replacement, is to find a manufacturer who can provide all of these without greatly reducing the overall visible glass size of the sash. When replacing 1/1 double-hung windows, this reduction is minimal.

Aluminum-clad wood replacement windows are an appropriate option for this building. The exterior aluminum can be pre-finished in a dark bronze color to match the historic brown trim color. This will result in a low-maintenance exterior finish. The interior of the windows will be wood which can be stained to match the historic interior trim. Important factors to consider: Low-E glass; tall bottom rail to simulate a historic window; stainable wood or paintable jamb liner; ease of cleaning; hardware options. Potential aluminum-clad wood window manufacturers may include: Anderson A or 400 Series; Jeld-Wen; Loewen Clad; Marvin Clad Ultimate; Pella Architect Series; and Weathershield Premium Series. Refer to Figures T2-T5 for recommended window replacement drawings for both 1/1 double-hung and a potential design for the casement windows at 106 and 107.

Custom painted wood storm windows can be manufactured to protect the historic windows with top-hanging hinges to match the ones on the building. The storm windows can be weatherstripped and be manufactured with Low-E glass. The storm windows should be painted to match the surrounding trim.

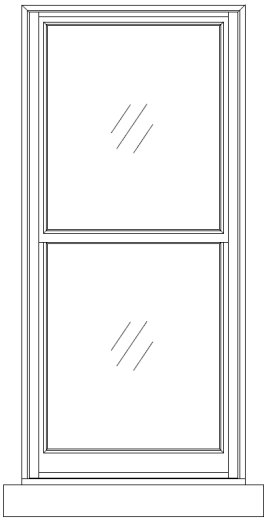


Figure T2. Elevation of a Marvin Ultimate Clad window at Window 102 location.

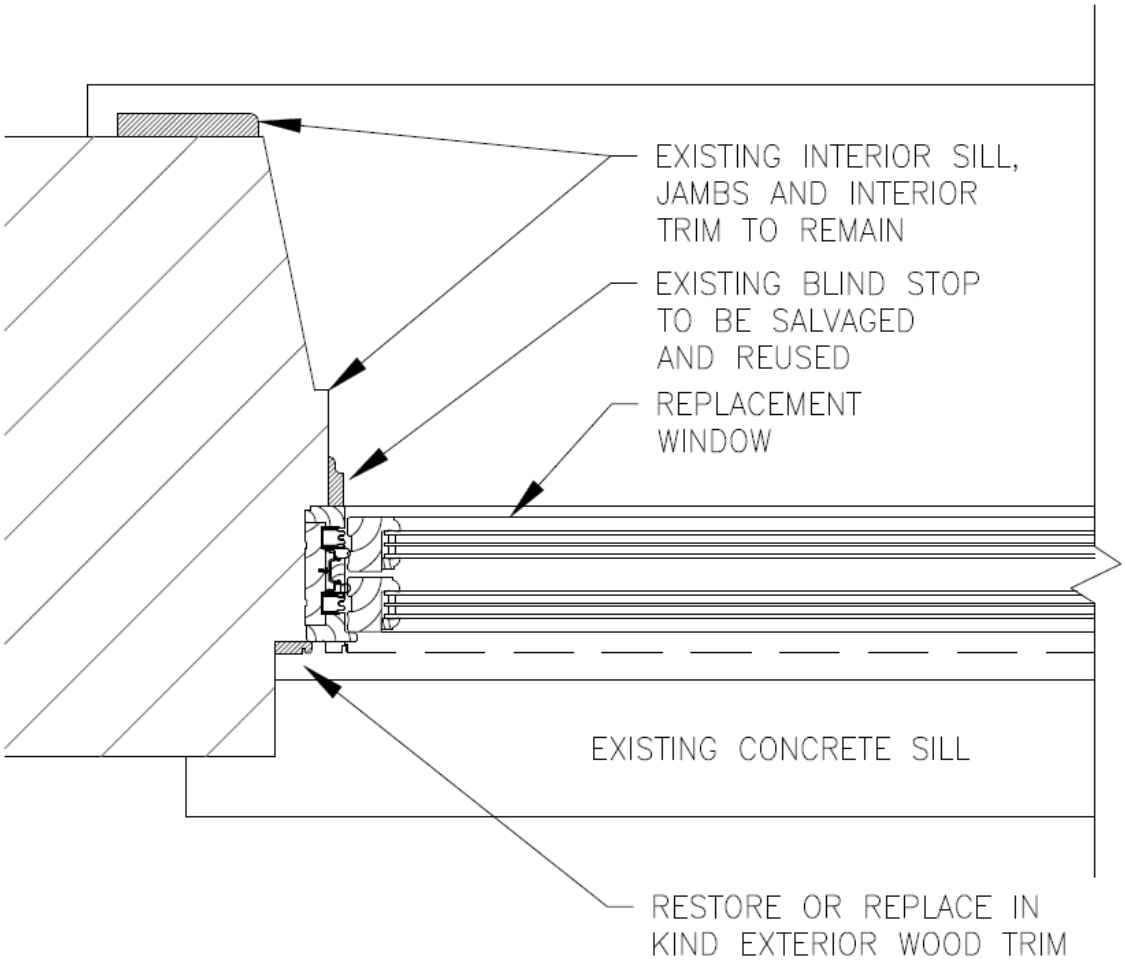


Figure T3. Jamb detail of a Marvin Ultimate Clad window at Window 102 location. The goal would be to preserve the historic interior sill, jambs and trim. Exterior trim may be replaced in kind. The exterior trim has a 3/16-inch bead.

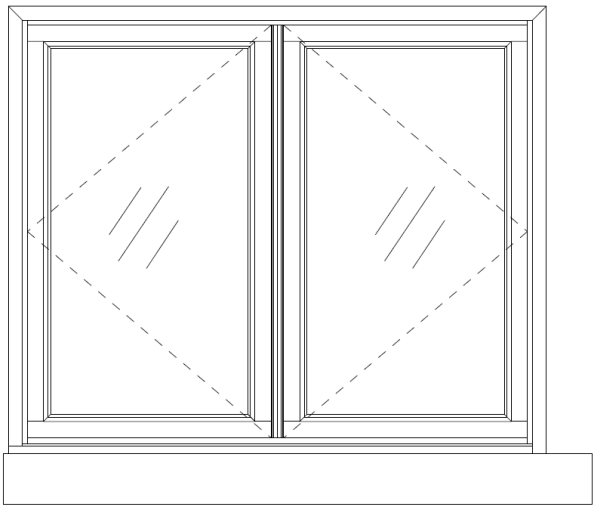


Figure T4. Elevation of a Marvin Ultimate Clad outswing casement window at Window 106 location. Because this window opening is not well documented, this is a proposed window infill design.

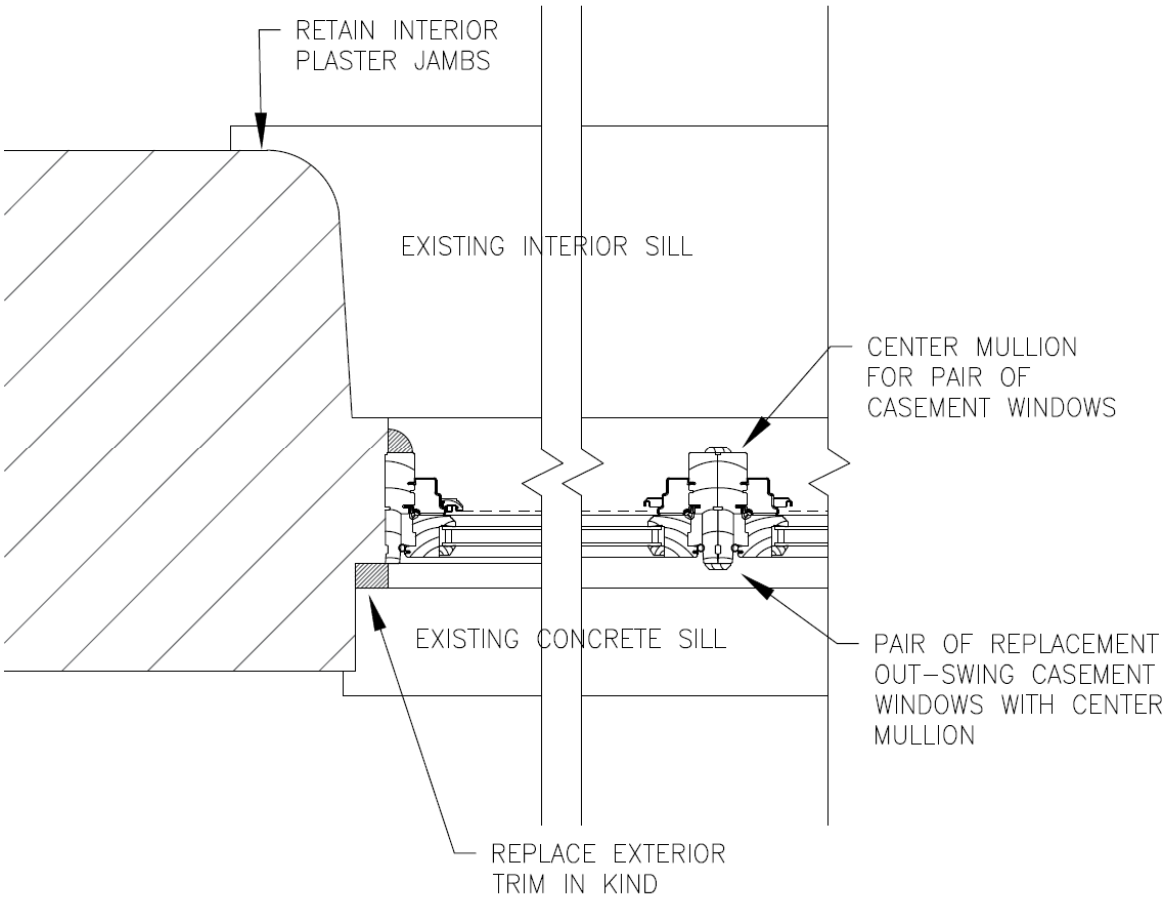
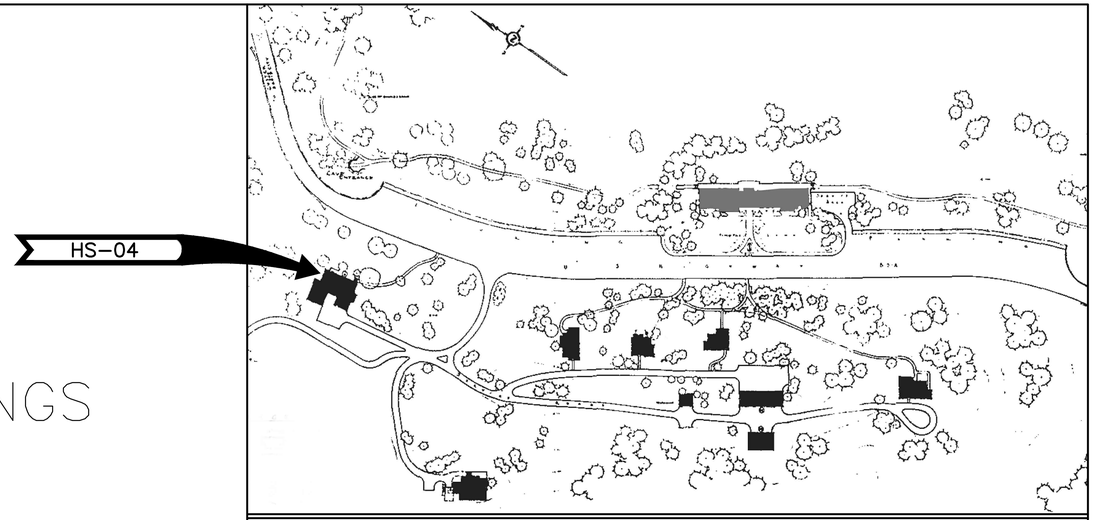


Figure T5. Jamb detail of a Marvin Ultimate Clad casement window at Window 106 location.

HS–04 FIRE OFFICE BUILDING
HISTORIC STRUCTURES REPORT
HISTORIC HOUSING AREA
WIND CAVE NATIONAL PARK

TREATMENT RECOMMENDATION DRAWINGS
HOT SPRINGS, SOUTH DAKOTA



HISTORIC HOUSING AREA, WIND CAVE NATIONAL PARK, HOT SPRINGS, SOUTH DAKOTA
(WIND CAVE NATIONAL PARK HISTORIC CONTEXTS AND NATIONAL REGISTER GUIDELINES REPORT, 1992)



HS–04 FIRE OFFICE BUILDING (SRJA 2014)

INDEX OF DRAWINGS

00 COVER

ARCHITECTURAL – IMMEDIATE REPAIRS
TA0 BASEMENT/FOUNDATION FLOOR PLAN
TA1 FIRST FLOOR PLAN
TA2 SECOND FLOOR PLAN
TA3 ROOF PLAN
TA4 EAST ELEVATION
TA5 SOUTH ELEVATION
TA6 WEST ELEVATION
TA7 NORTH ELEVATION

STRUCTURAL – IMMEDIATE REPAIRS
TS0 BASEMENT/FOUNDATION FLOOR PLAN
TS1 FIRST LEVEL FRAMING PLAN
TS2 ROOF FRAMING PLAN
TS3 STRUCTURAL DETAILS

ARCHITECTURAL – LONG TERM RECOMMENDATIONS
TA8 BASEMENT/FOUNDATION FLOOR DEMOLITION PLAN
TA9 BASEMENT/FOUNDATION FLOOR PLAN
TA10 FIRST FLOOR DEMOLITION PLAN
TA11 FIRST FLOOR PLAN
TA12 SECOND FLOOR DEMOLITION PLAN
TA13 SECOND FLOOR PLAN

HISTORIC STRUCTURES REPORT

UNITED STATES
DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE
DENVER SERVICE CENTER

TITLE OF PROJECT
TREATMENT RECOMMENDATION DRAWINGS
HS–04
FIRE OFFICE BUILDING
HISTORIC HOUSING AREA
WIND CAVE NATIONAL PARK

REGION: MIDWEST | COUNTY: CUSTER | STATE: SOUTH DAKOTA

DRAWING NO. 108
128867

PMIS/PKG NO. 158029

SHEET 1 OF 19

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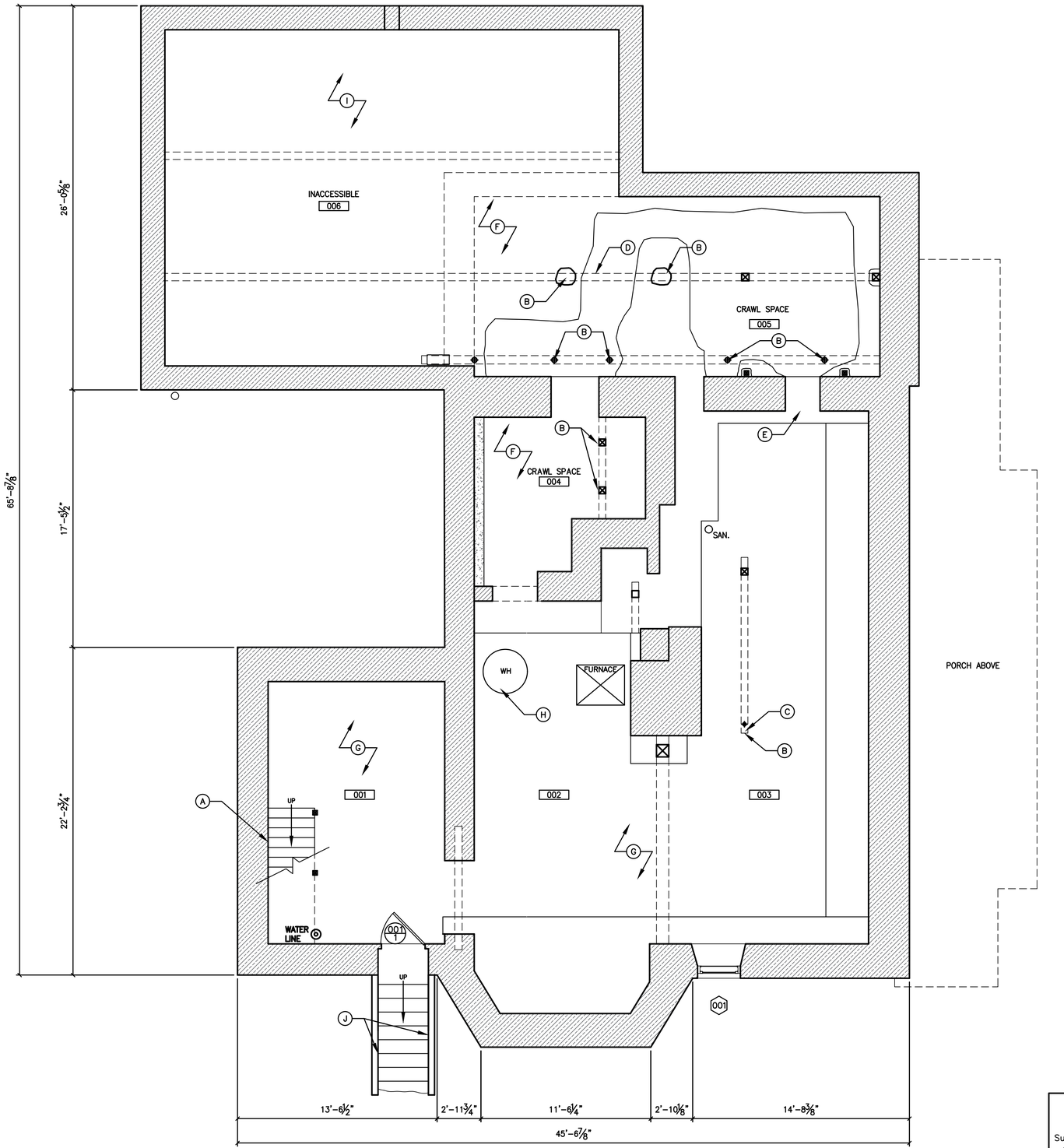

1 / TAO HS-04 IMMEDIATE TREATMENT REPAIRS – BASEMENT PLAN
1/4" = 1'-0"

GENERAL NOTES:

1. PERFORM HAZARDOUS MATERIALS TESTING BEFORE INITIATING ANY WORK.
2. INSECT RADON MITIGATION SYSTEM AND UPDATE, AS REQUIRED.

KEY NOTES:

A. INVESTIGATE VOID. INFILL AND PATCH STONE WALL.
B. MOVE POST AND REPLACE GIRDER. INSTALL NEW CONCRETE PAD, PER STRUCTURAL DRAWINGS.
C. EXTEND GIRDER, PER STRUCTURAL DRAWINGS.
D. INSTALL NEW GIRDER, PER STRUCTURAL DRAWINGS.
E. INSTALL NEW LINTEL AT OPENING.
F. INSULATE EXPOSED DUCTWORK IN CRAWL SPACE, MINIMUM R6.
G. REPLACE EXISTING RECEPTACLES IN BASEMENT WITH NEW GFCI'S, TYPICAL FIVE LOCATIONS.
H. INSTALL DISCONNECT AT WATER HEAT HEATER.
I. INSTALL NEW INSULATION IN FIRST FLOOR JOISTS, AS REQUIRED.
J. SPOT REPOINT INTERIOR WALLS.
K. REMOVE EXISTING METAL SASHES. INSTALL NEW HISTORICALLY APPROPRIATE ALUMINUM CLAD WOOD DOUBLE-HUNG, ONE-OVER-ONE WINDOWS.
L. EXTEND EXHAUST VENTS THROUGH ROOF.
M. INSTALL DUCTED EXHAUST VENT HOOD AT RANGE.
N. REMOVE WASP NEST FROM EXTERIOR LIGHT FIXTURE AT DOOR 112/1. INSPECT AND REPAIR , AS REQUIRED.
O. INSTALL CODE COMPLIANT EGRESS LIGHTING AT ALL EXTERIOR DOORS, TYPICAL FOUR LOCATIONS.
P. EXTERIOR LIGHTS CONTROL VIA PHOTO CELL.
Q. INSTALL NEW GALVANIZED PAINTED HANDRAIL.
R. PATCH AND REPAIR CRACKS IN CONCRETE PORCH AND STEPS. CLEAN AND SEAL.
S. INSTALL SOFT JOINT BETWEEN PORCH AND STUCCO WALL OR STONE.
T. RESTORE EXISTING WOOD DOUBLE-HUNG WINDOWS AND FRAMES. FABRICATE CUSTOM WOOD STORM WINDOWS.
U. REPAIR/SPLICE RAFTERS, PER STRUCTURAL DRAWINGS AND RECOMMENDATIONS.
V. REMOVE CONTAMINATED INSULATION. REPLACE WITH NEW R-49 INSULATION,PER MECHANICAL RECOMMENDATIONS.
W. INVESTIGATE WALL INSULATION. INSTALL ADDITIONAL INSULATION, AS REQUIRED.
X. INVESTIGATE EXISTING ATTIC LOUVER. REPAIR/REPLACE SCREEN, AS REQUIRED.
Y. EXTEND EXHAUST VENT THROUGH ROOF, TYPICAL THREE LOCATIONS.
Z. INSTALL EGRESS LADDER
AA. REMOVE EXISTING DOWNDRAFT CAP. CAP FINISH FLUE WITH RE-FINISHED METAL CAP PER SMACNA. CAP OTHER TWO FLUES TO MATCH.

DRAWING KEY:

MASONRY FOUNDATION WALLS

CONCRETE FOUNDATION WALLS

4 0 4 8
SCALE OF FEET

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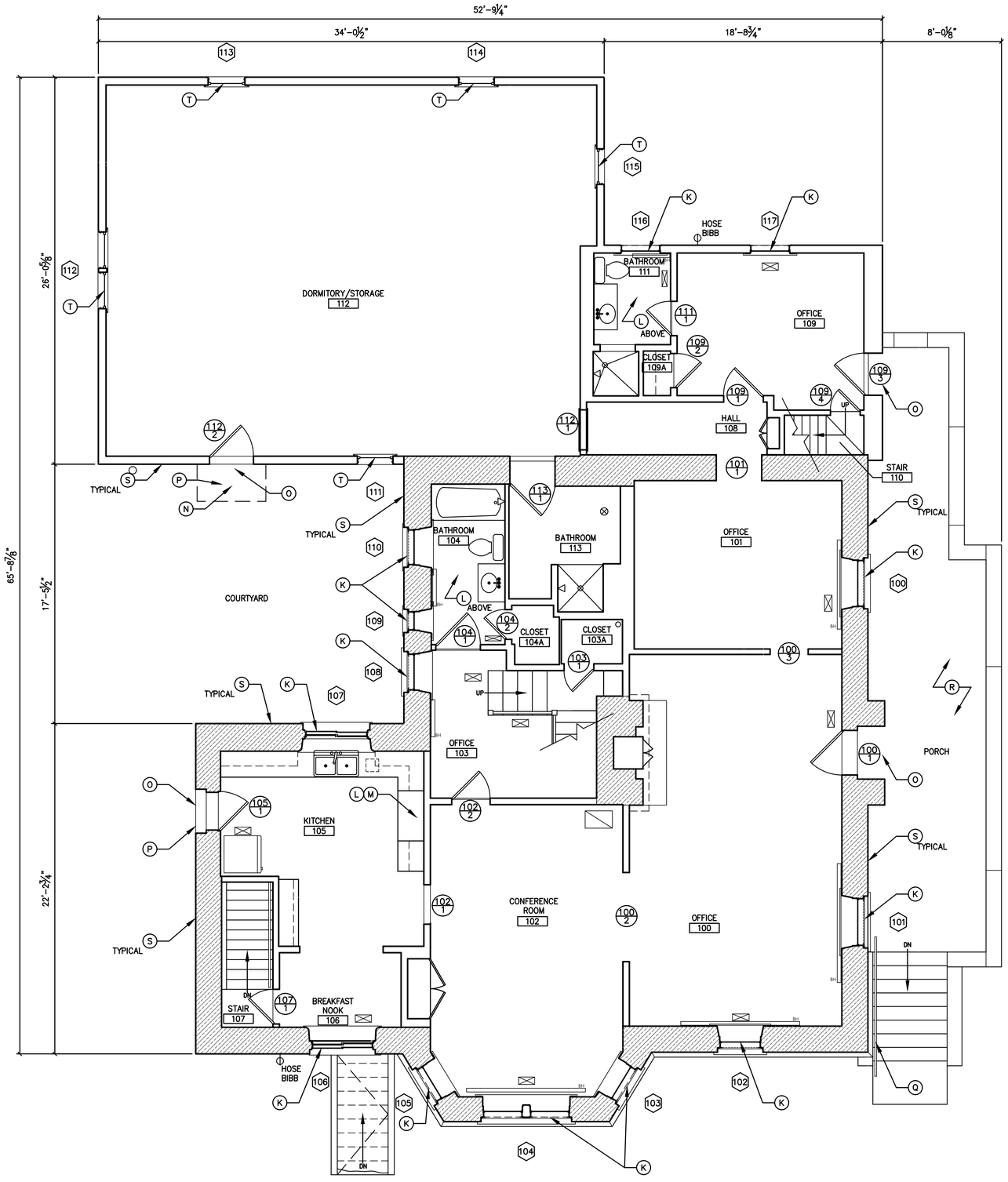
DRAWN: AG
TECH. REVIEW: AG
DATE: 1/27/16

SUB SHEET NO. TAO

TITLE OF SHEET
TREATMENT RECOMMENDATION DRAWINGS
HS-04
FIRE OFFICE BUILDING
HISTORIC HOUSING AREA
WIND CAVE NATIONAL PARK
HOT SPRINGS, SOUTH DAKOTA

DRAWING NO. 108
128867
PMIS/PKG NO. 158029
SHEET 2 OF 19



1 TA1 HS–04 IMMEDIATE TREATMENT REPAIRS – FIRST FLOOR PLAN
1/4" = 1'–0"

GENERAL NOTES:

1. PERFORM HAZARDOUS MATERIALS TESTING BEFORE INITIATING ANY WORK.
2. INSECT RADON MITIGATION SYSTEM AND UPDATE, AS REQUIRED.

KEY NOTES:

A. INVESTIGATE VOID. INFILL AND PATCH STONE WALL.
B. MOVE POST AND REPLACE GIRDER. INSTALL NEW CONCRETE PAD, PER STRUCTURAL DRAWINGS.
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DRAWING KEY:

MASONRY FOUNDATION WALLS

4 0 4 8
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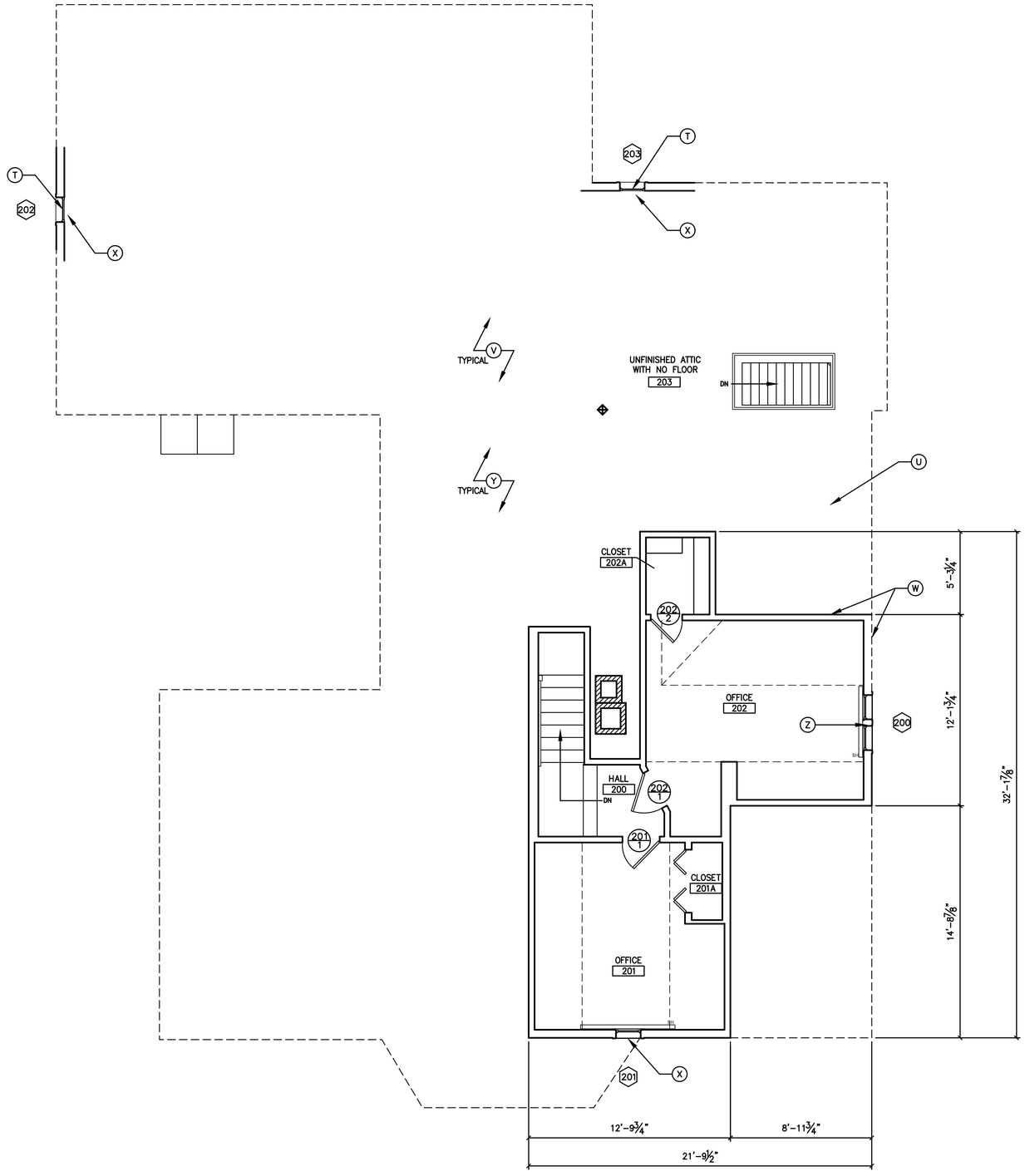
SUB SHEET NO. TA1

TITLE OF SHEET
TREATMENT RECOMMENDATION DRAWINGS
HS–04
FIRE OFFICE BUILDING
HISTORIC HOUSING AREA
WIND CAVE NATIONAL PARK
HOT SPRINGS, SOUTH DAKOTA

DRAWING NO. 108 128867
PMIS/PKG NO. 158029
SHEET 3 OF 19



1 / TA2 HS-04 IMMEDIATE TREATMENT REPAIRS – SECOND FLOOR PLAN
1/4" = 1'-0"

4 0 4 8
SCALE OF FEET

GENERAL NOTES:

1. PERFORM HAZARDOUS MATERIALS TESTING BEFORE INITIATING ANY WORK.
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KEY NOTES:

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N. REMOVE WASP NEST FROM EXTERIOR LIGHT FIXTURE AT DOOR 112/1. INSPECT AND REPAIR , AS REQUIRED.
O. INSTALL CODE COMPLIANT EGRESS LIGHTING AT ALL EXTERIOR DOORS, TYPICAL FOUR LOCATIONS.
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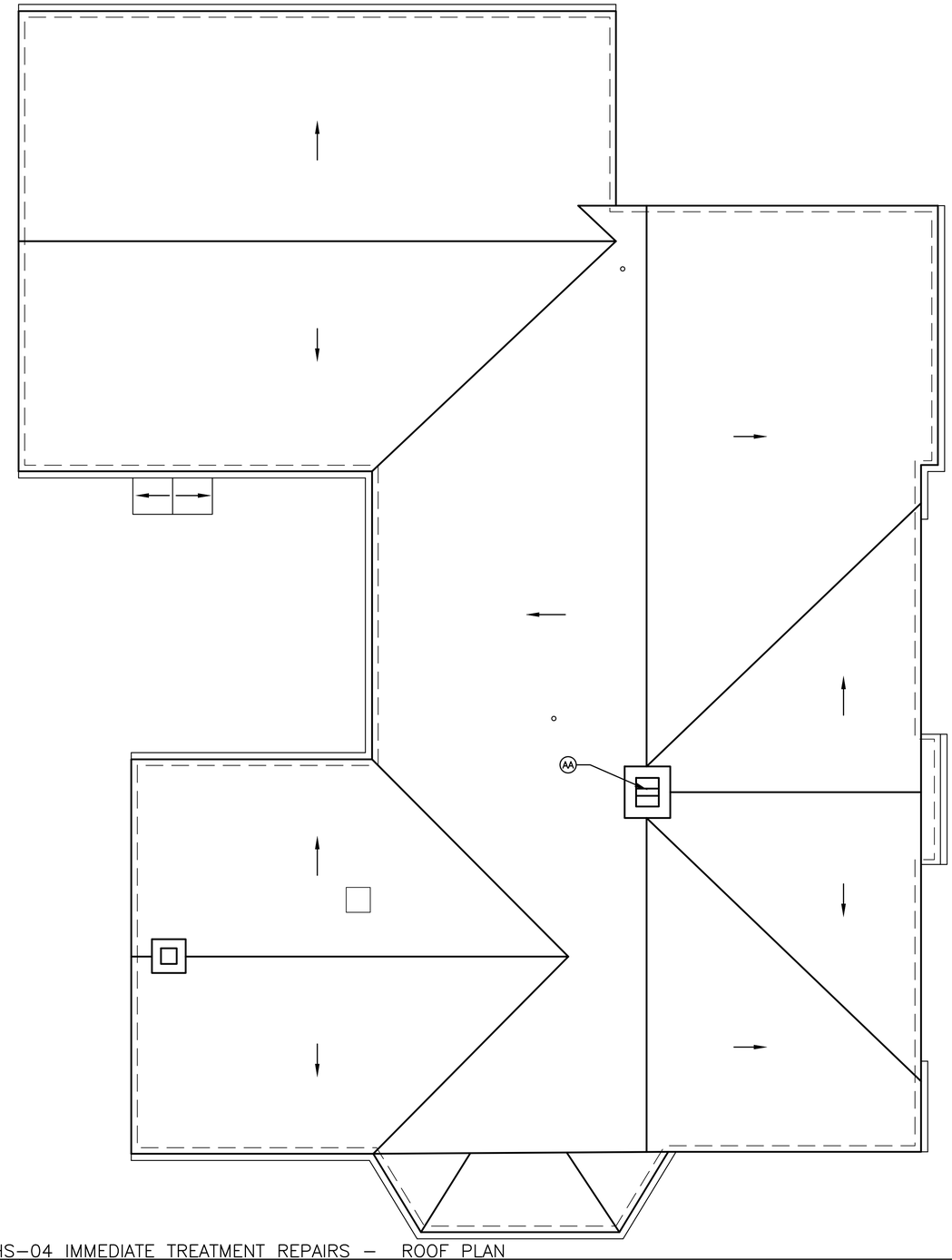
DATE: 1/27/16

SUB SHEET NO. TA2

TITLE OF SHEET
TREATMENT RECOMMENDATION DRAWINGS
HS-04
FIRE OFFICE BUILDING
HISTORIC HOUSING AREA
WIND CAVE NATIONAL PARK
HOT SPRINGS, SOUTH DAKOTA

DRAWING NO. 108 128867
PMIS/PKG NO. 158029
SHEET 4 OF 19



1 / TA3 HS-04 IMMEDIATE TREATMENT REPAIRS – ROOF PLAN
1/4" = 1'-0"

4 0 4 8
SCALE OF FEET

GENERAL NOTES:

1. PERFORM HAZARDOUS MATERIALS TESTING BEFORE INITIATING ANY WORK.
2. INSECT RADON MITIGATION SYSTEM AND UPDATE, AS REQUIRED.

KEY NOTES:

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D. INSTALL NEW GIRDER, PER STRUCTURAL DRAWINGS.
E. INSTALL NEW LINTEL AT OPENING.
F. INSULATE EXPOSED DUCTWORK IN CRAWL SPACE, MINIMUM R6.
G. REPLACE EXISTING RECEPTACLES IN BASEMENT WITH NEW GFCI'S, TYPICAL FIVE LOCATIONS.
H. INSTALL DISCONNECT AT WATER HEAT HEATER.
I. INSTALL NEW INSULATION IN FIRST FLOOR JOISTS, AS REQUIRED.
J. SPOT REPOINT INTERIOR WALLS.
K. REMOVE EXISTING METAL SASHES. INSTALL NEW HISTORICALLY APPROPRIATE ALUMINUM CLAD WOOD DOUBLE-HUNG, ONE-OVER-ONE WINDOWS.
L. EXTEND EXHAUST VENTS THROUGH ROOF.
M. INSTALL DUCTED EXHAUST VENT HOOD AT RANGE.
N. REMOVE WASP NEST FROM EXTERIOR LIGHT FIXTURE AT DOOR 112/1. INSPECT AND REPAIR , AS REQUIRED.
O. INSTALL CODE COMPLIANT EGRESS LIGHTING AT ALL EXTERIOR DOORS, TYPICAL FOUR LOCATIONS.
P. EXTERIOR LIGHTS CONTROL VIA PHOTO CELL.
Q. INSTALL NEW GALVANIZED PAINTED HANDRAIL.
R. PATCH AND REPAIR CRACKS IN CONCRETE PORCH AND STEPS. CLEAN AND SEAL.
S. INSTALL SOFT JOINT BETWEEN PORCH AND STUCCO WALL OR STONE.
T. RESTORE EXISTING WOOD DOUBLE-HUNG WINDOWS AND FRAMES. FABRICATE CUSTOM WOOD STORM WINDOWS.
U. REPAIR/SPLICE RAFTERS, PER STRUCTURAL DRAWINGS AND RECOMMENDATIONS.
V. REMOVE CONTAMINATED INSULATION. REPLACE WITH NEW R-49 INSULATION,PER MECHANICAL RECOMMENDATIONS.
W. INVESTIGATE WALL INSULATION. INSTALL ADDITIONAL INSULATION, AS REQUIRED.
X. INVESTIGATE EXISTING ATTIC LOUVER. REPAIR/REPLACE SCREEN, AS REQUIRED.
Y. EXTEND EXHAUST VENT THROUGH ROOF, TYPICAL THREE LOCATIONS.
Z. INSTALL EGRESS LADDER
AA. REMOVE EXISTING DOWNDRAFT CAP. CAP FINISH FLUE WITH RE-FINISHED METAL CAP PER SMACNA. CAP OTHER TWO FLUES TO MATCH.

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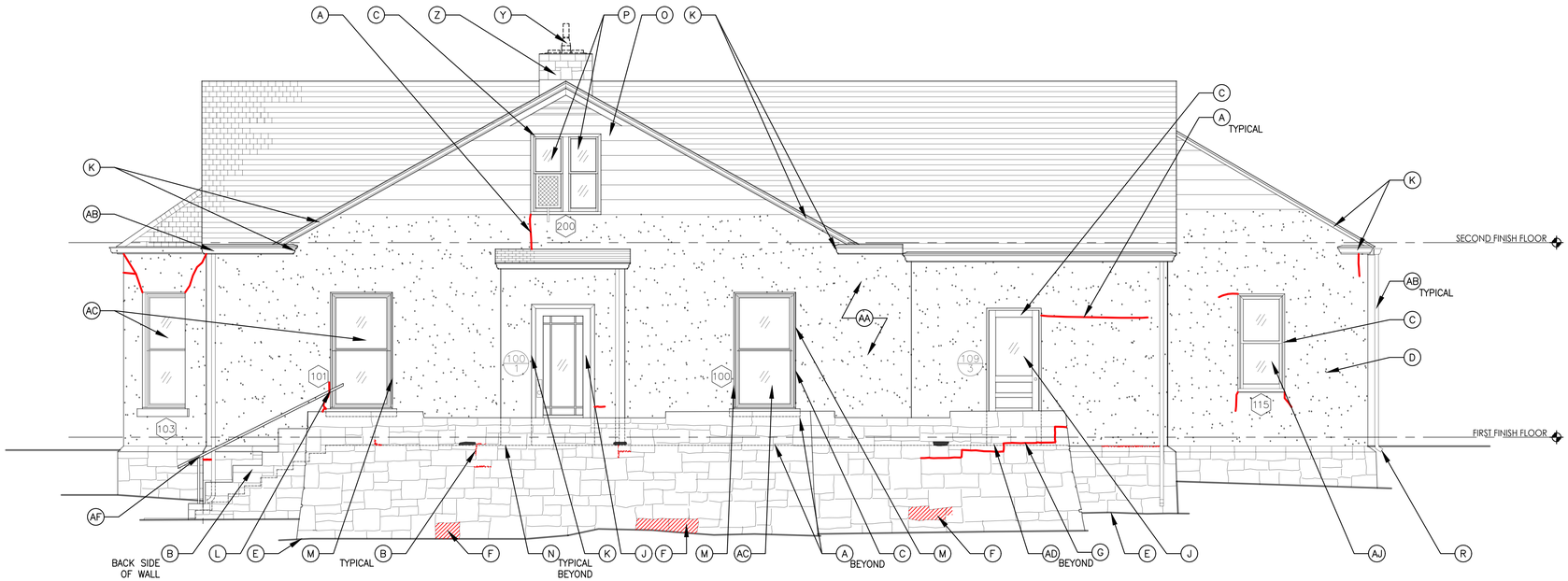
DATE: 1/27/16

SUB SHEET NO. TA3

TITLE OF SHEET
TREATMENT RECOMMENDATION DRAWINGS
HS-04
FIRE OFFICE BUILDING
HISTORIC HOUSING AREA
WIND CAVE NATIONAL PARK
HOT SPRINGS, SOUTH DAKOTA

DRAWING NO. 108 / 128867
PMIS/PKG NO. 158029
SHEET 5 OF 19



GENERAL NOTES:

1. PERFORM HAZARDOUS MATERIALS TESTING AND REQUIRED ABATEMENT BEFORE INITIATING ANY WORK.
2. SPOT REPOINT AS REQUIRED. NEW MORTAR SHOULD MATCH EXISTING IN COMPOSITION, COLOR, TEXTURE AND PROFILE.
3. CLEAN ALL STONE TO REMOVE DIRT AND BIOLOGICAL GROWTH

KEY NOTES:

A. PATCH AND REPAIR CRACK IN STUCCO.
B. REPOINT EXISTING MORTAR JOINTS.
C. PREP, PRIME AND REPAINT.
D. REPAIR CRAZING STUCCO.
E. REMOVE VEGETATION THAT IS GROWING DIRECTLY AGAINST THE FOUNDATION.
F. REMOVE DETERIORATED STONE AND REPLACE IN-KIND.
G. PATCH AND REPAIR CRACK IN MORTAR JOINT.
H. INSTALL SOFT JOINT BETWEEN THE CONCRETE STEPS AND THE STONE FOUNDATION WALL.
I. REPOINT BACK SIDE OF WALL.
J. REPLACE STORM/SCREEN DOOR.
K. PREP, PRIME AND PAINT 100% WOOD TRIM.
L. REPAIR DETERIORATED STUCCO.
M. REPAIR DETERIORATED WOOD TRIM.
N. INSTALL SOFT JOINT BETWEEN THE CONCRETE PAD AND THE STONE FOUNDATION.
O. PREP AND STAIN WOOD SIDING.
P. INSTALL NEW STORM WINDOWS.
Q. REPLACE MISSING CORNICE RETURN AND FLASHING. PREP, PRIME AND PAINT.
R. INSTALL AN EXTENSION ON THE DOWNSPOUT.
S. REMOVE EXISTING BROKEN DRYER VENT. PATCH WALL ON INTERIOR AND EXTERIOR, IN-KIND.
T. REMOVE AND RELOCATED SPLASH BLOCK.
U. REMOVE PIPE. PATCH AND REPAIR WALL.
V. PATCH AND REPAIR HOLE IN STUCCO.
W. RE-GRADE A PORTION OF THE NORTH AND WEST ELEVATION TO A MINIMUM OF 6" BELOW THE FINISH FLOOR. INSTALL SWALE AND FRENCH DRAIN TO DAYLIGHT.
X. UNBLOCK BASEMENT VENT AND INSTALL NEW SCREENING.
Y. REMOVE DOWNDRAFT FLUE. INSTALL THREE NEW PRE-FINISHED METAL FLUE CAPS, PER SMACNA.
Z. CLEAN AND REPOINT CHIMNEY. REPAIR MORTAR WASH.
AA. PREP, PRIME AND PAINT 100% OF THE STUCCO.
AB. PREP, PRIME AND PAINT 100% OF THE GUTTERS AND DOWNSPOUTS.
AC. REMOVE EXISTING METAL SASHES. INSTALL NEW HISTORICALLY APPROPRIATE ALUMINUM CLAD WOOD DOUBLE-HUNG, ONE-OVER-ONE WINDOWS.
AD. REPLACE DOOR THRESHOLD.
AE. INSPECT LOUVER. REPLACE/REPAIR SCREENING.
AF. INSTALL NEW GALVANIZED PAINTED HANDRAIL.
AG. RELOCATE EXPOSED WIRING TO INTERIOR.
AH. REMOVE ANTENNAE.
AI. REPAIR CONCRETE/STONE FOUNDATION.
AJ. RESTORE EXISTING WOOD DOUNBLE-HUNG WINDOWS AND FRAMES. FABRICATE CUSTOM WOOD STORM WINDOWS.
AK. INSTALL PRE-FINISHED METAL FLUE CAP.
AL. REMOVE EXISTING METAL BYPASS WINDOWS. INSTALL NEW HISTORICALLY APPROPRIATE CENTER MULLION, AS INDICATED IN THE 1935 DRAWINGS. INVESTIGATE JAMBS FOR EVIDENCE OF PREVIOUS WINDOW STYLE (EITHER DOUBLE-HUNG OR OUT-SWING CASEMENT). HISTORIC PHOTOGRAPHS OF THESE TWO LOCATIONS ARE UNCLEAR.

1 / TA4 HS-04 IMMEDIATE TREATMENT REPAIRS – EAST ELEVATION
1/4" = 1'-0"

4 0 4 8
SCALE OF FEET

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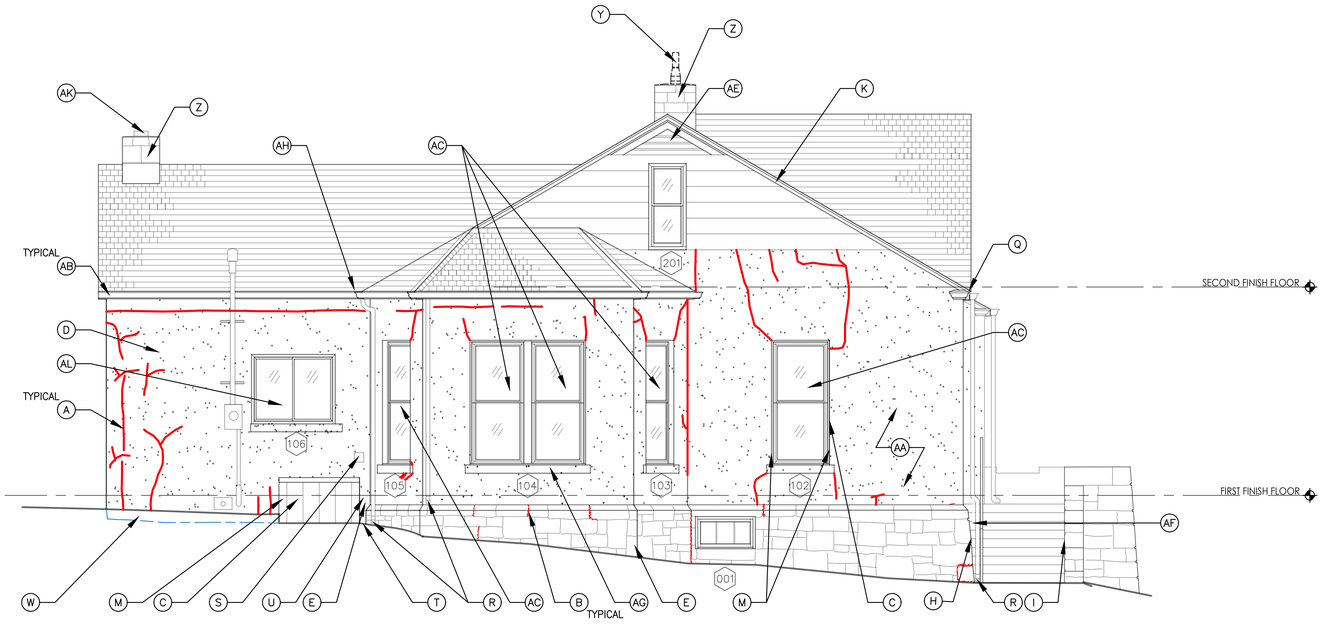
DRAWN: AG
TECH. REVIEW: AG
DATE: 1/27/16

SUB SHEET NO. TA4

TITLE OF SHEET
TREATMENT RECOMMENDATION DRAWINGS
HS-04
FIRE OFFICE BUILDING
HISTORIC HOUSING AREA
WIND CAVE NATIONAL PARK
HOT SPRINGS, SOUTH DAKOTA

DRAWING NO. 108 128867
PMIS/PKG NO. 158029
SHEET 6 OF 19



1 TA5 HS–04 IMMEDIATE TREATMENT REPAIRS – SOUTH ELEVATION

1/4" = 1'–0"

4 0 4 8

SCALE OF FEET

GENERAL NOTES:

1. PERFORM HAZARDOUS MATERIALS TESTING AND REQUIRED ABATEMENT BEFORE INITIATING ANY WORK.
2. SPOT REPOINT AS REQUIRED. NEW MORTAR SHOULD MATCH EXISTING IN COMPOSITION, COLOR, TEXTURE AND PROFILE.
3. CLEAN ALL STONE TO REMOVE DIRT AND BIOLOGICAL GROWTH

KEY NOTES:

A. PATCH AND REPAIR CRACK IN STUCCO.
B. REPOINT EXISTING MORTAR JOINTS.
C. PREP, PRIME AND REPAINT.
D. REPAIR CRAZING STUCCO.
E. REMOVE VEGETATION THAT IS GROWING DIRECTLY AGAINST THE FOUNDATION.
F. REMOVE DETERIORATED STONE AND REPLACE IN–KIND.
G. PATCH AND REPAIR CRACK IN MORTAR JOINT.
H. INSTALL SOFT JOINT BETWEEN THE CONCRETE STEPS AND THE STONE FOUNDATION WALL.
I. REPOINT BACK SIDE OF WALL.
J. REPLACE STORM/SCREEN DOOR.
K. PREP, PRIME AND PAINT 100% WOOD TRIM.
L. REPAIR DETERIORATED STUCCO.
M. REPAIR DETERIORATED WOOD TRIM.
N. INSTALL SOFT JOINT BETWEEN THE CONCRETE PAD AND THE STONE FOUNDATION.
O. PREP AND STAIN WOOD SIDING.
P. INSTALL NEW STORM WINDOWS.
Q. REPLACE MISSING CORNICE RETURN AND FLASHING. PREP, PRIME AND PAINT.
R. INSTALL AN EXTENSION ON THE DOWNSPOUT.
S. REMOVE EXISTING BROKEN DRYER VENT. PATCH WALL ON INTERIOR AND EXTERIOR, IN–KIND.
T. REMOVE AND RELOCATED SPLASH BLOCK.
U. REMOVE PIPE. PATCH AND REPAIR WALL.
V. PATCH AND REPAIR HOLE IN STUCCO.
W. RE–GRADE A PORTION OF THE NORTH AND WEST ELEVATION TO A MINIMUM OF 6" BELOW THE FINISH FLOOR. INSTALL SWALE AND FRENCH DRAIN TO DAYLIGHT.
X. UNBLOCK BASEMENT VENT AND INSTALL NEW SCREENING.
Y. REMOVE DOWNDRAFT FLUE. INSTALL THREE NEW PRE–FINISHED METAL FLUE CAPS, PER SMACNA.
Z. CLEAN AND REPOINT CHIMNEY. REPAIR MORTAR WASH.
AA. PREP, PRIME AND PAINT 100% OF THE STUCCO.
AB. PREP, PRIME AND PAINT 100% OF THE GUTTERS AND DOWNSPOUTS.
AC. REMOVE EXISTING METAL SASHES. INSTALL NEW HISTORICALLY APPROPRIATE ALUMINUM CLAD WOOD DOUBLE–HUNG, ONE–OVER–ONE WINDOWS.
AD. REPLACE DOOR THRESHOLD.
AE. INSPECT LOUVER. REPLACE/REPAIR SCREENING.
AF. INSTALL NEW GALVANIZED PAINTED HANDRAIL.
AG. RELOCATE EXPOSED WIRING TO INTERIOR.
AH. REMOVE ANTENNAE.
AI. REPAIR CONCRETE/STONE FOUNDATION.
AJ. RESTORE EXISTING WOOD DOUNBLE–HUNG WINDOWS AND FRAMES. FABRICATE CUSTOM WOOD STORM WINDOWS.
AK. INSTALL PRE–FINISHED METAL FLUE CAP.
AL. REMOVE EXISTING METAL BYPASS WINDOWS. INSTALL NEW HISTORICALLY APPROPRIATE CENTER MULLION, AS INDICATED IN THE 1935 DRAWINGS. INVESTIGATE JAMBS FOR EVIDENCE OF PREVIOUS WINDOW STYLE (EITHER DOUBLE–HUNG OR OUT–SWING CASEMENT). HISTORIC PHOTOGRAPHS OF THESE TWO LOCATIONS ARE UNCLEAR.

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DATE: 1/27/16

SUB SHEET NO. TA5

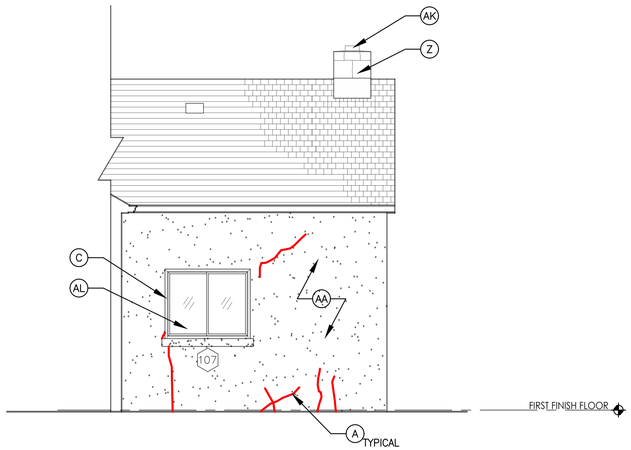
TITLE OF SHEET
TREATMENT RECOMMENDATION DRAWINGS
HS–04
FIRE OFFICE BUILDING
HISTORIC HOUSING AREA
WIND CAVE NATIONAL PARK
HOT SPRINGS, SOUTH DAKOTA

DRAWING NO. 108 128867
PMIS/PKG NO. 158029
SHEET 7 OF 19



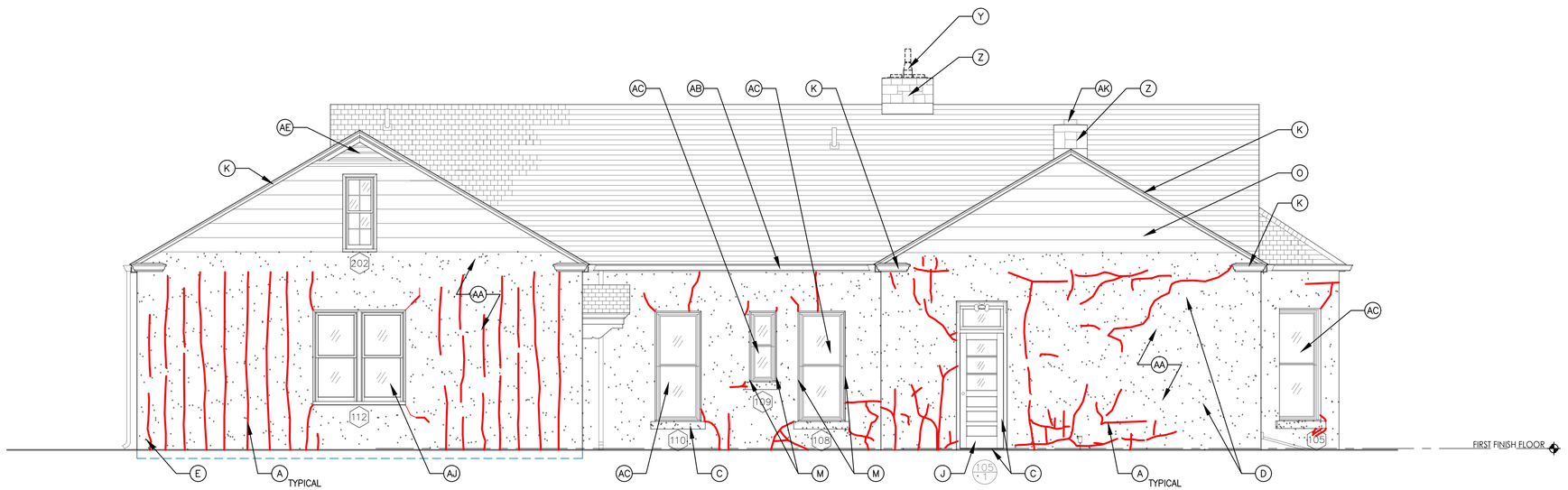
2 A6 HS–04 IMMEDIATE TREATMENT REPAIRS – WEST ELEVATION NORTH INSET
1/4" = 1'–0"

4 0 4 8
SCALE OF FEET



3 A6 HS–04 IMMEDIATE TREATMENT REPAIRS – WEST ELEVATION SOUTH INSET
1/4" = 1'–0"

4 0 4 8
SCALE OF FEET



1 TA6 HS–04 IMMEDIATE TREATMENT REPAIRS – WEST ELEVATION
1/4" = 1'–0"

4 0 4 8
SCALE OF FEET

GENERAL NOTES:

1. PERFORM HAZARDOUS MATERIALS TESTING AND REQUIRED ABATEMENT BEFORE INITIATING ANY WORK.
2. SPOT REPOINT AS REQUIRED. NEW MORTAR SHOULD MATCH EXISTING IN COMPOSITION, COLOR, TEXTURE AND PROFILE.
3. CLEAN ALL STONE TO REMOVE DIRT AND BIOLOGICAL GROWTH

KEY NOTES:

A. PATCH AND REPAIR CRACK IN STUCCO.
B. REPOINT EXISTING MORTAR JOINTS.
C. PREP, PRIME AND REPAINT.
D. REPAIR CRAZING STUCCO.
E. REMOVE VEGETATION THAT IS GROWING DIRECTLY AGAINST THE FOUNDATION.
F. REMOVE DETERIORATED STONE AND REPLACE IN–KIND.
G. PATCH AND REPAIR CRACK IN MORTAR JOINT.
H. INSTALL SOFT JOINT BETWEEN THE CONCRETE STEPS AND THE STONE FOUNDATION WALL.
I. REPOINT BACK SIDE OF WALL.
J. REPLACE STORM/SCREEN DOOR.
K. PREP, PRIME AND PAINT 100% WOOD TRIM.
L. REPAIR DETERIORATED STUCCO.
M. REPAIR DETERIORATED WOOD TRIM.
N. INSTALL SOFT JOINT BETWEEN THE CONCRETE PAD AND THE STONE FOUNDATION.
O. PREP AND STAIN WOOD SIDING.
P. INSTALL NEW STORM WINDOWS.
Q. REPLACE MISSING CORNICE RETURN AND FLASHING. PREP, PRIME AND PAINT.
R. INSTALL AN EXTENSION ON THE DOWNSPOUT.
S. REMOVE EXISTING BROKEN DRYER VENT. PATCH WALL ON INTERIOR AND EXTERIOR, IN–KIND.
T. REMOVE AND RELOCATED SPLASH BLOCK.
U. REMOVE PIPE. PATCH AND REPAIR WALL.
V. PATCH AND REPAIR HOLE IN STUCCO.
W. RE–GRADE A PORTION OF THE NORTH AND WEST ELEVATION TO A MINIMUM OF 6" BELOW THE FINISH FLOOR. INSTALL SWALE AND FRENCH DRAIN TO DAYLIGHT.
X. UNBLOCK BASEMENT VENT AND INSTALL NEW SCREENING.
Y. REMOVE DOWNDRAFT FLUE. INSTALL THREE NEW PRE–FINISHED METAL FLUE CAPS, PER SMACNA.
Z. CLEAN AND REPOINT CHIMNEY. REPAIR MORTAR WASH.
AA. PREP, PRIME AND PAINT 100% OF THE STUCCO.
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AF. INSTALL NEW GALVANIZED PAINTED HANDRAIL.
AG. RELOCATE EXPOSED WIRING TO INTERIOR.
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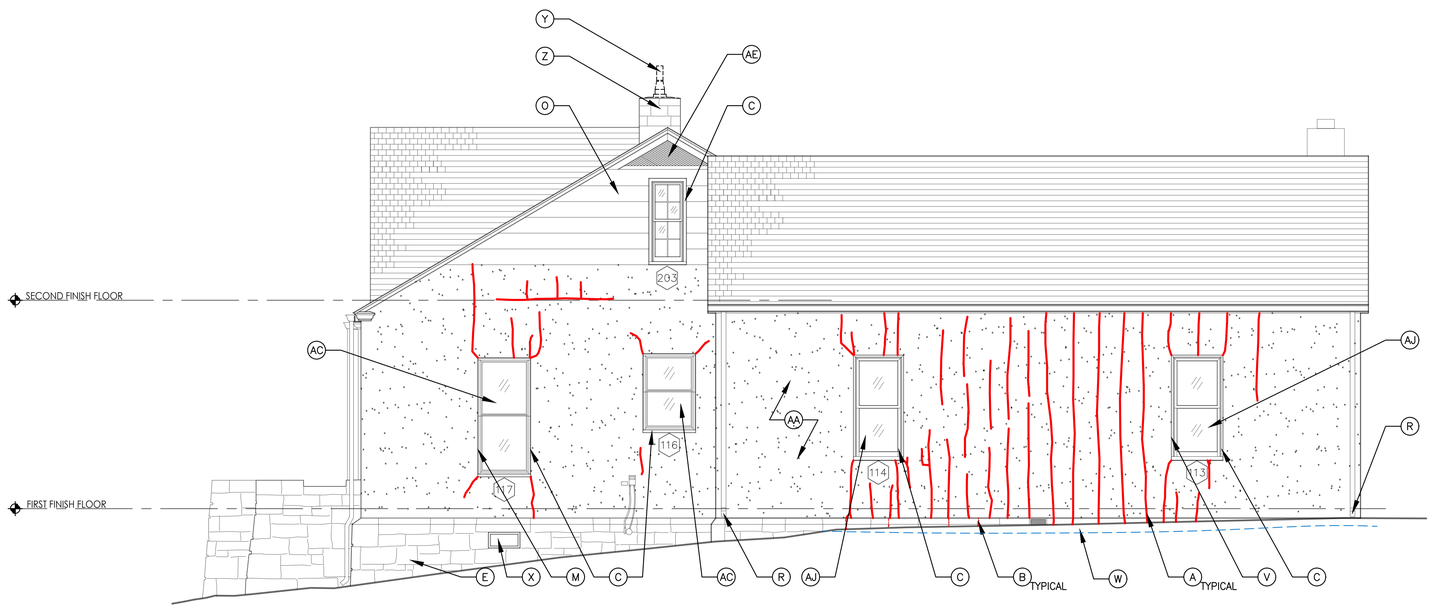
DRAWN: AG
TECH. REVIEW: AG
DATE: 1/27/16

SUB SHEET NO. TA6

TITLE OF SHEET
TREATMENT RECOMMENDATION DRAWINGS
HS–04
FIRE OFFICE BUILDING
HISTORIC HOUSING AREA
WIND CAVE NATIONAL PARK
HOT SPRINGS, SOUTH DAKOTA

DRAWING NO. 108
128867
PMIS/PKG NO. 158029
SHEET 8 OF 19



1 TA7 HS–04 IMMEDIATE TREATMENT REPAIRS –NORTH ELEVATION
1/4" = 1'–0"

4 0 4 8
SCALE OF FEET

GENERAL NOTES:

1. PERFORM HAZARDOUS MATERIALS TESTING AND REQUIRED ABATEMENT BEFORE INITIATING ANY WORK.
2. SPOT REPOINT AS REQUIRED. NEW MORTAR SHOULD MATCH EXISTING IN COMPOSITION, COLOR, TEXTURE AND PROFILE.
3. CLEAN ALL STONE TO REMOVE DIRT AND BIOLOGICAL GROWTH

KEY NOTES:

A. PATCH AND REPAIR CRACK IN STUCCO.
B. REPOINT EXISTING MORTAR JOINTS.
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E. REMOVE VEGETATION THAT IS GROWING DIRECTLY AGAINST THE FOUNDATION.
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G. PATCH AND REPAIR CRACK IN MORTAR JOINT.
H. INSTALL SOFT JOINT BETWEEN THE CONCRETE STEPS AND THE STONE FOUNDATION WALL.
I. REPOINT BACK SIDE OF WALL.
J. REPLACE STORM/SCREEN DOOR.
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M. REPAIR DETERIORATED WOOD TRIM.
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Q. REPLACE MISSING CORNICE RETURN AND FLASHING. PREP, PRIME AND PAINT.
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S. REMOVE EXISTING BROKEN DRYER VENT. PATCH WALL ON INTERIOR AND EXTERIOR, IN–KIND.
T. REMOVE AND RELOCATED SPLASH BLOCK.
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Y. REMOVE DOWNDRAFT FLUE. INSTALL THREE NEW PRE–FINISHED METAL FLUE CAPS, PER SMACNA.
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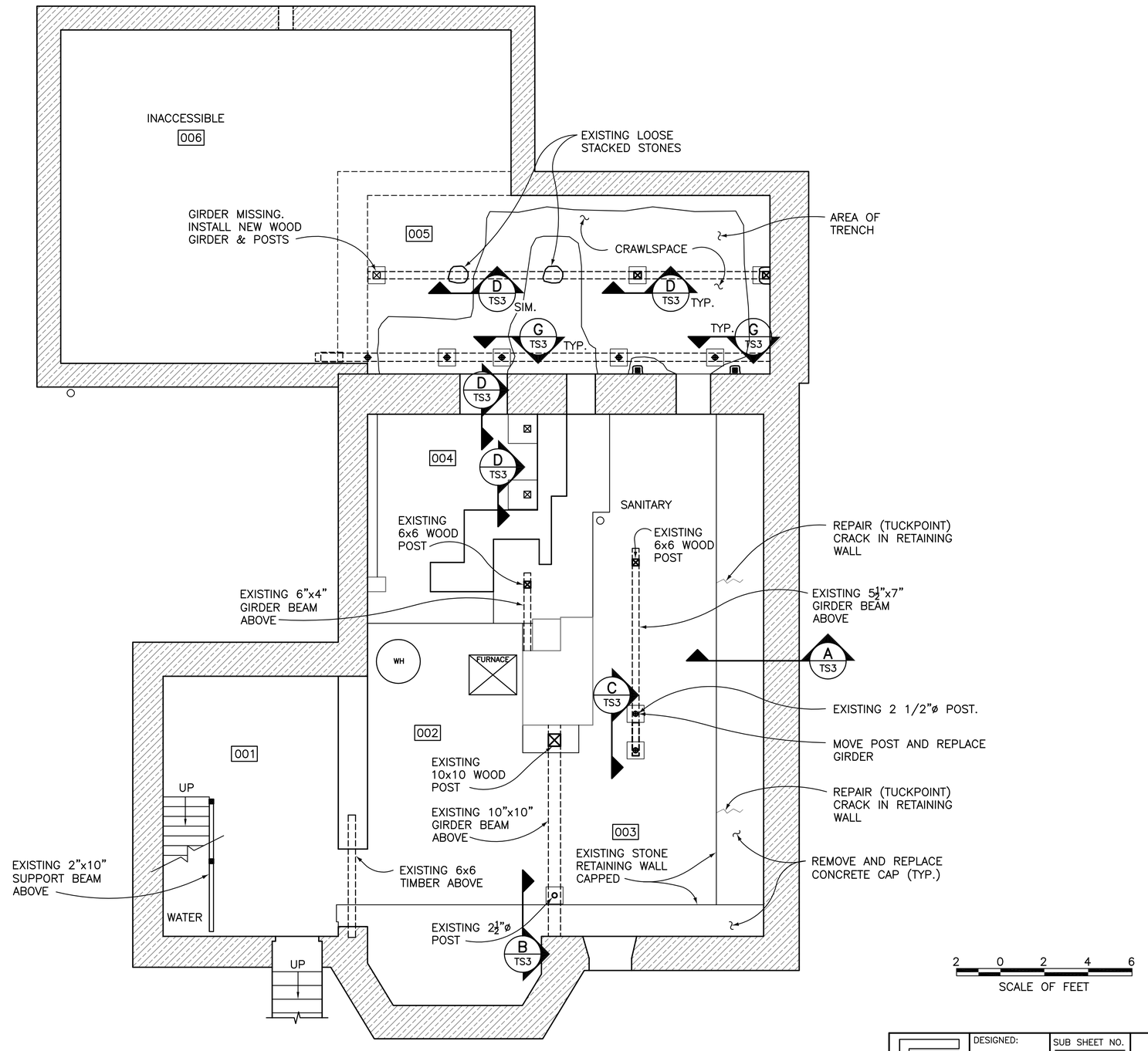
TECH. REVIEW: AG
DATE: 1/27/16

SUB SHEET NO. TA7

TITLE OF SHEET
TREATMENT RECOMMENDATION DRAWINGS
HS–04
FIRE OFFICE BUILDING
HISTORIC HOUSING AREA
WIND CAVE NATIONAL PARK
HOT SPRINGS, SOUTH DAKOTA

DRAWING NO. 108 / 128867
PMIS/PKG NO. 158029
SHEET 9 OF 19



LEGEND

- EXISTING STONE FOUNDATION
- EXISTING CONCRETE WALL

1 / TS0 BASEMENT FOUNDATION PLAN
1/4"=1'-0"

STRUCTURAL ENGINEERING ASSOCIATES, INC.
1000 WALNUT
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Ph. 816-421-1042
Fax 816-421-1061

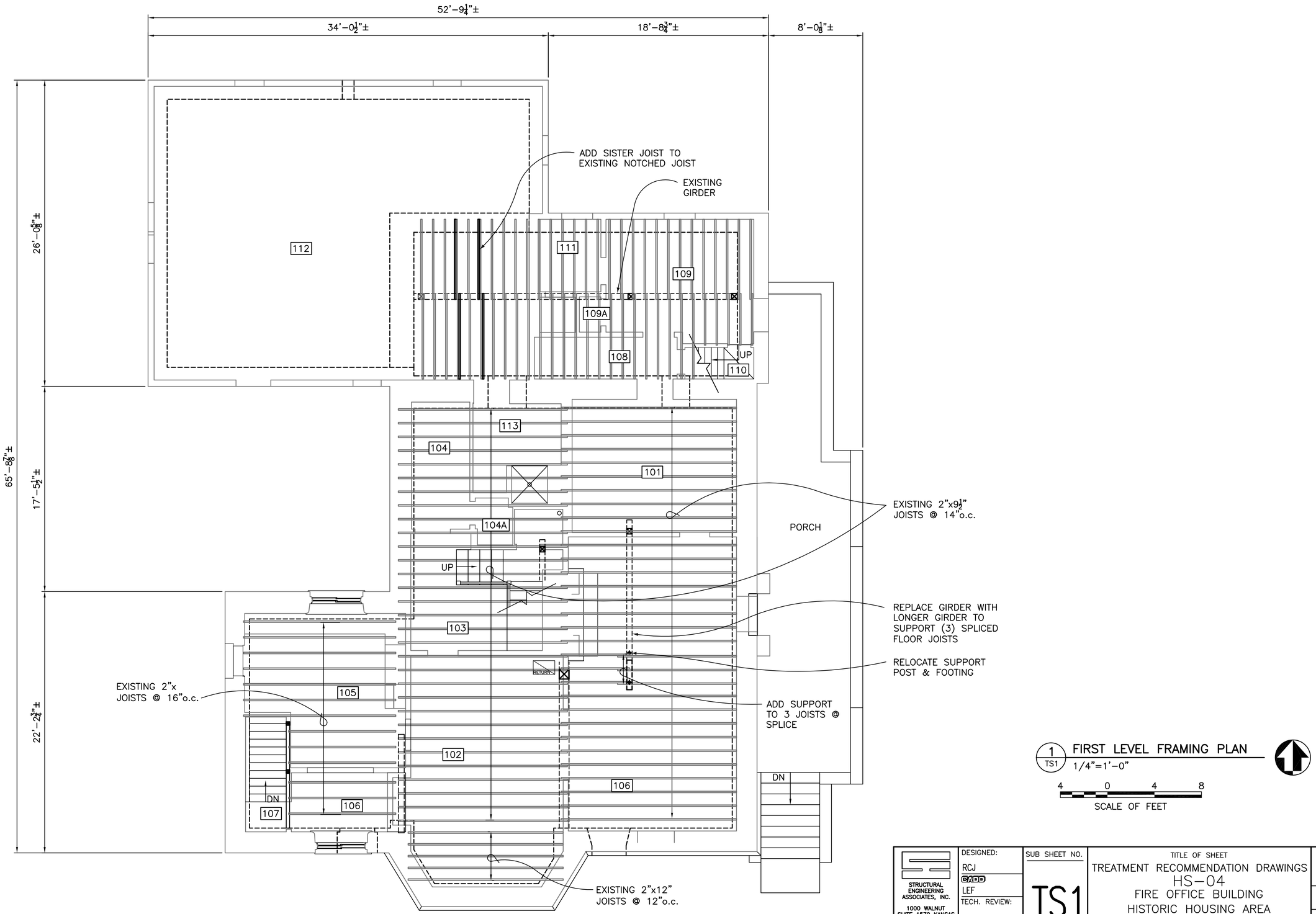
DESIGNED: RCJ
CADD: LEF
TECH. REVIEW:
DATE: 1/27/16

SUB SHEET NO. TS0

TITLE OF SHEET
TREATMENT RECOMMENDATION DRAWINGS
HS-04
FIRE OFFICE BUILDING
HISTORIC HOUSING AREA
WIND CAVE NATIONAL PARK
HOT SPRINGS, SOUTH DAKOTA

DRAWING NO. 108 / 128867
PMIS/PKG NO. 158029
SHEET 10 OF 19

3/30/15 08:52 LFRISBIE R19 G:\2014147\DRAWINGS\02 TREATMENT DRAWINGS\XX- WIND CAVE- SECOND SHT.DWG



1 TS1 FIRST LEVEL FRAMING PLAN

1/4"=1'-0"

4 0 4 8

SCALE OF FEET

STRUCTURAL ENGINEERING ASSOCIATES, INC.
1000 WALNUT
SUITE 1570 KANSAS CITY, MO 64106
Ph. 816-421-1042
Fax 816-421-1061

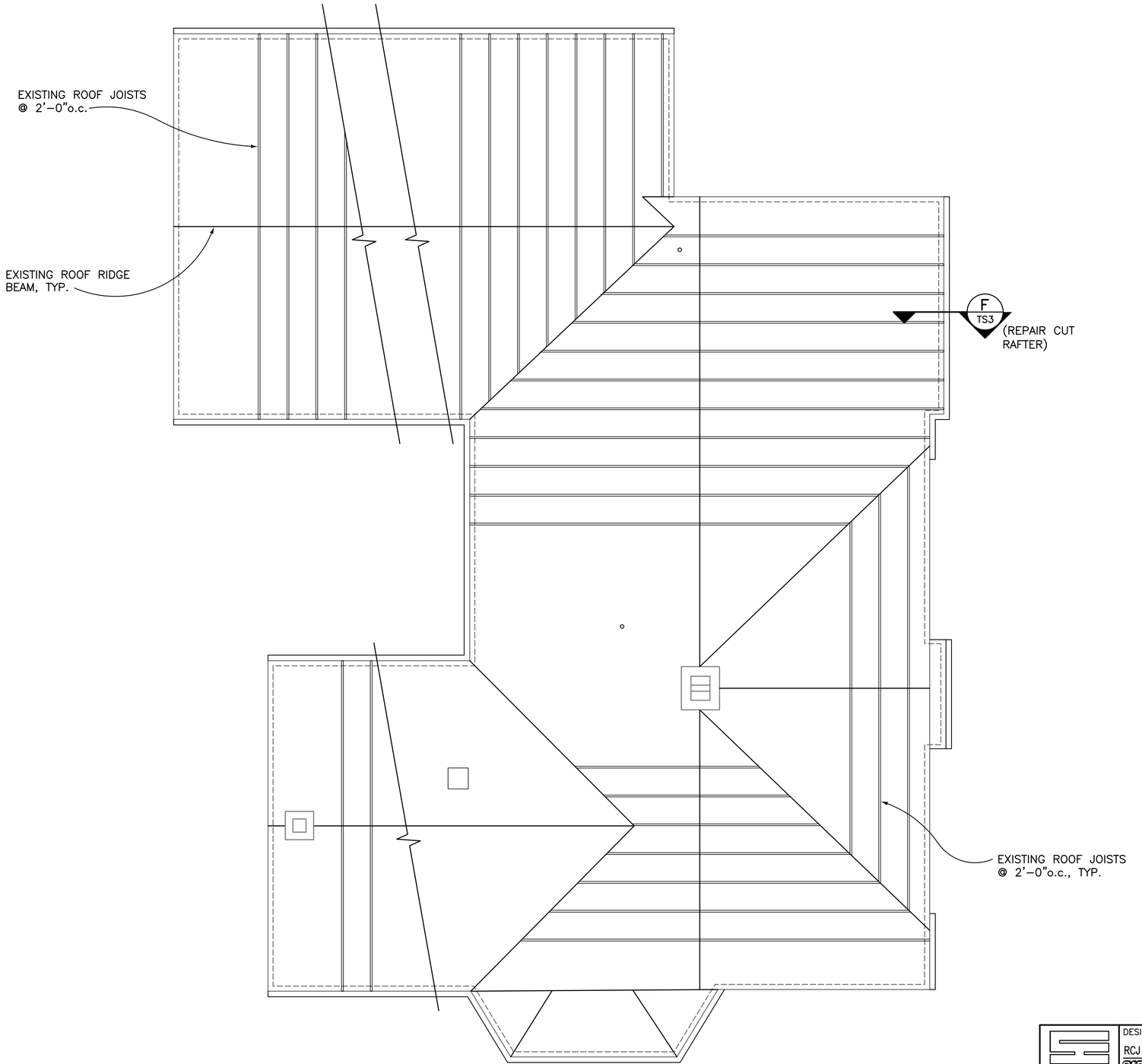
DESIGNED: RCJ
DRAWN: LEF
TECH. REVIEW:
DATE: 1/27/16

SUB SHEET NO. TS1

TITLE OF SHEET
TREATMENT RECOMMENDATION DRAWINGS
HS-04
FIRE OFFICE BUILDING
HISTORIC HOUSING AREA
WIND CAVE NATIONAL PARK
HOT SPRINGS, SOUTH DAKOTA

DRAWING NO. 108
128867
PMIS/PKG NO. 158029
SHEET 11 OF 19

3/30/15 08:52 LFRISBIE R19 G:\2014147\DRAWINGS\02 TREATMENT DRAWINGS\XX- WIND CAVE- SECOND SHT.DWG



1 TS2 ROOF FRAMING PLAN

1/4"=1'-0"

4 0 4 8

SCALE OF FEET

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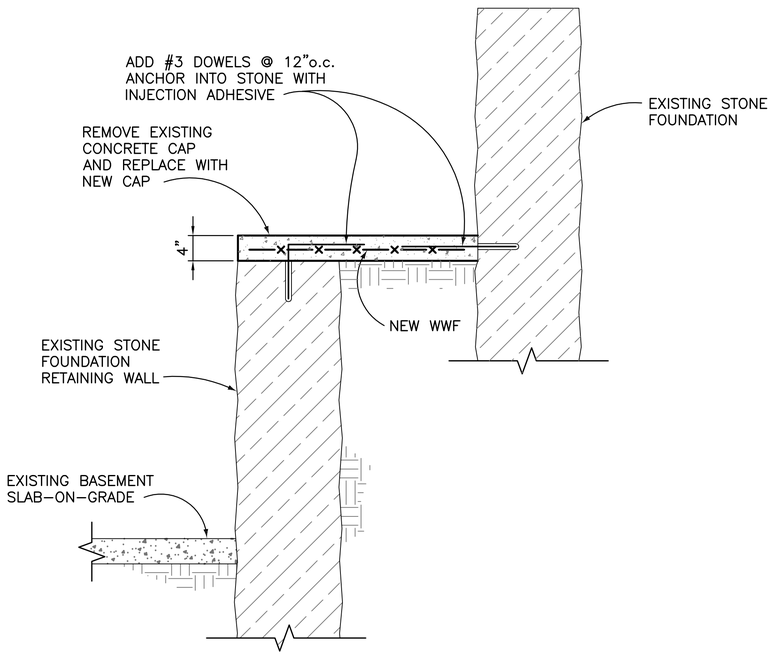
DESIGNED: RCJ
CADD: LEF
TECH. REVIEW:
DATE: 1/27/16

SUB SHEET NO. TS2

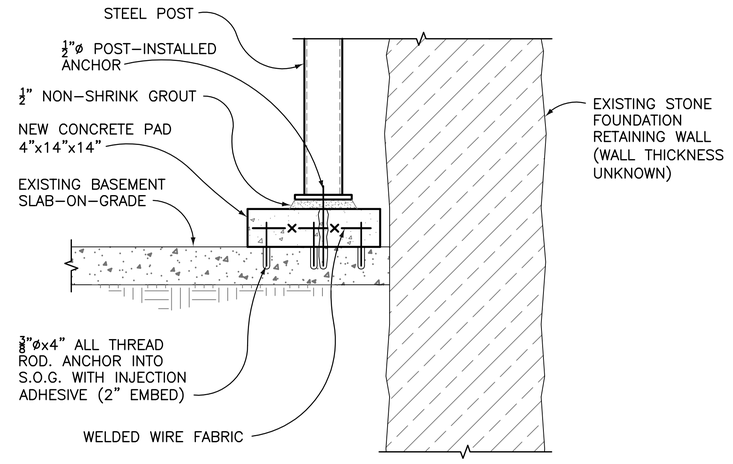
TITLE OF SHEET
TREATMENT RECOMMENDATION DRAWINGS
HS-04
FIRE OFFICE BUILDING
HISTORIC HOUSING AREA
WIND CAVE NATIONAL PARK
HOT SPRINGS, SOUTH DAKOTA

DRAWING NO. 108
128867
PMIS/PKG NO. 158029
SHEET 12 OF 19

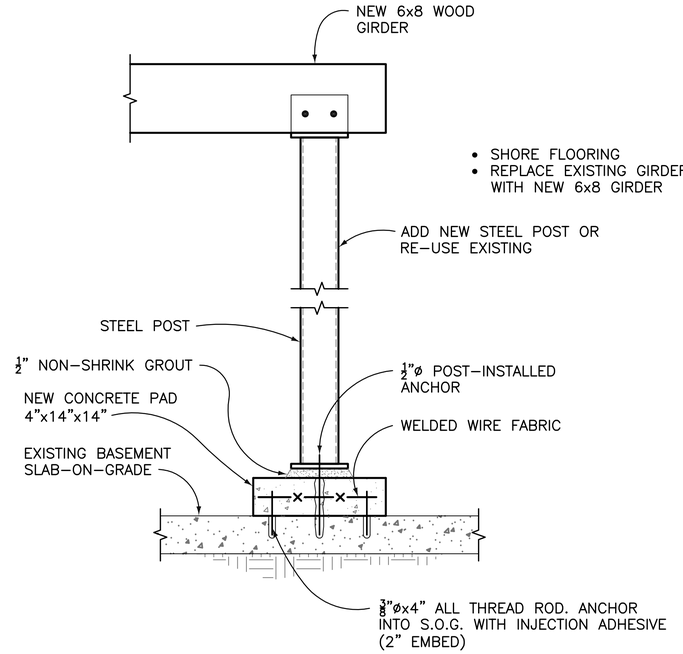
3/30/15 08:52 LFRISBIE R19 G:\2014147\DRAWINGS\02 TREATMENT DRAWINGS\XX- WIND CAVE- SECOND SHT.DWG



A TS3 CONCRETE CAP REPLACEMENT AT RETAINING WALL
1" = 1'–0"

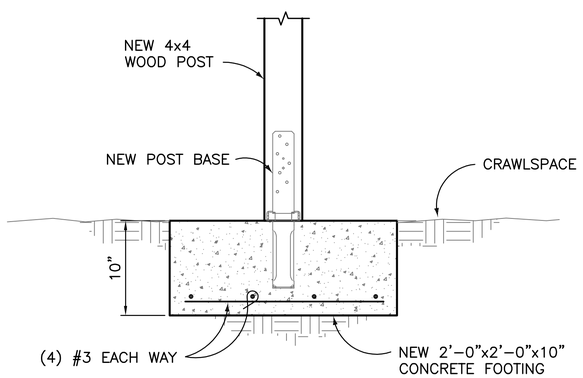


B TS3 STEEL POST BEARING PAD
1 1/2" = 1'–0"

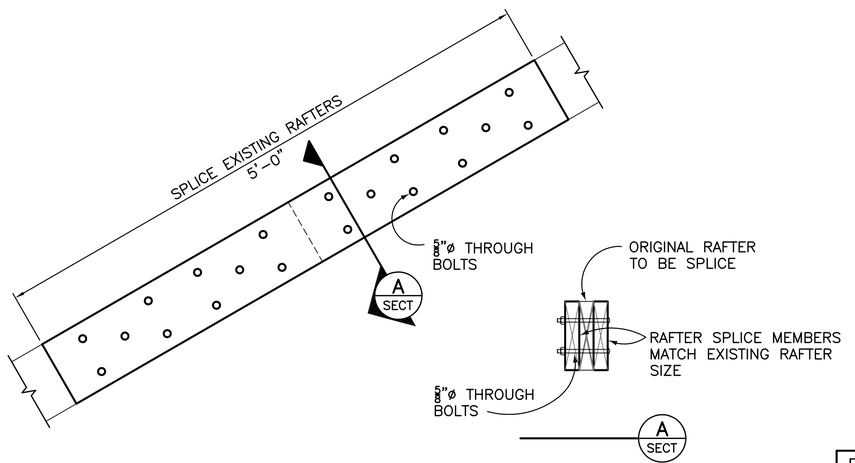


C TS3 STEEL POST BEARING PAD
1 1/2" = 1'–0"

NOTE:
SHORE EXISTING BEAM
PRIOR TO STARTING
CONSTRUCTION

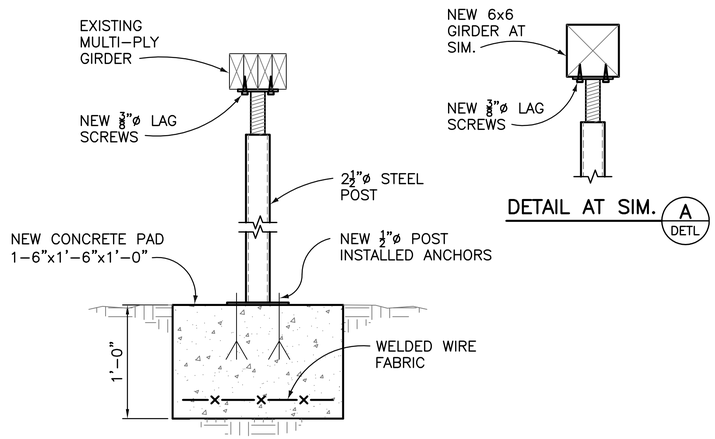


D TS3 WOOD POST BEARING PAD
1 1/2" = 1'–0"



F TS3 TYPICAL RAFTER SPLICE
1 1/2" = 1'–0"

NOTE:
INSTALL EITHER STAINLESS STEEL
OR HOT–DIPPED GALVANIZED
ANCHORS AND POST BASES
THROUGHOUT BASEMENT AND
CRAWLSPACES



DETAIL AT SIM. A DETL

G TS3 FOOTING FOR STEEL POST
1 1/2" = 1'–0"

STRUCTURAL ENGINEERING ASSOCIATES, INC.
1000 WALNUT
SUITE 1570 KANSAS CITY, MO 64106
Ph. 816–421–1042
Fax 816–421–1061

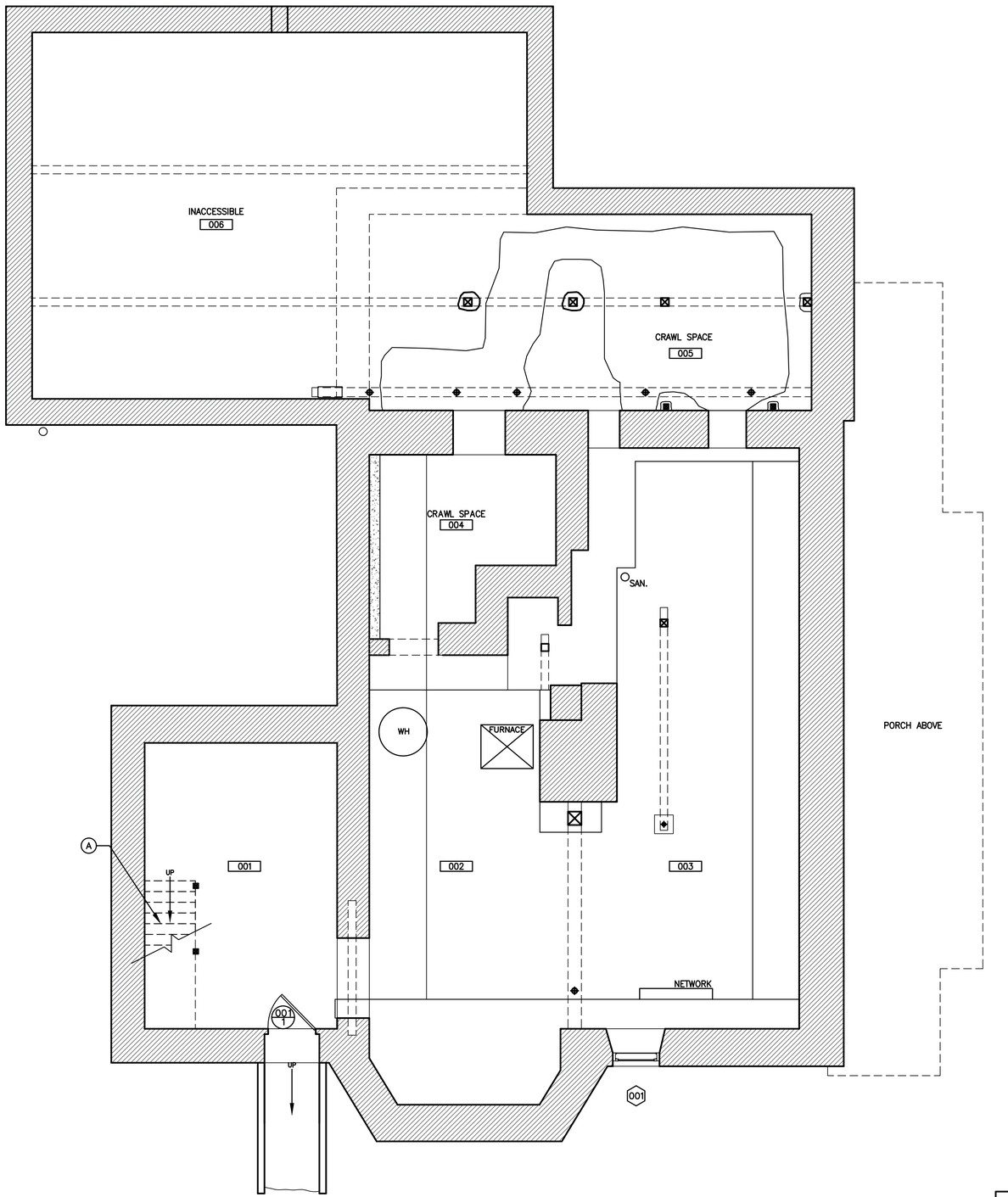
DESIGNED: RCJ
DRAWN: LEF
TECH. REVIEW:
DATE: 1/27/16

SUB SHEET NO. TS3

TITLE OF SHEET
TREATMENT RECOMMENDATION DRAWINGS
HS–04
FIRE OFFICE BUILDING
HISTORIC HOUSING AREA
WIND CAVE NATIONAL PARK
HOT SPRINGS, SOUTH DAKOTA

DRAWING NO. 108
128867
PMIS/PKG NO. 158029
SHEET 13 OF 19

3/30/15 08:52 LFRISBIE R19 G:\2014\47\DRAWINGS\02 TREATMENT DRAWINGS\XX– WIND CAVE– SECOND SHT.DWG



1 / TA8 HS-04 LONG TERM TREATMENT RECOMMEDNATIONS – BASEMENT DEMOLITION PLAN
1/4" = 1'-0"

BASEMENT DEMOLITION KEY NOTES:

A. DEMOLISH EXISTING STAIRS.

DRAWING KEY:

EXISTING WALLS

ITEMS TO BE DEMOLISHED

NEW WALLS

4 0 4 8
SCALE OF FEET

Susan Richards Johnson & Associates, Inc.
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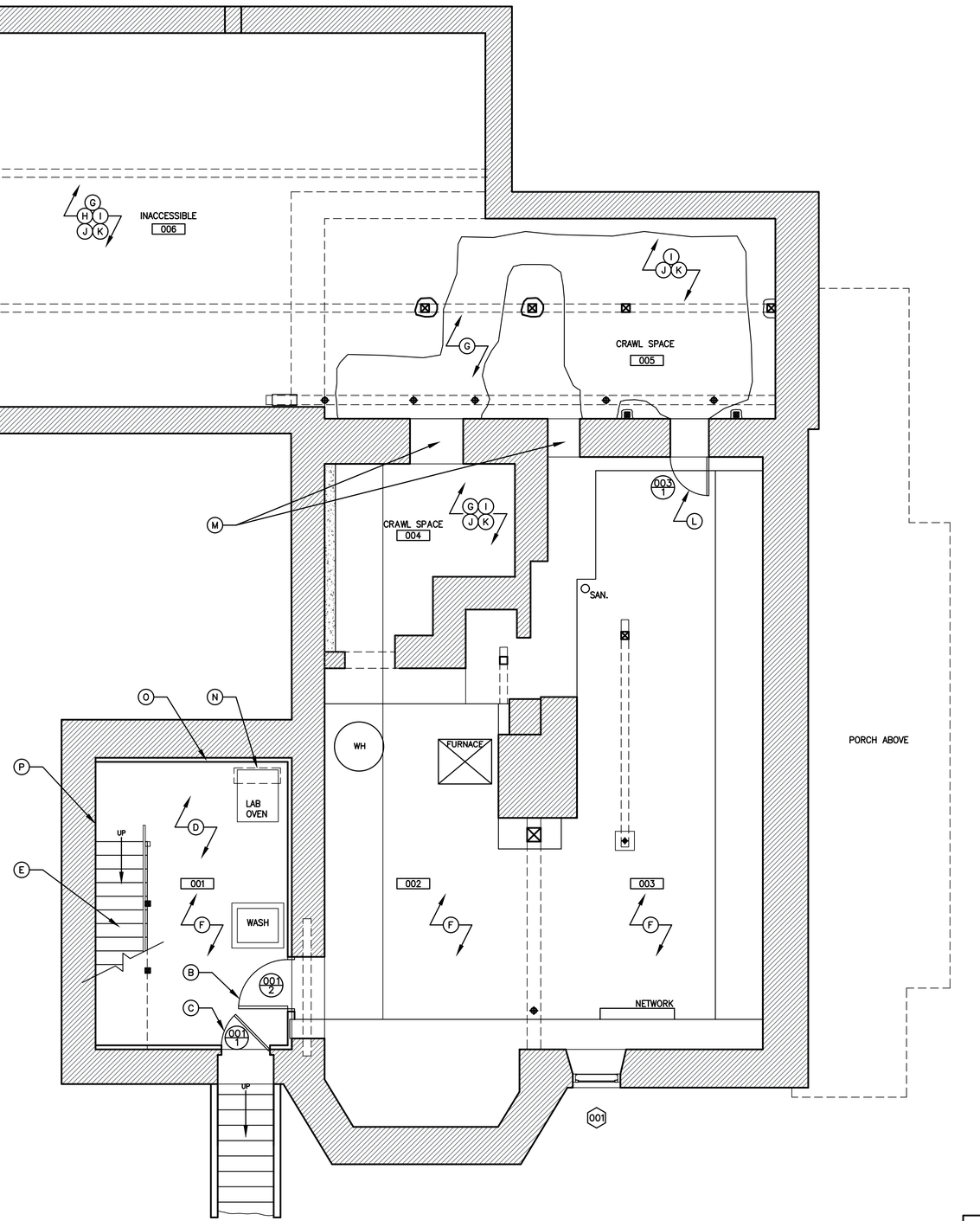
KANSAS CITY, MO
64106
Ph. 816-474-0900
Fax 816-474-0909

DESIGNED: AG
DRAWN: AG
TECH. REVIEW: AG
DATE: 1/27/16

SUB SHEET NO. TA8

TITLE OF SHEET
TREATMENT RECOMMENDATION DRAWINGS
HS-04
FIRE OFFICE BUILDING
HISTORIC HOUSING AREA
WIND CAVE NATIONAL PARK
HOT SPRINGS, SOUTH DAKOTA

DRAWING NO. 108 / 128867
PMIS/PKG NO. 158029
SHEET 14 OF 19



BASEMENT KEY NOTES:

A. INSTALL DRYWALL CEILING.
B. INSTALL NEW DOOR 001/2.
C. RESTORE/WEATHERSTRIP EXISTING DOOR.
D. CLEAN/SEAL CONCRETE FLOOR.
E. INSTALL NEW STAIR.
F. INSTALL NEW LIGHTING.
G. INSTALL NEW LIGHTING IN CRAWL SPACE.
H. EXCAVATE, AS REQUIRED FOR ACCESS. MODIFY STRUCTURE, AS REQUIRED FOR NEW RENOVATION.
I. INSTALL NEW 12 MIL VAPOR BARRIER IN CRAWL SPACE.
J. INSULATE FIRST FLOOR JOIST AND PERIMETER WALLS.
K. CONDITION CRAWL SPACES.
L. INSTALL NEW ACCESS DOOR.
M. SEAL AND INSULATE OPENINGS.
N. INSTALL NEW EXHAUST VENT HOOD FOR OVEN. VENT THROUGH SIDE WALL OR ROOF.
O. FUR WALLS, TYPICAL NORTH, EAST AND SOUTH WALLS.
P. PLASTER WALLS. PREP, PRIME AND PAINT.

DRAWING KEY:

EXISTING WALLS

ITEMS TO BE DEMOLISHED

NEW WALLS

4 0 4 8
SCALE OF FEET

1/TA9 HS-04 LONG TERM TREATMENT RECOMMEDNATIONS – BASEMENT PLAN
1/4" = 1'-0"

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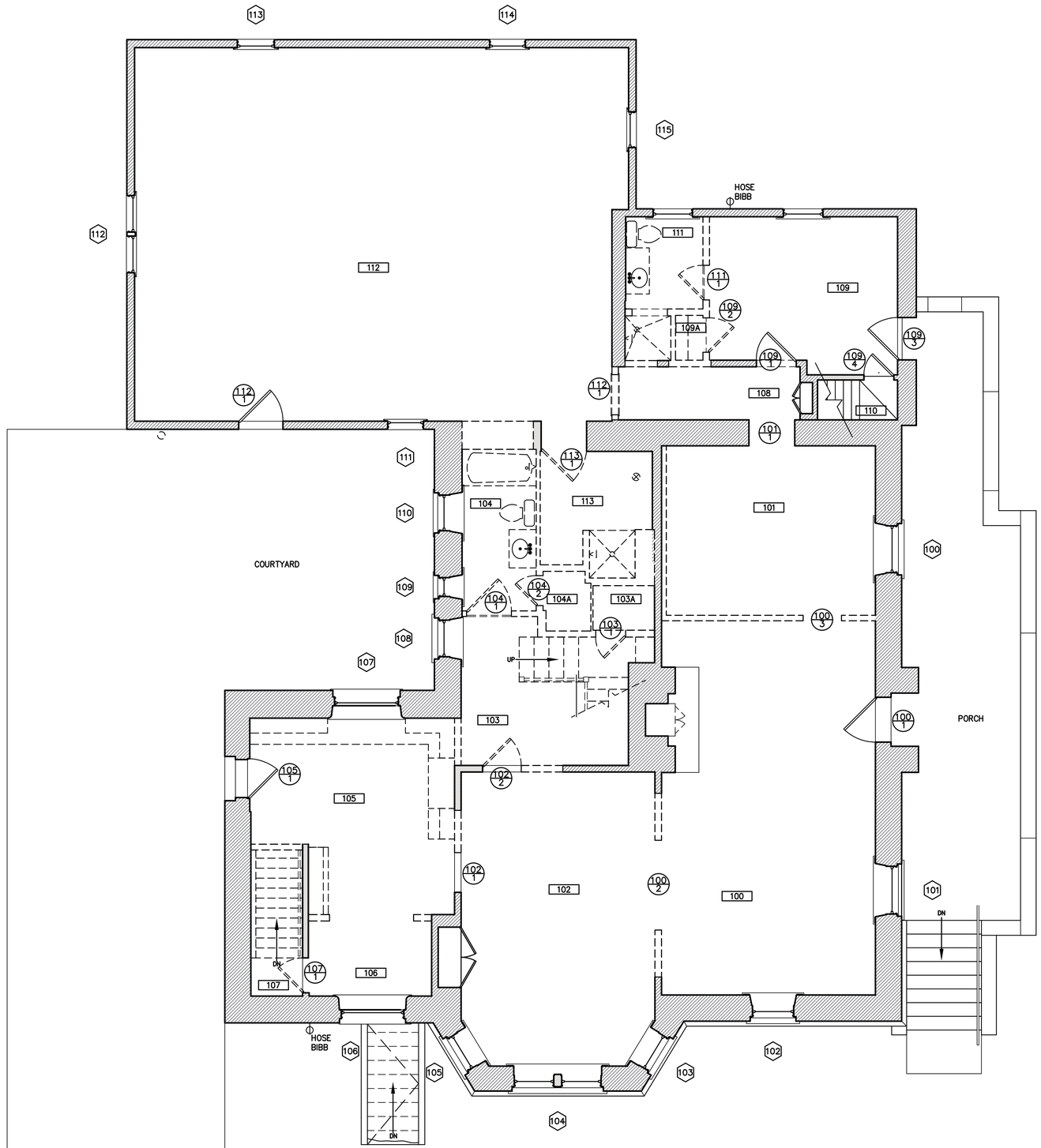
DESIGNED: AG
CADD: AG
TECH. REVIEW: AG
DATE: 1/27/16

SUB SHEET NO. TA9

TITLE OF SHEET
TREATMENT RECOMMENDATION DRAWINGS
HS-04
FIRE OFFICE BUILDING
HISTORIC HOUSING AREA
WIND CAVE NATIONAL PARK
HOT SPRINGS, SOUTH DAKOTA

DRAWING NO. 108 / 128867
PMIS/PKG NO. 158029
SHEET 15 OF 19



1 TA10 HS-04 LONG TERM TREATMENT RECOMMENDATIONS – FIRST FLOOR DEMOLITION PLAN
1/4" = 1'-0"

GENERAL NOTES:

1. PERFORM HAZARDOUS MATERIALS TESTING BEFORE INITIATING ANY WORK.
2. INSECT RADON MITIGATION SYSTEM AND UPDATE, AS REQUIRED.

DRAWING KEY:

EXISTING WALLS

ITEMS TO BE DEMOLISHED

NEW WALLS

4 0 4 8
SCALE OF FEET

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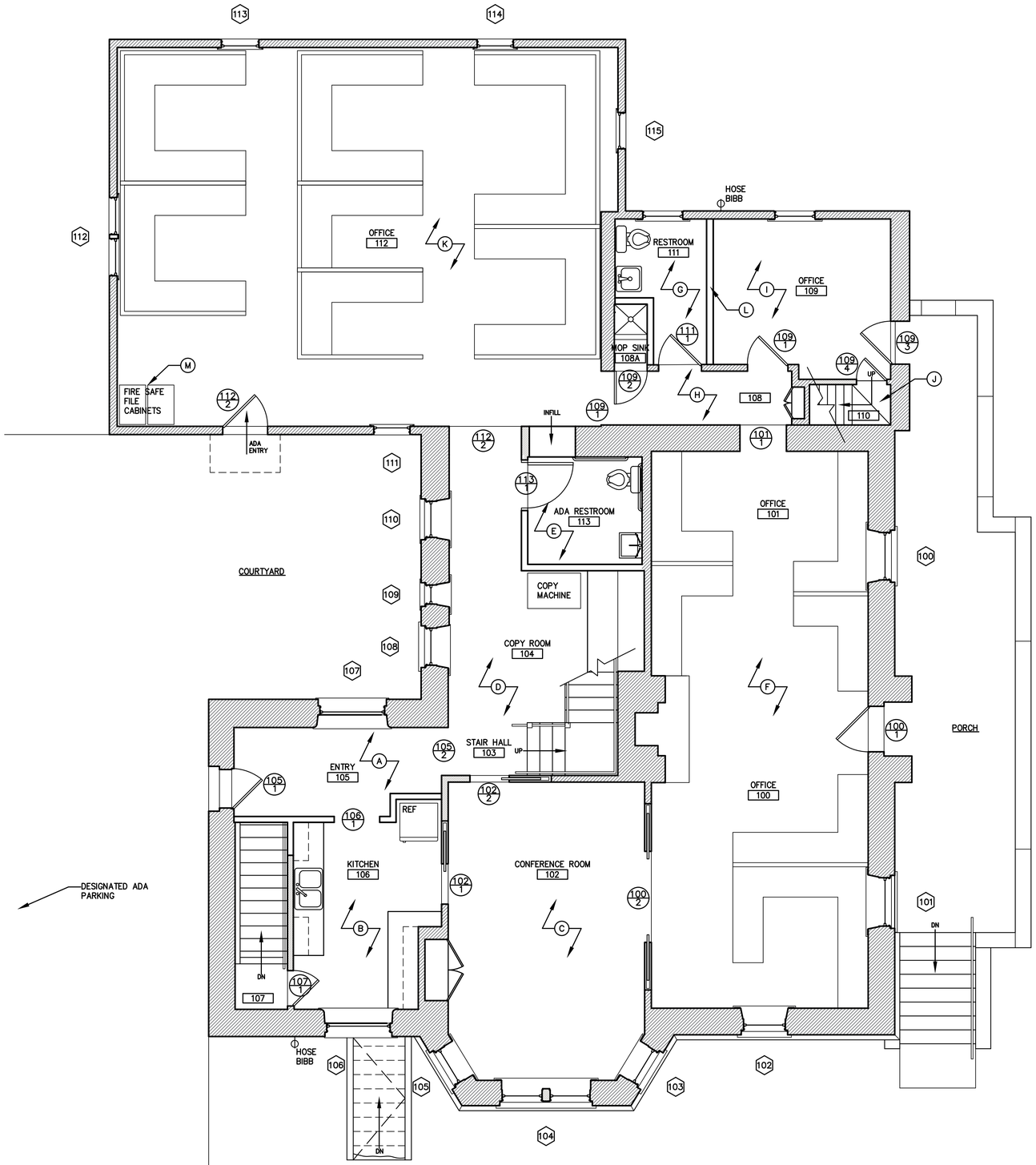
Fax 816-474-0909

DESIGNED: AG
DRAWN: AG
TECH. REVIEW: AG
DATE: 1/27/16

SUB SHEET NO. TA10

TITLE OF SHEET
TREATMENT RECOMMENDATION DRAWINGS
HS-04
FIRE OFFICE BUILDING
HISTORIC HOUSING AREA
WIND CAVE NATIONAL PARK
HOT SPRINGS, SOUTH DAKOTA

DRAWING NO. 108 128867
PMIS/PKG NO. 158029
SHEET 16 OF 19



1 / TA11 HS–04 LONG TERM TREATMENT RECOMMENDATIONS – FIRST FLOOR PLAN
1/4" = 1'–0"

GENERAL NOTES:

1. INSTALL NEW WALL ELECTRICAL DISTRIBUTION, LIGHTING, EGRESS LIGHTING, RECEPTACLES.
2. INSTALL NEW FIRE ALARM SYSTEM.
3. INSTALL NEW FIRE SUPPRESSION SYSTEM.
4. INSTALL NEW TELEPHONE/DATA.
5. INSTALL NEW HVAC/EXHAUST SYSTEM.
6. ABATE ASBESTOS AND LEAD BASED PAINT

FIRST FLOOR KEY NOTES:

A. 105 NEW ENTRY – RESTORE DOOR 105/1. NEW TRIM, PAINT AND NEW LIGHTING.
B. 106 NEW KITCHEN – NEW CABINETS/COUNTERS/BACKSPLASH, REFRIGERATOR, LIGHTING, LAMINATE FLOORING, PAINT, TRIM AND RESTORE DOOR 101/1.
C. 102 CONFERENCE ROOM – REMOVE FURRED CEILING, RESTORE WOOD FLOORS, RESTORE WOOD MILLWORK, RESTORE PLASTER CEILING AND WALLS, INSTALL (4) POCKET DOORS AND NEW LIGHTINGS.
D. CONSTRUCT NEW STAIR TO SECOND FLOOR.
E. 113 NEW ADA RESTROOM – ALL NEW FIXTURES, FINISHES AND LIGHTING.
F. 100/101 OFFICE – ENSURE DAMPER IS IN GOOD CONDITION, SEAL STONE AT FIREPLACE AND HEARTH, NEW CARPET, RESTORE DOOR 100/1, RESTORE MILLWORK, RESTORE PLASTER CEILING AND WALL AND NEW LIGHTING.
G. 111 NEW RESTROOM/ MOP SINK – INSTALL SALVAGED DOOR 111/1.
H. 108 HALL – RESTORE WOOD FLOOR, RESTORE PLASTER WALL AND CEILING AND INSTALL FLUSH WOOD THRESHOLD BETWEEN ROOM 108 AND 112.
I. 109 OFFICE – RESTORE WOOD FLOOR, RESTORE PLASTER WALLS AND CEILING, INSTALL NEW LIGHTING AND RESTORE MILLWORK.
J. INSTALL LIGHTING IN STAIR.
K. 111 OFFICE – DEMOLISH ALL DETERIORATED PLASTER FROM WALLS, INSULATE AND DRYWALL EXTERIOR WALLS. REPAIR PLASTER CEILING, RESTORE WOOD FLOORS AND STORE SALVAGED MILLWORK. RESTORE AND REINSTALL (7) HISTORIC LIGHT FIXTURE AND INSTALL NEW SUPPLEMENTAL LIGHTING.
L. ADD SOUND ATTENUATION BATTS IN NEW PARTITION.
M. THE FLOOR MAY NEED TO BE REINFORCED DEPENDING ON THE FINAL LOCATION OF THE FIRE SAFE FILE CABINET.

DRAWING KEY:

EXISTING WALLS

ITEMS TO BE DEMOLISHED

NEW WALLS

4 0 4 8
SCALE OF FEET

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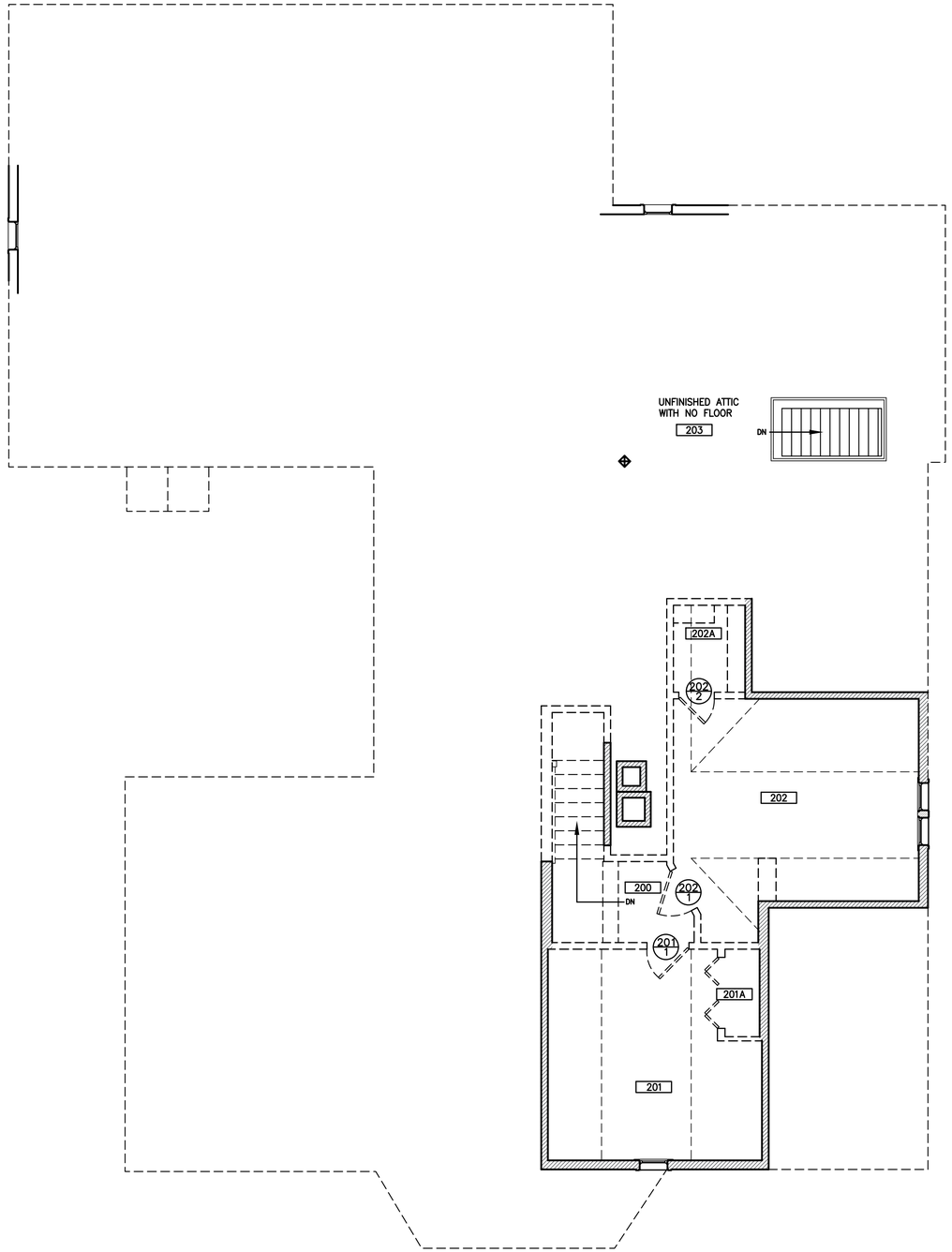
DESIGNED: AG
DRAWN: AG
TECH. REVIEW: AG
DATE: 1/27/16

SUB SHEET NO. TA11

TITLE OF SHEET
TREATMENT RECOMMENDATION DRAWINGS
HS–04
FIRE OFFICE BUILDING
HISTORIC HOUSING AREA
WIND CAVE NATIONAL PARK
HOT SPRINGS, SOUTH DAKOTA

DRAWING NO. 108
128867
PMIS/PKG NO. 158029
SHEET 17 OF 19



1 / TA12 HS–04 LONG TERM TREATMENT RECOMMENDATIONS – SECOND FLOOR DEMOLITION PLAN
1/4" = 1'–0"

4 0 4 8
SCALE OF FEET

DRAWING KEY:

EXISTING WALLS

ITEMS TO BE DEMOLISHED

NEW WALLS

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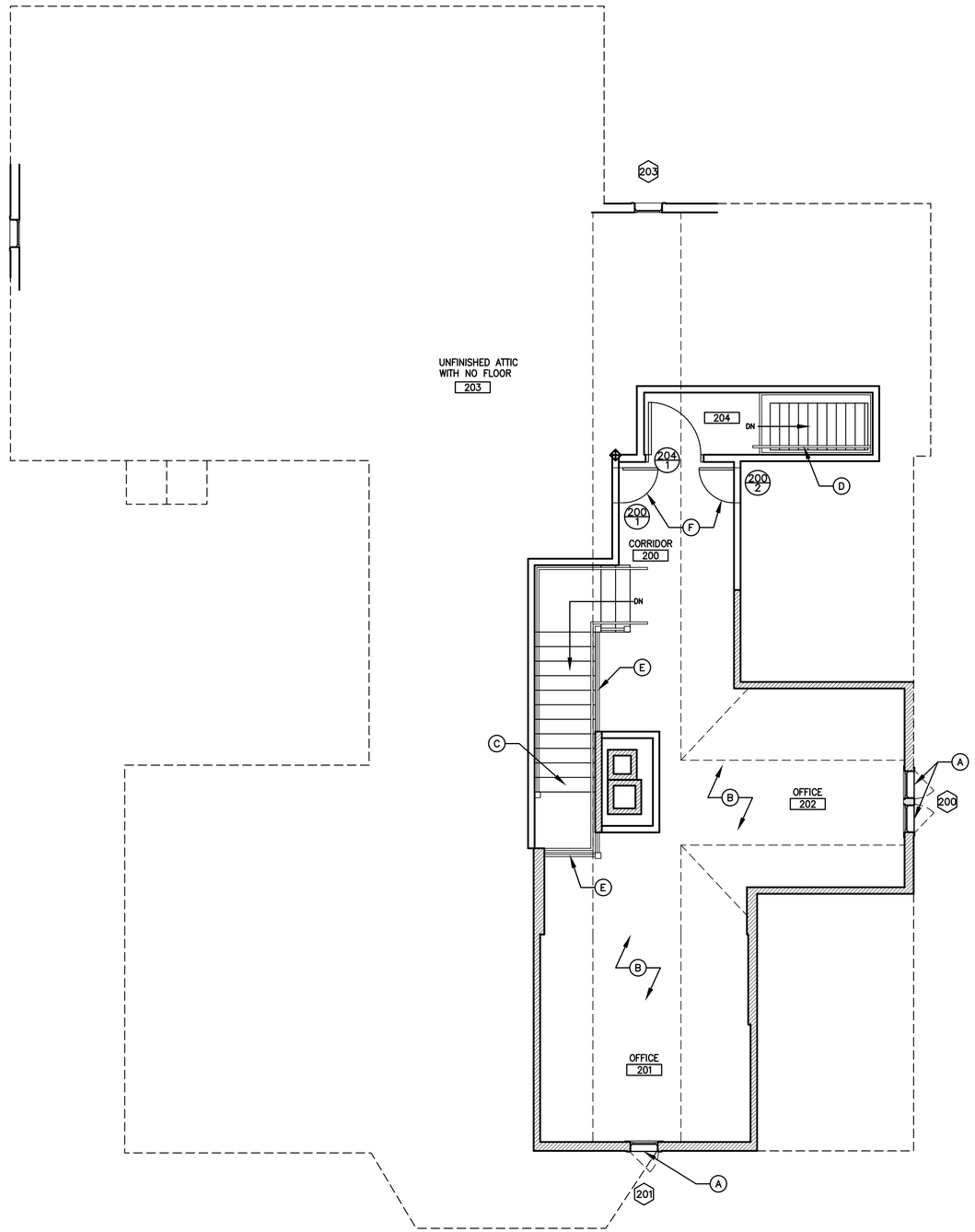
DESIGNED: AG
DRAWN: AG
TECH. REVIEW: AG
DATE: 1/27/16

SUB SHEET NO. TA12

TITLE OF SHEET
TREATMENT RECOMMENDATION DRAWINGS
HS–04
FIRE OFFICE BUILDING
HISTORIC HOUSING AREA
WIND CAVE NATIONAL PARK
HOT SPRINGS, SOUTH DAKOTA

DRAWING NO. 108 / 128867
PMIS/PKG NO. 158029
SHEET 18 OF 19



GENERAL NOTES:

1. INSTALL WALL NEW ELECTRICAL DISTRIBUTION, LIGHTING, EGRESS LIGHTING, RECEPTACLES.
2. INSTALL NEW FIRE ALARM SYSTEM.
3. INSTALL NEW FIRE SUPPRESSION SYSTEM.
4. INSTALL NEW TELEPHONE/DATA.
5. INSTALL NEW HVAC/EXHAUST SYSTEM.
6. ABATE ASBESTOS AND LEAD BASED PAINT

SECOND FLOOR KEY NOTES:

A. REMOVE EXISTING WINDOW AND INSTALL NEW ALUMINUM CLAD WOOD CASEMENT WINDOW WITH SIMULATED MEETING RAIL FOR INCREASED EGRESS FROM SECOND FLOOR.
B. REMODEL SECOND FLOOR TO ENLARGE THE SPACE AND MAKE IT MORE FUNCTIONAL.
C. CONSTRUCT NEW STAIR TO FIRST FLOOR.
D. INSTALL NEW CONTINUOUS HANDRAIL.
E. INSTALL NEW RAILING.
F. INSTALL NEW ACCESS DOORS 200/1 AND 200/2.

DRAWING KEY:

EXISTING WALLS

ITEMS TO BE DEMOLISHED

NEW WALLS

1 / TA13 HS-04 LONG TERM TREATMENT RECOMMENDATIONS – SECOND FLOOR PLAN
1/4" = 1'-0"

4 0 4 8
SCALE OF FEET

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DESIGNED: AG
CADD: AG
TECH. REVIEW: AG
DATE: 1/27/16

SUB SHEET NO. TA13

TITLE OF SHEET
TREATMENT RECOMMENDATION DRAWINGS
HS-04
FIRE OFFICE BUILDING
HISTORIC HOUSING AREA
WIND CAVE NATIONAL PARK
HOT SPRINGS, SOUTH DAKOTA

DRAWING NO. 108 128867
PMIS/PKG NO. 158029
SHEET 19 OF 19

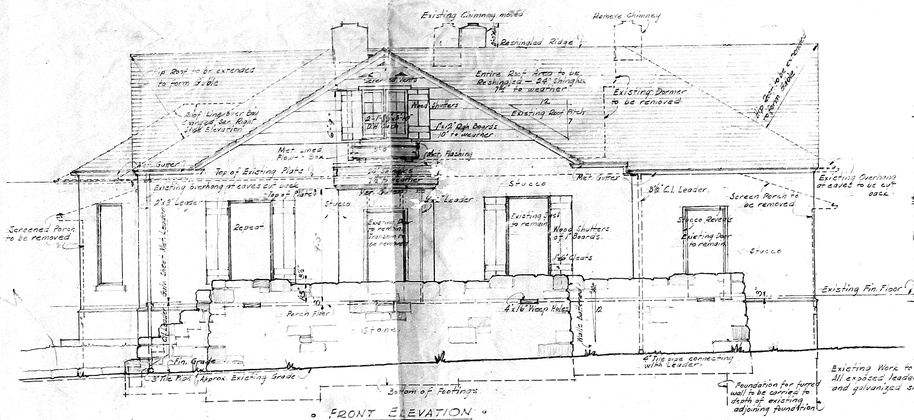


HS-04 ca. 1926. (WICA Museum Collection #WICA 1034)

Appendix A
Historic Drawings

Appendix A
HS-04 Plan Pages

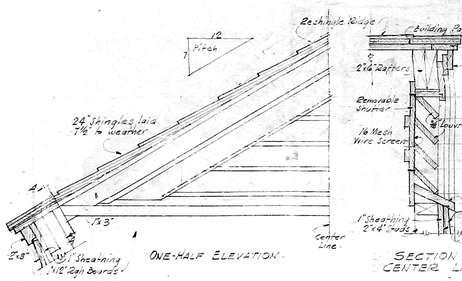
	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	**File Name**	**Building Number**	**Drawing Title**	**Issuing Office at US Dept of Int.**	**Drawn by**	**Drawing Date**	**Sheet # of #**	**Public Works Project No.**	**Recommended by and title**	**Recommended Date**	**Approved by and title**	**Approval Date**	**Job Completed Date**	**Notes**
2	WICA_108_3023_[id278474] Also recored as WICA_108_3023_[13417]	**HS 04**	WCNP Old Supt. Res. Remodeling	Branch of Plans and Design	G.W.N.	3/8/1935	1 of 2		W.G. Carnes, Deputy Chief Architect	3/19/1935	Arno B Cammerer/ Director	4/8/1935	4/30/1937 ECW reports 1937	Look at bottom right corner for possible notes on Completion Date. Info. may have been cut off by first scan.
3	WICA_108_3014_[id278472]	**HS 04**	WCNP Old Supt. Res. Remodeling (Dormitory Addition)	Branch of Plans and Design	G.W.N. ? Unreadable	3/28/1936	2 of 2		W.G. Carnes, Deputy Chief Architect	4/25/1936	Arno B Cammerer/ Director	5/15/1936		3 elevations, dormitory floor plan, 1 section, foundation details. Note written left of the title block lists this building as ECW Project #6



FRONT ELEVATION
Scale: ⅛"=1'-0"

RIGHT SIDE ELEVATION
Scale: ⅛"=1'-0"

Note:
Existing Work to be removed is indicated thus: - - - - - -
All exposed leadings to be cast iron finish grade to top of base and galvanized sheet metal servs same.

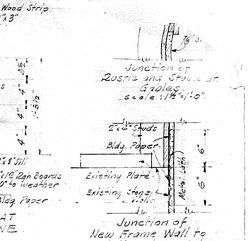


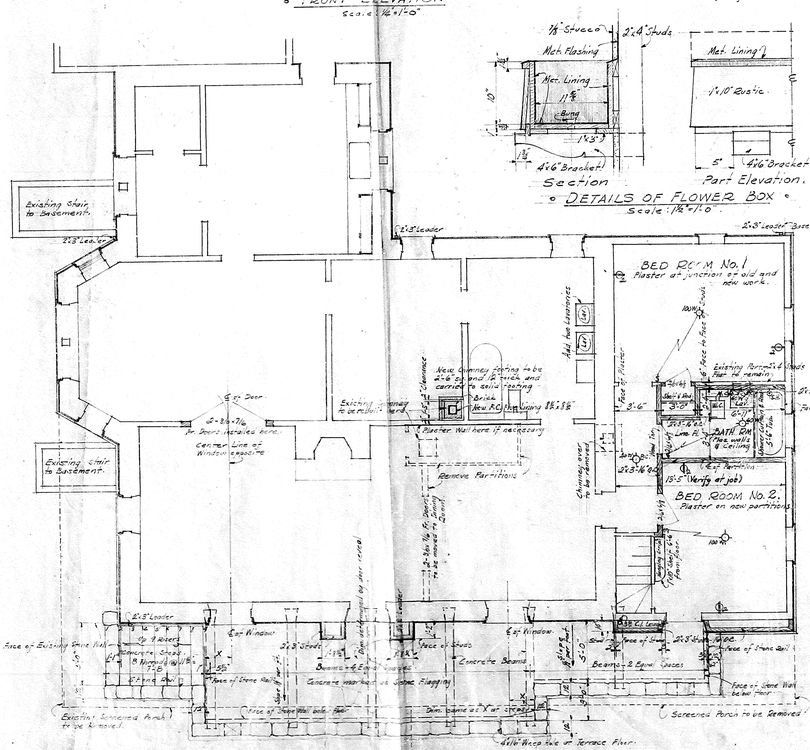
ONE-HALF ELEVATION

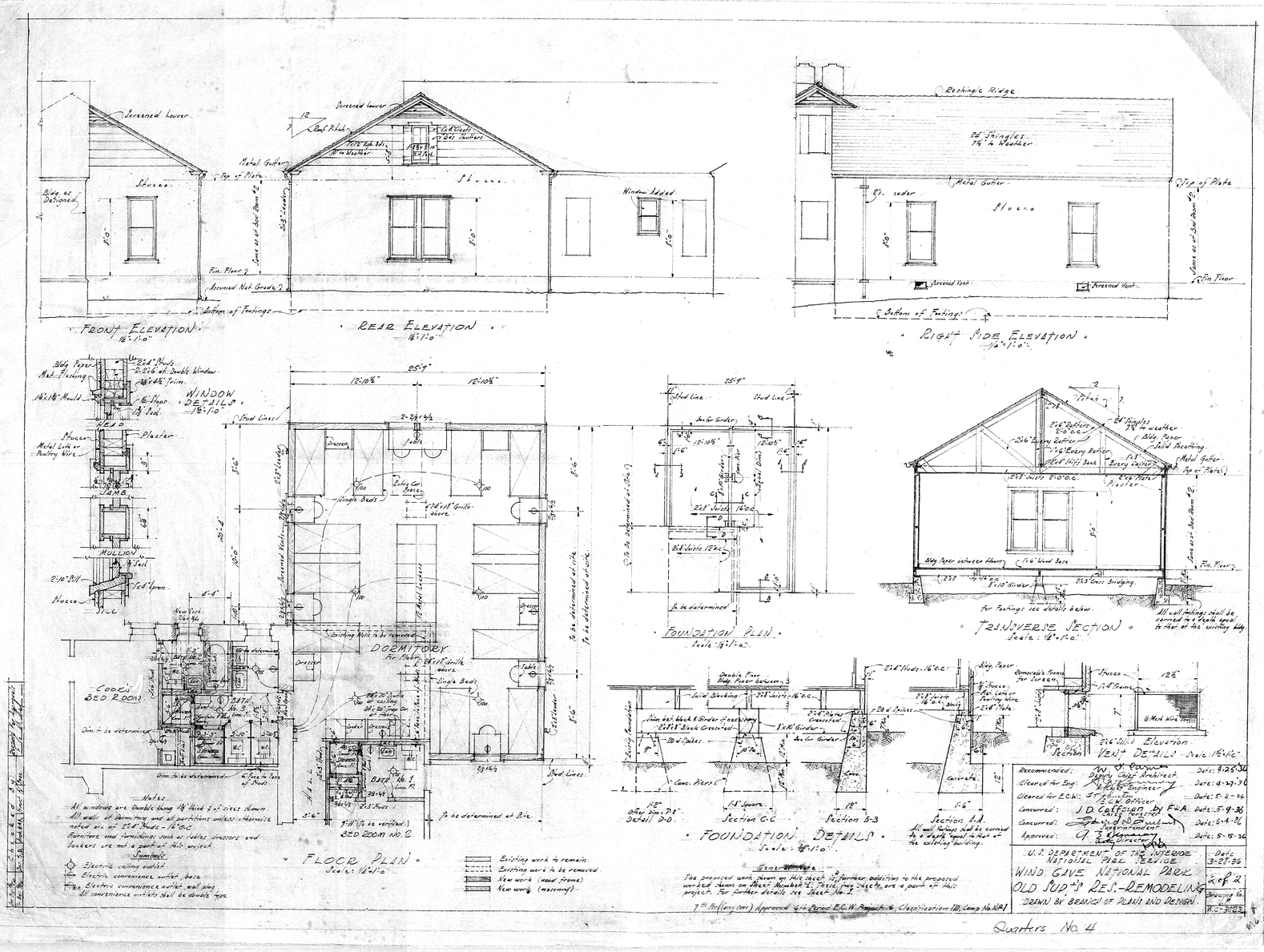
SECTION AT A-A.

SECTION AT CENTER LINE.

DETAIL OF LOUVRES
Scale: 1½"=1'-0"




Existing Stair to Basement
Existing Chair to Basement
2'-8" Leader
2'-8" Leader - Take to drop here
BED ROOM No. 1
Plaster at junction of old and new work.
Add two Electrics
Face of Existing Stone Wall
Existing Furnace & Coals Flue to remain
Face of Plaster
Existing Chimney to be Removed
New Chimney footing to be 2'-0" Sq. and 18" thick and carried to solid bearing
Brick
New Ash Pit
Existing Chimney to remain
Plaster Wall here if necessary
Remove Partitions
Ex. Door
Ex. Window
Center Line of Window opening
Existing Chimney to remain
Existing Stone Wall
Existing Sash to be removed
Existing Sash to remain
Existing Door to be removed
Existing Door to remain
Existing Sash to be removed
Existing Sash to remain
Existing Stone Wall
Existing Fin. Floor
Existing Grade
Stone
Perch Floor
Existing Concrete Area to be removed
Existing Stone Wall to be removed
Existing Window to be Removed
Existing Concrete Area to be removed
Existing Concrete Area to be removed
Existing Stone Wall to be removed
Existing Concrete Area to be removed
Existing Stone Wall to be removed
Existing Concrete Area to be removed
Existing Stone Wall



Quarters No 4

WICA_108_3023_[id278474] **HS-04**



HS-04 ca. 1937. (WICA Museum Collection #WICA 4211)

Appendix B
Historic Photographs

Primary Topic ***HS#*** *HS-04*
HS-04

Photo Date ca. *1907*
Date Source
Photographer

Manufact. Date
Final HSR Group *Yes*

Catalog #
Hot
Springs

Below: Front of Image. Right: Back of Image



HSR 2015 Notes

From the Wind Cave Binder at the Hot Springs Public Library. This early photo of HS-04 was taken before the front porch was screened. Pre -1913, when the hotel was razed.

Park Database Description

Primary Topic ***HS#*** *HS-04*
HS-04

Photo Date *1911, July*
Date Source *Library Binder*
Photographer

Manufact. Date
Final HSR Group *Yes*

Catalog #
n/a

HSR 2015 Notes

From the Wind Cave Binder at the Hot Springs Public Library. Before the early two-room addition.

Below: Front of Image. Right: Back of Image



Park Database Description

Appendix B: Wind Cave Park-Selected Database and Photo Files Italicized text added by Deb Sheals Spring 2015 4-15-15

Primary Topic ***HS#*** *General HS4*
HS-04

Catalog #
WICA
185

Photo Date ca. *1920*
Date Source *other, see notes*
Photographer *Stevens Studio*

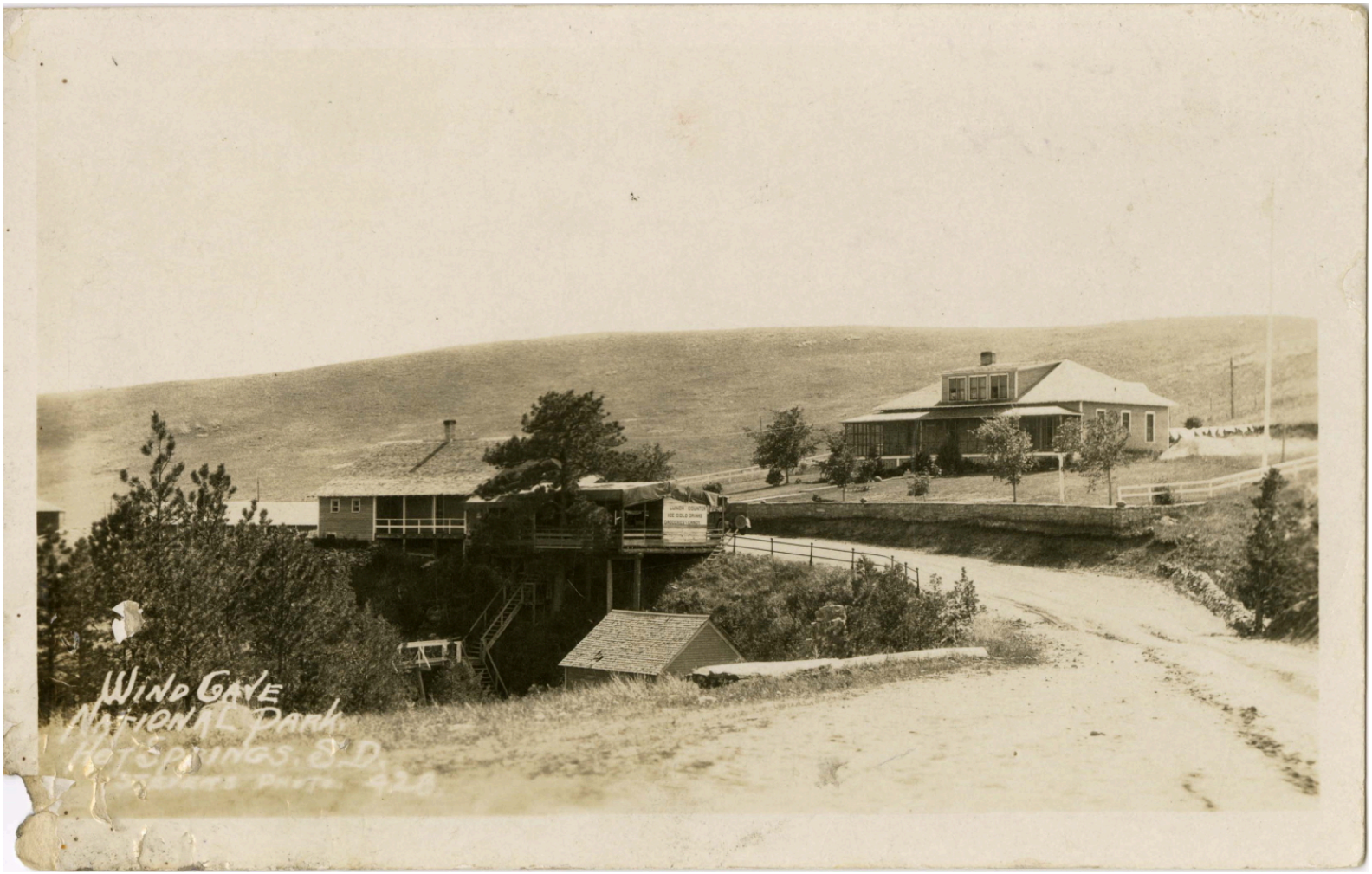
Manufact. Date SD. Stevens Photo
Final HSR Group *Yes*

Below: Front of Image. Right: Back of Image



HSR 2015 Notes

After two room addition to HS4 in 1918, and before front wall was replaced in 1925.



Park Database Description

Postcard view of concession building, Supt. house. Wind Cave National Park

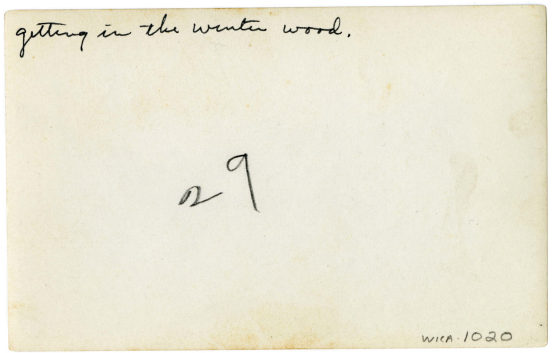
Primary Topic ***HS#*** *HS4*
HS-04

Photo Date ca. *1920*
Date Source *other, see HSR notes*
Photographer

Manufact. Date
Final HSR Group *Yes*

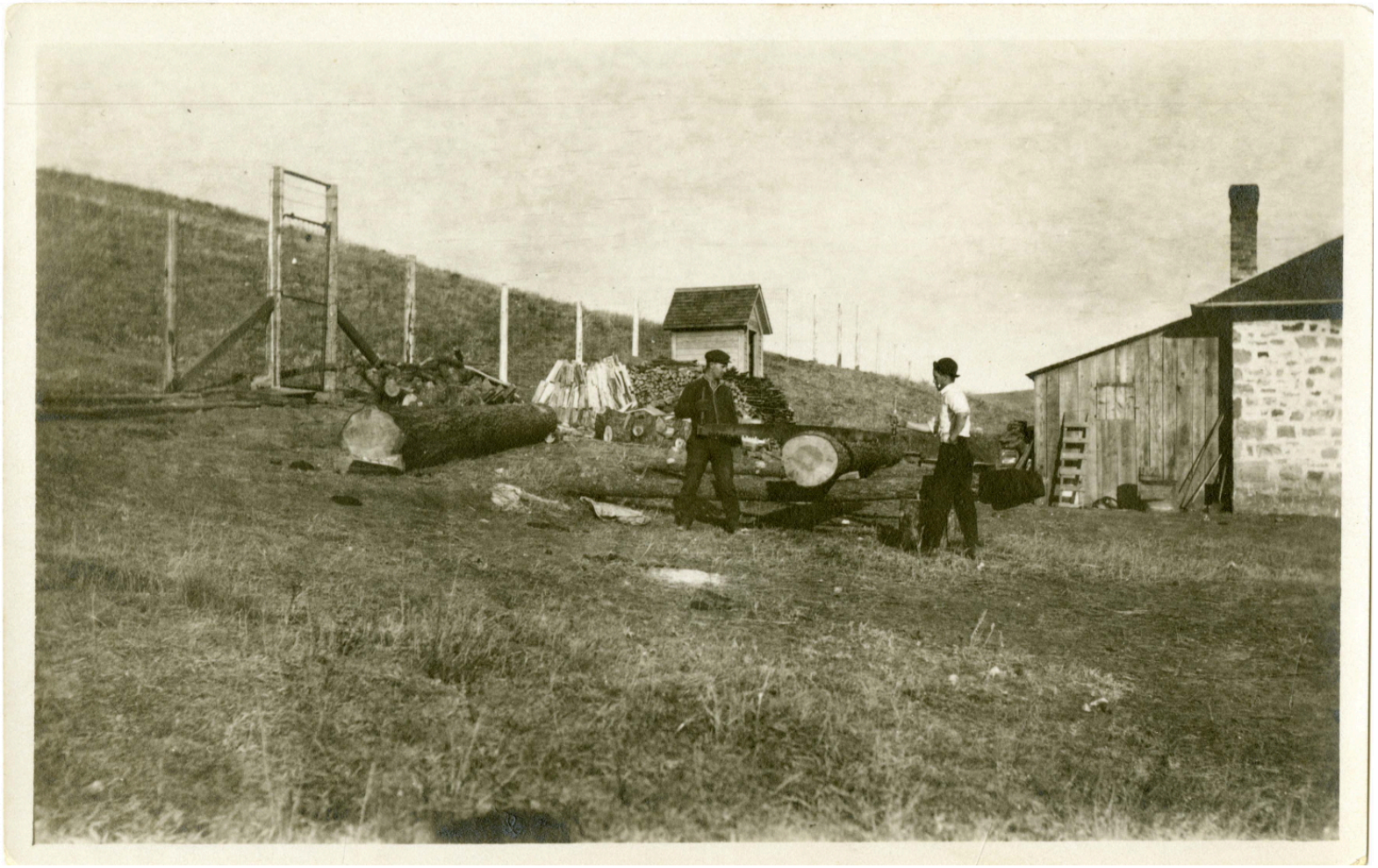
Catalog #
WICA
1020

Below: Front of Image. Right: Back of Image



HSR 2015 Notes

This might be from Mrs. Brazell.



Park Database Description

B&W photo of two men cutting wood by a fence and two buildings. Written on back in ink: getting in the winter wood"; the number "29" is written in pencil. Picture has a horizontal format."

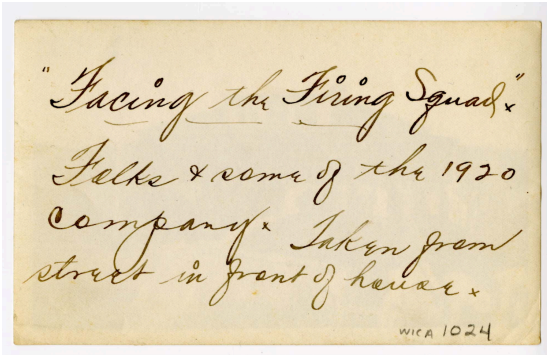
Primary Topic ***HS#*** *HS4*
HS-04

Photo Date *1920*
Date Source *Handwritten date on back*
Photographer

Manufact. Date 1920
Final HSR Group *Yes*

Catalog #
WICA
1024

Below: Front of Image. Right: Back of Image





HSR 2015 Notes

Park Database Description

B&W photo of a group of people standing in front of a house with two white saddle horses in foreground. Written in ink on back: Facing the Firing Squad x Folks and some of the 1920 company x Taken from street in front of house x" Photo has horizontal format. Bottom corners bent."

Primary Topic ***HS#*** *HS4*
HS-04

Photo Date ca. *1920*
Date Source *"Manufactured Date"*
Photographer

HSR 2015 Notes

Manufact. Date 1920
Final HSR Group *Yes*

Catalog #
WICA
8180

Below: Front of Image. Right: Back of Image



Park Database Description

Copy of Photo Cat #100 Cave Entrance Station, WICA

Primary Topic ***HS#*** *HS4*
HS-04

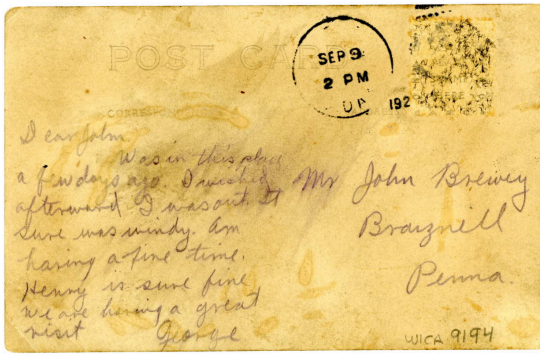
Photo Date ca. *1920s*
Date Source *Post Mark*
Photographer *ONeil Photo Co.*

Manufact. Date
Final HSR Group *Yes*

Catalog #
WICA
9194

HSR 2015 Notes

Below: Front of Image. Right: Back of Image





Park Database Description

Postcard: Black and White Photo Showing

Primary Topic ***HS#*** *General*
HS-04

Photo Date ca. *1925*
Date Source *other, see HSR notes*
Photographer *Stevens*

Manufact. Date SD. Stevens Photo 424".
Final HSR Group *Yes*

Catalog #
WICA
186

Below: Front of Image. Right: Back of Image



HSR 2015 Notes

HS5 built so post 1924.



Park Database Description

Postcard view of concession building, Supt. house. Wind Cave National Park

Appendix B: Wind Cave Park-Selected Database and Photo Files Italicized text added by Deb Sheals Spring 2015 4-15-15

Primary Topic ***HS#*** *HS-04*
HS-04

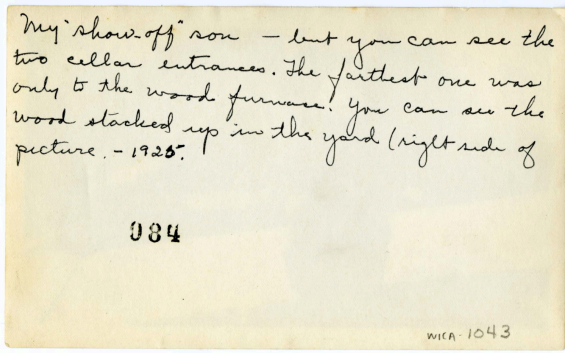
Photo Date ca. *1925*
Date Source *Handwritten date on back*
Photographer

Manufact. Date 1925
Final HSR Group *Yes*

Catalog #
WICA
1043

Below: Front of Image. Right: Back of Image





HSR 2015 Notes

Database descrip coninued. From the Mrs. Roy Brazell collection. Photo has horizontal format"

Park Database Description

B&W photo of small child in front of an open cellar door. The large WIND CAVE sign can be see on hill in background. Written in ink on photo back: My (Meta Brazell) show-off son--but you can see the two cellar entrances. The farthest one was only to the wood furnace. You can see the wood stacked up in the yard. Stamped on back is "C84". On the right side of picture is "1925".

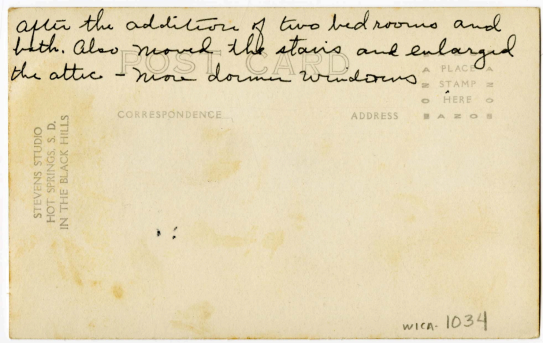
Primary Topic ***HS#*** *HS4*
HS-04

Photo Date *1926*
Date Source *Date on front of photo*
Photographer *Stevens Studio*

Manufact. Date Norten. Paden. Stricklin
Final HSR Group *Yes*

Catalog #
WICA
1034

Below: Front of Image. Right: Back of Image



HSR 2015 Notes

After two room addition. Note description of addition on the back of the photo.



Park Database Description

B&W picture of nine men in front of old superintendent's house. Words at top of picture: Wind Cave National Park In the Black Hills." Written along bottom of picture are: "J66 Chambers-Underhill

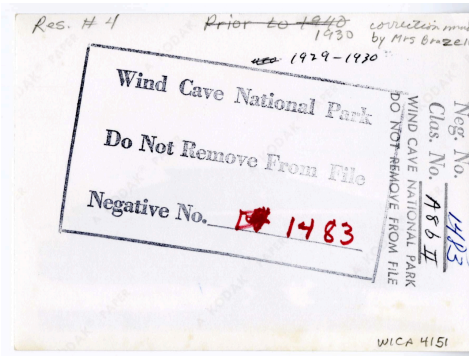
Primary Topic ***HS#*** *HS4*
HS-04

Photo Date ca. *1930*
Date Source *Handwritten date on back*
Photographer

Manufact. Date PRIOR TO 1940
Final HSR Group *Yes*

Catalog #
WICA
4151

Below: Front of Image. Right: Back of Image



HSR 2015 Notes

Older rock fence is still in place--this was replaced by 1935. See WICA 4153.



Park Database Description

Photographic Print and Negative of Buildings - Residence #4. Photographic Print Is Stored at Wind Cave National Park, and the Nitrate Negative Is in Cold Storage at the Midwest Archeological Center.

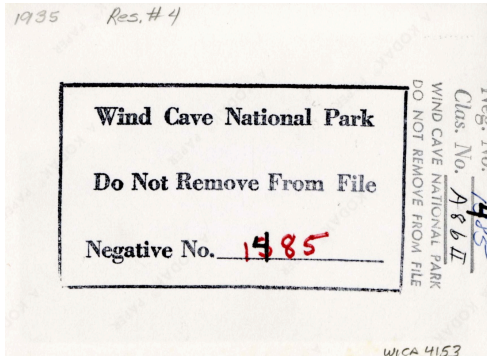
Primary Topic ***HS#*** *HS4*
HS-04

Catalog #
WICA
4153

Photo Date ca. *1931*
Date Source *other, see HSR notes*
Photographer

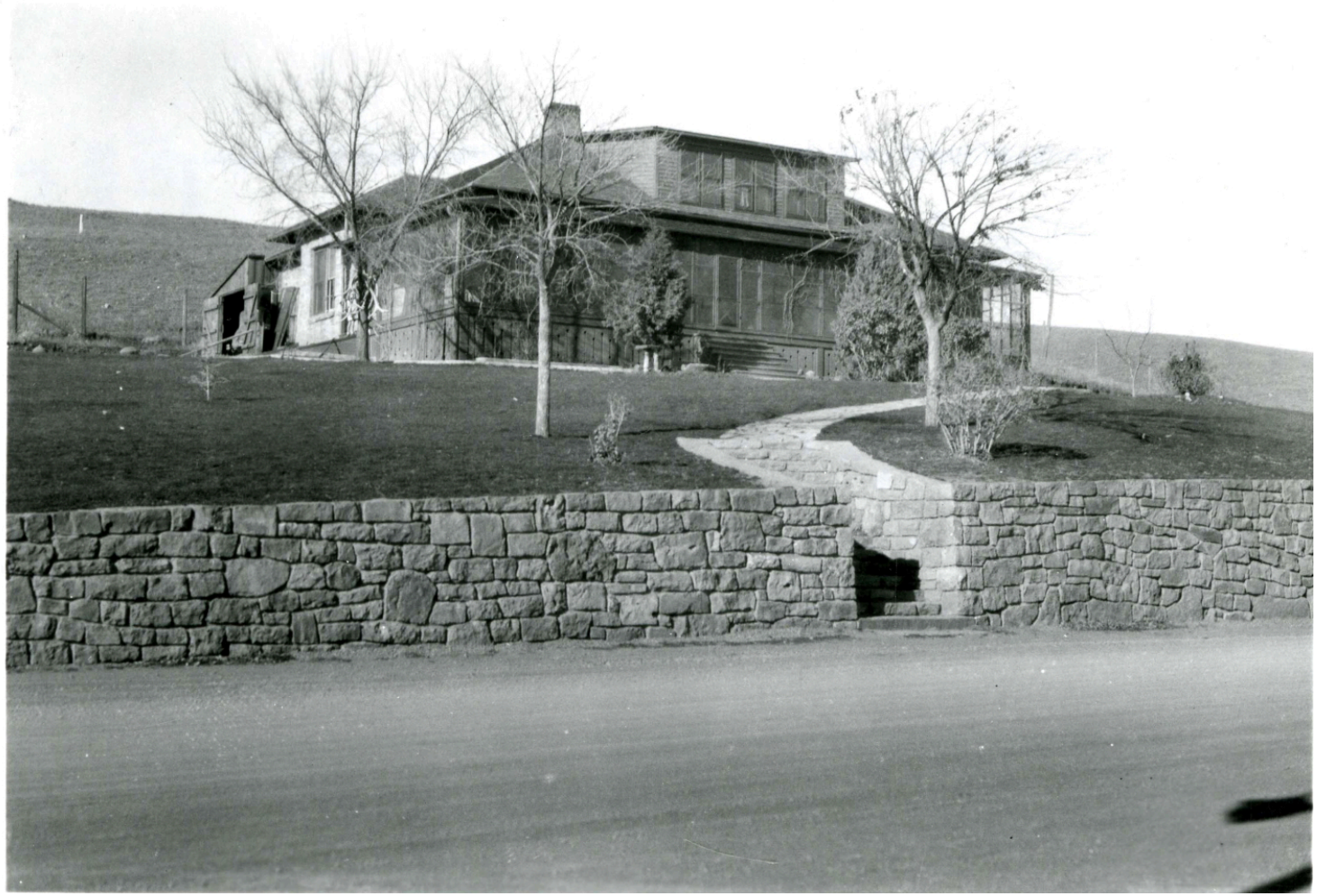
Manufact. Date PRIOR TO 1940
Final HSR Group *Yes*

Below: Front of Image. Right: Back of Image



HSR 2015 Notes

Date on back may be wrong since the stucco garage that was added to back wall in 1932 is not shown.



Park Database Description

Photographic Print and Negative of Buildings - Residence #4. Photographic Print Is Stored at Wind Cave National Park, and the Nitrate Negative Is in Cold Storage at the Midwest Archeological Center.

Appendix B: Wind Cave Park-Selected Database and Photo Files Italicized text added by Deb Sheals Spring 2015 4-15-15

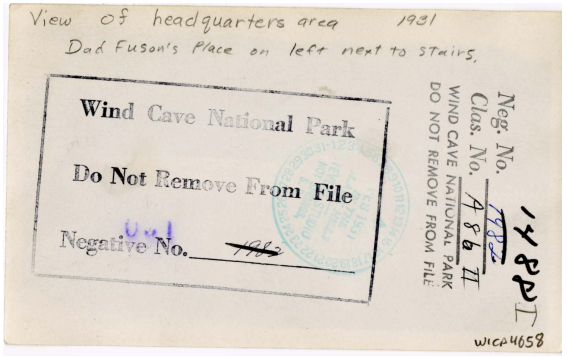
Primary Topic ***HS#*** *HS4*
HS-04

Photo Date *1931, Feb. 14*
Date Source *Stamp on Photo*
Photographer

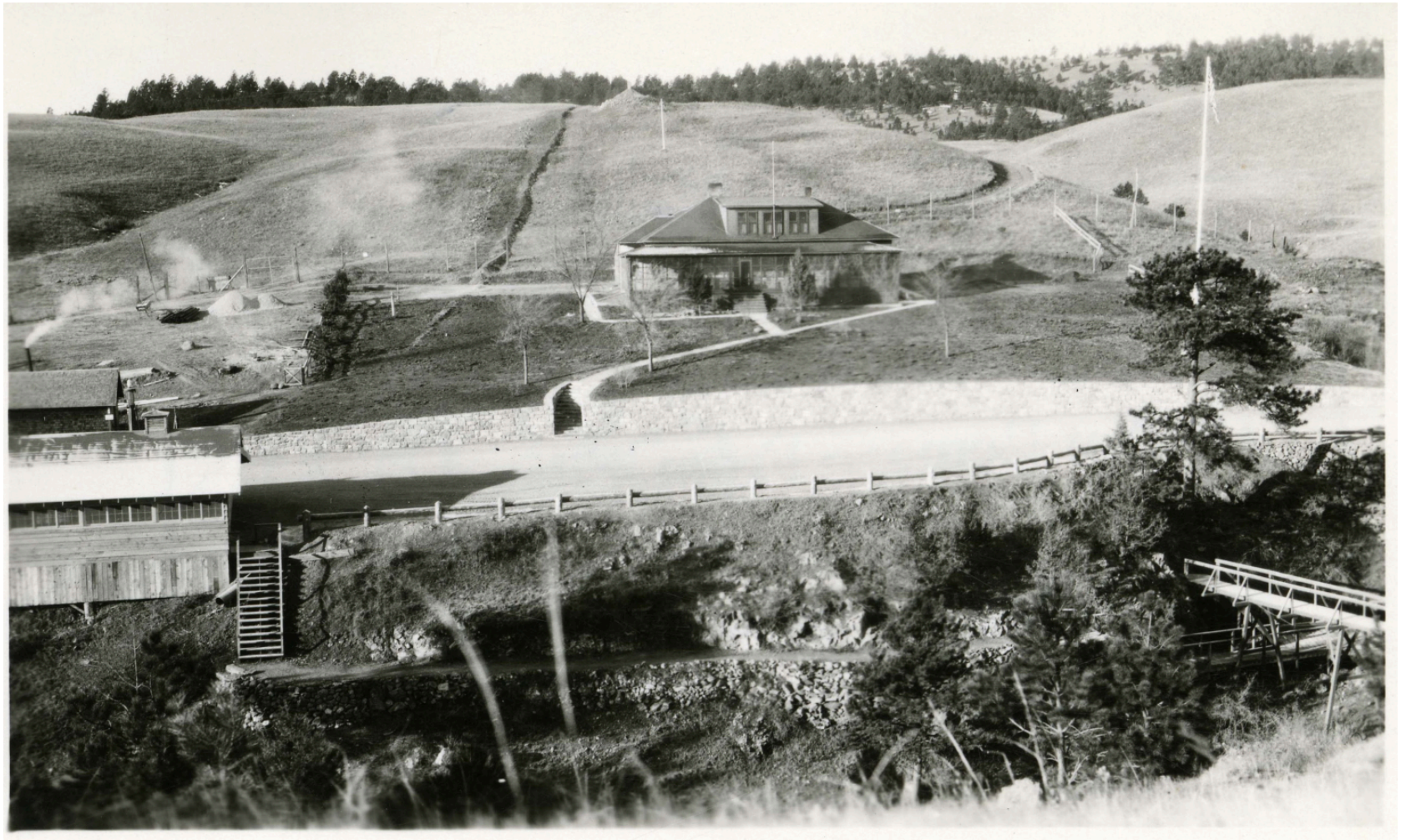
Manufact. Date
Final HSR Group *Yes*

Catalog #
WICA
4658

Below: Front of Image. Right: Back of Image



HSR 2015 Notes



Park Database Description

Photographic Print and Negative of Buildings - Residence #4. Photographic Print Is Stored at Wind Cave National Park, and the Nitrate Negative Is in Cold Storage at the Midwest Archeological Center.

Appendix B: Wind Cave Park-Selected Database and Photo Files Italicized text added by Deb Sheals Spring 2015 4-15-15

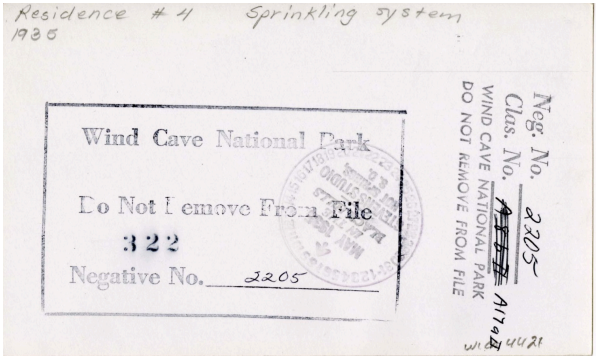
Primary Topic ***HS#*** *HS4*
HS-04

Photo Date *1935, May 8*
Date Source *Stamp on Photo*
Photographer *Stevens Studio*

Manufact. Date 5/1/1935
Final HSR Group *Yes*

Catalog #
WICA
4421

Below: Front of Image. Right: Back of Image





HSR 2015 Notes

This was taken as the stucco was being applied. Note the bay window. The 1932 garage addition is also visible.

Park Database Description

Photographic Print and Negative of Sprinkling System - View Showing the Sprinkling System at Residence #4. Housing Area. Photographic Print Is Stored at Wind Cave National Park, and the Nitrate Negative Is in Cold Storage at the Midwest Archeological Center.

Primary Topic ***HS#*** *HS-04*
HS-04

Photo Date ca. *1937*
Date Source *other, see HSR notes*
Photographer

Manufact. Date 5/26/1938

Catalog #
WICA
4211

Below: Front of Image. Right: Back of Image



HSR 2015 Notes

NOTE: THIS PHOTO WAS PRINTED IN REVERSE; IT HAS BEEN FLIPPED AND CROPPED FOR USE HERE. Used in Monthly Supt report in 1937.

Park Database Description

Photographic Negative of Landscaping - Sodding of Bank Near Residence #4 After Stone Wall Was Removed. Nitrate Negative Is in Cold Storage at the Midwest Archeological Center.

Appendix B: Wind Cave Park-Selected Database and Photo Files Italicized text added by Deb Sheals Spring 2015 4-15-15

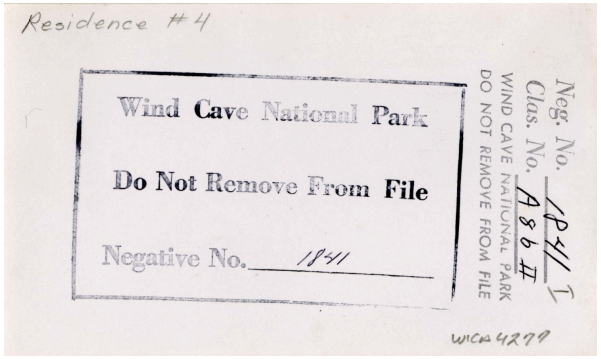
Primary Topic ***HS#*** *HS4*
HS-04

Catalog #
WICA
4277

Photo Date ca. *1940*
Date Source *other, see HSR notes*
Photographer

Manufact. Date
Final HSR Group *Yes*

Below: Front of Image. Right: Back of Image



HSR 2015 Notes

After sidewalk moved to south end of lot. Mature landscaping indicates ca. 1940.



Park Database Description

Photographic Print and Negative of Buildings - Residence #4. See Also 3559 - 3563. Photographic Print Is Stored at Wind Cave National Park, and the Nitrate Negative Is in Cold Storage at the Midwest Archeological Center.

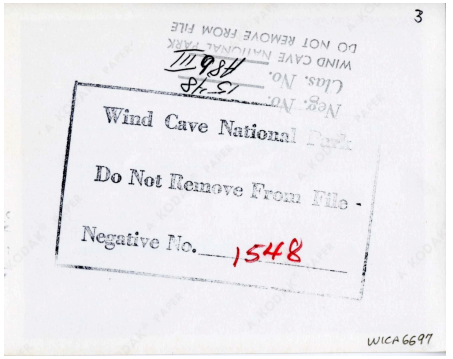
Primary Topic ***HS#*** *HS4*
HS-04

Photo Date ca. *1969*
Date Source *"Manufactured Date"*
Photographer

Manufact. Date WINTER1969
Final HSR Group *Yes*

Catalog #
WICA
6697

Below: Front of Image. Right: Back of Image





HSR 2015 Notes

Includes dormitory addition.

Park Database Description

Photographic Print and Negative of Buildings - Residence #4.

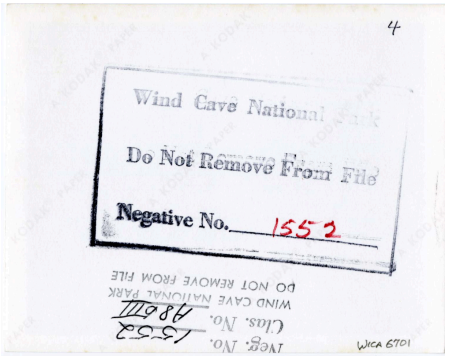
Primary Topic ***HS#*** *HS4*
HS-04

Photo Date ca. *1969*
Date Source *"Manufactured Date"*
Photographer

Manufact. Date WINTER1969
Final HSR Group *Yes*

Catalog #
WICA
6701

Below: Front of Image. Right: Back of Image





HSR 2015 Notes

Park Database Description

Photographic Print and Negative of Building - Residence #4. See Also 3456, 3457

Appendix B: Wind Cave Park-Selected Database and Photo Files Italicized text added by Deb Sheals Spring 2015 4-15-15

Primary Topic ***HS#*** *HS4*
HS-04

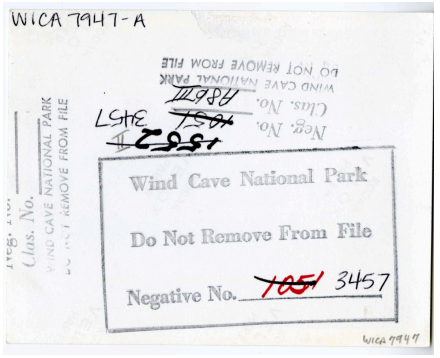
Photo Date ca. *1969*
Date Source *"Manufactured Date"*
Photographer

Manufact. Date WINTER1969
Final HSR Group *Yes*

Catalog #
WICA
7947

HSR 2015 Notes

Below: Front of Image. Right: Back of Image





Park Database Description

Building - Residence #4



HS-04 East Elevation. (SRJA 2014

Appendix C
Cost Estimate

CONSTRUCTION MANAGEMENT RESOURCES, LLC
ESTIMATING • SCHEDULING • PROJECT MANAGEMENT • CONSULTING
5201 JOHNSON DRIVE, SUITE 330, MISSION, KANSAS 66205 (913) 262-6715 • FAX (913) 262-1380

Historic Structures Report - Historic Housing Area
Wind Cave National Park - Hot Springs South Dakota
Susan Richards's Johnson & Associates
Final Report Estimate 01/27/2016

DESCRIPTION		Immediate	Short Term	Long Term
HS-04 Fire Office Building				
01 00 00 GENERAL CONDITIONS	15%	20,914	-	109,000
02 41 00 DEMOLITION		1,800	-	18,932
02 50 00 HAZARDOUS MATERIAL ABATEMENT		4,000	-	250,000
03 30 00 CAST-IN-PLACE CONCRETE		10,061	-	-
04 01 20 MASONRY RESTORATION AND CLEANING		7,896	-	800
04 20 00 MASONRY		-	-	-
05 12 00 STEEL		3,615	-	765
06 10 00 ROUGH CARPENTRY		500	-	18,000
06 13 00 EXTERIOR RESTORATION		2,300	-	2,000
06 40 16 INTERIOR ARCHITECTURAL WOODWORK RESTORATION		-	-	16,000
07 14 00 FLUID-APPLIED WATERPROOFING		-	-	-
07 20 00 STUCCO REPAIRS		44,578	-	74,055
07 21 00 THERMAL INSULATION		9,353	-	5,557
07 50 00 ROOFING		-	-	48,049
07 60 00 SHEET METAL FLASHING AND TRIM		825	-	5,517
07 92 00 JOINT SEALANTS		300	-	-
08 11 00 DOOR & FRAMES		2,200	-	22,450
08 32 13 STORM WINDOWS		2,700	-	-
08 52 00 WOOD WINDOWS		31,600	-	4,500
08 71 00 DOOR HARDWARE		-	-	-
08 80 00 GLAZING		-	-	-
09 20 00 PLASTER REPAIR		-	-	12,136
09 21 16 GYPSUM SYSTEMS		-	-	14,230
09 64 00 FLOORING		-	-	16,889
09 90 00 PAINTING		6,067	-	18,767
10 14 00 SIGNS		-	-	-
10 28 00 TOILET AND BATH ACCESSORIES		-	-	3,810
10 44 00 FIRE-PROTECTION SPECIALTIES		-	-	-
21 00 00 FIRE PROTECTION		-	-	30,723
22 00 00 PLUMBING		-	-	27,350
23 00 00 HVAC		2,100	-	55,265
26 00 00 ELECTRICAL		2,495	-	74,122
31 20 00 EARTH MOVING		1,545	-	-
31 48 13 UNDERPINNING PIERS		-	-	-
32 13 13 CEMENT CONCRETE PAVING		5,161	-	-
32 92 00 LAWN & GRASSES		331	-	-
33 10 00 WATER DISTRIBUTION		-	-	6,750
33 30 00 SANITARY SEWERAGE		-	-	-
33 40 00 STORM DRAINAGE		-	-	-
33 46 16 FOUNDATION DRAINAGE SYSTEMS		-	-	-
subtotal		160,341	-	835,667
Contractor's Fee	10%	16,034	-	83,567
subtotal		176,375	-	919,234
Design/Estimate Contingency	25%	44,094	-	229,808
subtotal		220,468	-	1,149,042
Escalation to Mid-Point - 04/15/2017	3.7%	8,098	-	42,205
TOTAL		**228,566**	**-**	**1,191,247**

***NOTE: Ground disturbance may require archeological monitoring. Costs for monitoring are not included in estimate.**

DESCRIPTION	QUANTITY	UNIT $	TOTAL	Immediate	Short Term	Long Term
HS-04 Fire Office Building						
02 41 00 DEMOLITION						
Immediate						
Remove Chimney Flue Cap	1 EA	100.00	100	100		
Remove Vegetation against Foundation	1 EA	1,500.00	1,500	1,500		
Remove Antenna	1 EA	200.00	200	200		
Long Term						
Demo Kitchen Walls/Cabinets/Finishes	1 LS	2,500.00	2,500			2,500
Demo Kitchen Walls/Cabinets/Finishes	1 LS	2,500.00	2,500			2,500
Demo Conference Room Ceiling	1,787 SF	3.00	5,361			5,361
Demo Fireplace Insert and Seal Damper	1 EA	350.00	350			350
Demo Ceiling @ 100	361 SF	3.00	1,083			1,083
Demo Wd Frame Interior Walls	1,726 SF	1.00	1,726			1,726
Demo Interior Stone Walls	49 SF	10.00	491			491
Demo Stair	1 FL	500.00	500			500
Demo Plumbing Fixtures	10 EA	75.00	750			750
Demo Plaster Walls in Rm 112	1,172 SF	1.00	1,172			1,172
Misc Demo	1 LS	2,500.00	2,500			2,500
			20,732	1,800	0	18,932
02 50 00 HAZARDOUS MATERIAL ABATEMENT						
Immediate						
Hazardous Material Abatement Testing	1 LS	4,000.00	4,000	4,000		
Long Term						
Hazardous Material Abatement ALLOWANCE	1 LS	250,000.00	250,000			250,000
Extent of hazardous materials needs to be determined before accurate estimate can be rendered						
			254,000	4,000	0	250,000
03 30 00 CAST-IN-PLACE CONCRETE						
Immediate						
Concrete/Stone Foundation Repairs	1 LS	1,500.00	1,500	1,500		
Clean and Seal Concrete Slab Front Porch	330 SF	2.00	661	661		
Clean and Seal Concrete Slab @ Lower Patio	SF	2.00	0	0		
Window 002 repair cracks in concrete well walls	EA	100.00	0	0		
Repair cracks in south foundation walls at sun room	EA	200.00	0	0		
New Column Footing in Basement in Grade	11 EA	500.00	5,500	5,500		
New Column Footing in Basement On Slab	2 EA	200.00	400	400		
New Column Footing in Crawl Space ALLOW w/ Shoring	4 EA	500.00	2,000	2,000		
			10,061	10,061	0	0
04 01 20 MASONRY RESTORATION AND CLEANING						
Immediate						
Fill Hole in Basement 001 Wall	1 EA	150.00	150	150		
Replace Fractured Stone	5 EA	250.00	1,250	1,250		
Repoint Foundation Walls	121 SF	8.00	970	970		
Clean Foundation Walls	606 SF	6.00	3,636	3,636		
Mortar Wash Foundation Walls	153 LF	8.00	1,228	1,228		
Repoint South Chimney	23 SF	8.00	185	185		
Clean South Chimney	46 SF	6.00	278	278		
Restore Mortar Wash @ Top of Chimney	2 EA	100.00	200	200		
Long Term						
Clean Stone Fireplace and Hearth	1 EA	800.00	800			800
			8,696	7,896	0	800
04 20 00 MASONRY						
			0	0	0	0
05 12 00 STEEL						
Immediate						
Relocate Steel Post	6 EA	75.00	450	450		
New Steel Post	7 EA	350.00	2,450	2,450		
New Handrail @ Steps	11 LF	65.00	715	715		
Long Term						
Guardrail	7 LF	35.00	245			245
Handrail @ Attic Stair	8 LF	65.00	520			520
			4,380	3,615	0	765
06 10 00 ROUGH CARPENTRY						
Immediate						
New Girder in Basement	14 LF	25.00	350	350		
Rafter Repair/Splice	1 EA	150.00	150	150		
Long Term						
Modify Floor Structure for New Stair	1 EA	1,500.00	1,500			1,500
Demo Wood Stair and Install New	1 EA	2,500.00	2,500			2,500
Rework Walls for Pocket Doors in Rm 102	3 EA	500.00	1,500			1,500
New Stair and required framing modifications	1 EA	7,500.00	7,500			7,500
Roof Restructure ALLOWANCE	1 LS	5,000.00	5,000			5,000
			18,500	500	0	18,000
06 13 00 EXTERIOR RESTORATION						
Immediate						
Misc Wood Trim Repair	1 LS	2,000.00	2,000	2,000		
Replace Wood Louvers	3 EA	100.00	300	300		
Long Term						
Replicate Rustic Shutters	4 PR	500.00	2,000			2,000
			4,300	2,300	0	2,000

DESCRIPTION	QUANTITY	UNIT $	TOTAL	Immediate	Short Term	Long Term
HS-04 Fire Office Building						
06 40 16 INTERIOR ARCHITECTURAL WOODWORK RESTORATION						
Long Term						
Kitchen Base Cabinets	20 LF	350.00	7,000			7,000
Kitchen Wall Cabinets	16 LF	250.00	4,000			4,000
Misc Base Cab w/ Countertop	10 LF	300.00	3,000			3,000
Millwork Restoration ALLOWANCE Rms 100,101,102,104,108,109,112	1 LS	2,000.00	2,000			2,000
			16,000	0	0	16,000
07 14 00 FLUID-APPLIED WATERPROOFING						
			0			0
			0	0	0	0
07 20 00 STUCCO REPAIRS						
Immediate						
Remove Dryer Vent and Patch Stucco	1 EA	200.00	200	200		
General STUCCO Wall Repair (allow 10%)	212 SF	40.00	8,463	8,463		
Remove and Replace STUCCO	1,026 SF	35.00	35,915	35,915		
Long Term						
Remove and Replace STUCCO	2,116 SF	35.00	74,055			74,055
			118,633	44,578	0	74,055
07 21 00 THERMAL INSULATION						
Immediate						
Remove Contaminated Insul and install new	2,771 SF	3.00	8,313	8,313		
Insulate 1st Floor Joists	336 SF	2.50	839	839		
Insulate Exposed Ductwork	1 LS	200.00	200	200		
Long Term						
Vapor Barrier @ Crawl Space	1,096 SF	1.50	1,644			1,644
Insulate 1st Floor Joists	1,096 SF	2.50	2,741			2,741
Insulate Walls @ Rm 112	1,172 SF	1.00	1,172			1,172
			14,909	9,353	0	5,557
07 50 00 ROOFING						
Long Term						
Demo Roofing and Install New Decra Steel Roofing System	4,004 SF	12.00	48,049			48,049
			48,049	0	0	48,049
07 60 00 SHEET METAL FLASHING AND TRIM						
Immediate						
New Flue Caps	3 EA	150.00	450	450		
Downspout Extensions	5 EA	75.00	375	375		
Long Term						
New Custom Box Gutters	153 LF	25.00	3,837			3,837
Custom Downspouts	112 LF	15.00	1,680			1,680
			6,342	825	0	5,517
07 92 00 JOINT SEALANTS						
Immediate						
Misc Exterior Caulking	1 LS	300.00	300	300		
			300	300	0	0
08 11 00 DOOR & FRAMES						
Immediate						
Replace Storm Doors	3 EA	650.00	1,950	1,950		
Replace Door Threshold	1 EA	250.00	250	250		
Long Term						
Restore Historic Doors & Hardware	13 EA	1,000.00	13,000			13,000
New Door & Hardware 001-1, 109-2, 113-1, 200-1, 200-2, 204-1	6 EA	1,500.00	9,000			9,000
New Access Door	1 EA	450.00	450			450
			24,650	2,200	0	22,450
08 32 13 STORM WINDOWS						
Immediate						
Install New Storm Windows at Window 200	2 EA	150.00	300	300		
Fabricate Custom Wood Storms	8 EA	300.00	2,400	2,400		
			2,700	2,700	0	0
08 52 00 WOOD WINDOWS						
Immediate						
Replace Windows w/ Historically Appropriate Windows	14 EA	2,000.00	28,000	28,000		
Restore Windows	6 EA	600.00	3,600	3,600		
Long Term						
Replace Windows w/ Historically Appropriate Windows 2nd floor	3 EA	1,500.00	4,500			4,500
			36,100	31,600	0	4,500
08 71 00 DOOR HARDWARE						
			0			0
			0	0	0	0
08 80 00 GLAZING						
			0			0
			0	0	0	0
09 20 00 PLASTER REPAIR						
Long Term						
Restore Plaster Ceiling	1,787 SF	6.00	10,723			10,723
Restore Plaster Walls	942 SF	1.50	1,413			1,413
			12,136	0	0	12,136

DESCRIPTION	QUANTITY	UNIT $	TOTAL	Immediate	Short Term	Long Term
HS-04 Fire Office Building						
09 21 16 GYPSUM SYSTEMS						
Long Term						
New Wood Framed Walls w/ Gyp	1,709 SF	5.00	8,543			8,543
Gyp Walls @ Rm 112	1,172 SF	3.00	3,515			3,515
Gyp Ceiling in Attic	543 SF	4.00	2,172			2,172
			14,230	0	0	14,230
09 64 00 FLOORING						
Long Term						
Flooring @ Entry/Kitchen/Copy	426 SF	5.00	2,130			2,130
Restore Wood Floors in 102, 108, 109, 112	1,256 SF	8.00	10,052			10,052
Carpet in 100/101, and Attic	113 SY	35.00	3,972			3,972
Flooring In RR	117 SF	3.50	411			411
Clean & Seal Concrete Floor in Basement	216 SF	1.50	324			324
			16,889	0	0	16,889
09 90 00 PAINTING						
Immediate						
Repair and Paint Bulkhead Door	1 EA	250.00	250	250		
Misc Stucco Painting	2,116 SF	1.25	2,645	2,645		
Misc Paint/Stain Wood Trim/Siding/Windows	1 LS	2,500.00	2,500	2,500		
Paint Gutters and Downspouts	269 LF	2.50	672	672		
Long Term						
Paint Interior Walls after Plaster Repairs ALLOWANCE	8,415 SF	1.50	12,622			12,622
Paint Ceilings	3,072 SF	2.00	6,145			6,145
			24,834	6,067	0	18,767
10 14 00 SIGNS						
			0			0
			0	0	0	0
10 28 00 TOILET AND BATH ACCESSORIES						
Long Term						
TP Holder	2 EA	45.00	90			90
Grab Bars	2 EA	75.00	150			150
Mirrors	2 EA	250.00	500			500
Soap Dispensers	2 EA	35.00	70			70
Hand Dryers	2 EA	1,500.00	3,000			3,000
			3,810	0	0	3,810
10 44 00 FIRE-PROTECTION SPECIALTIES						
			0	0		
			0	0	0	0
21 00 00 FIRE PROTECTION						
Long Term						
Fire Sprinkler System	3,072 SF	10.00	30,723			30,723
			30,723	0	0	30,723
22 00 00 PLUMBING						
Long Term						
New Kitchen Sink/Faucet/Garbage Disposal	1 EA	4,500.00	4,500			4,500
New Water Closet	2 EA	3,500.00	7,000			7,000
New Lavatory	2 EA	3,250.00	6,500			6,500
New Mop Sink	1 EA	2,500.00	2,500			2,500
Washer Box in Basement	1 EA	1,850.00	1,850			1,850
Hot Water System	1 EA	5,000.00	5,000			5,000
			27,350	0	0	27,350
23 00 00 HVAC						
Immediate						
Extend Exhaust Fan Vents Through Roof	3 EA	300.00	900	900		
New Ducted Exhaust @ Range	1 EA	1,200.00	1,200	1,200		
Long Term						
New HVAC System	3,072 SF	17.50	53,765			53,765
New Vent Hood in Basement	1 EA	1,500.00	1,500			1,500
			57,365	2,100	0	55,265
26 00 00 ELECTRICAL						
Immediate						
Repair Light Fixture Above Door 112-1	1 EA	250.00	250	250		
Add Egress Lighting	3 EA	350.00	1,050	1,050		
Add Lighting controls for Exterior Lights	2 EA	200.00	400	400		
Install GFCI Outlets @ Existing Locations	4 EA	105.00	420	420		
Install Disconnect Switch for Water Heater	1 EA	125.00	125	125		
Relocate Exposed Wiring to Interior	1 EA	250.00	250	250		
Long Term						
Lighting	3,072 SF	8.00	24,578			24,578
Lighting in Basement & Crawl Space	2,268 SF	3.00	6,803			6,803
Restore Historic Light Fixtures	7 EA	400.00	2,800			2,800
Power	3,072 SF	4.00	12,289			12,289
Telecommunications	3,072 SF	2.00	6,145			6,145
Distribution	3,072 SF	3.00	9,217			9,217
Fire Alarm	3,072 SF	2.50	7,681			7,681
Security	3,072 SF	1.50	4,608			4,608
			76,617	2,495	0	74,122
31 20 00 EARTH MOVING						
Immediate						
Regrade at West and South Side of House	55 SY	28.00	1,545	1,545		
			1,545	1,545	0	0

DESCRIPTION	QUANTITY	UNIT $	TOTAL	Immediate	Short Term	Long Term
HS-04 Fire Office Building						
31 48 13 UNDERPINNING PIERS						
			0	0		
			0	0	0	0
32 13 13 CEMENT CONCRETE PAVING						
Immediate						
Sawcut and Install Soft Joint	129 LF	40.00	5,161	5,161		
			5,161	5,161	0	0
32 92 00 LAWN & GRASSES						
Seed	55 SY	6.00	331	331		
			331	331	0	0
33 10 00 WATER DISTRIBUTION						
Long Term						
New Water Line For Sprink;ler ALLOW	150 LF	45.00	6,750			6,750
			6,750	0	0	6,750
33 30 00 SANITARY SEWERAGE						
			0			0
			0	0	0	0
33 40 00 STORM DRAINAGE						
			0			0
			0	0	0	0
33 46 16 FOUNDATION DRAINAGE SYSTEMS						
			0			0
			0	0	0	0