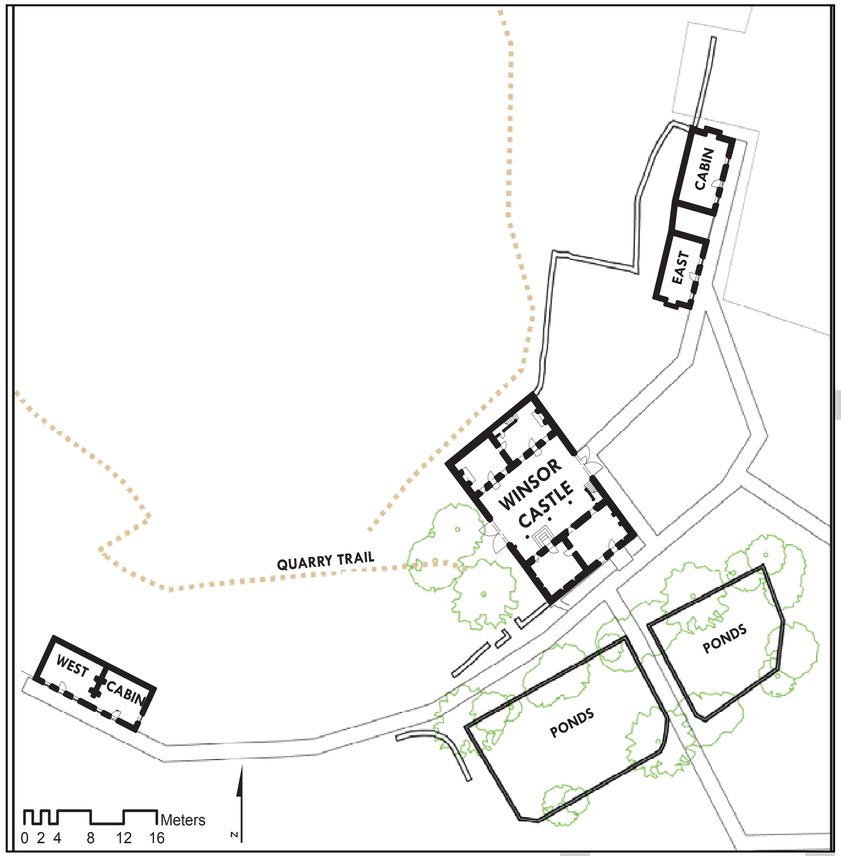
PIPE SPRING NATIONAL MONUMENT
NATIONAL PARK SERVICE, FREDONIA, ARIZONA

UNIVERSITY OF PENNSYLVANIA
Architectural Conservation Laboratory

SPONSORED BY: THE NATIONAL PARK SERVICE
SUPERINTENDENT OF PIPE SPRING: JOHN HISCOCK

PREPARED BY: ARCHITECTURAL CONSERVATION LABORATORY AND RESEARCH CENTER
PROJECT DIRECTOR: FRANK G. MATERO, UNIVERSITY OF PENNSYLVANIA
PROJECT SUPERVISORS: JOHN HINCHMAN AND MEREDITH KELLER, UNIVERSITY OF PENNSYLVANIA
DRAWN BY: LAUREN V. DRAPALA AND YARITZA HERNANDEZ



CONDITIONS LEGEND

MORTAR TYPE

TYPE A:	Pink lime Spec Mix mortar. (2007-present)
TYPE B:	Orange-tan, Kanab sand-based mortar. (c.1990-2007)
TYPE C:	White-gray cement mortar. (c. 1959)
TYPE D:	Deep red-brown, soil-based mortar. (Date Unknown)
TYPE E:	Dark Gray Cement mortar. (Date Unknown)
TYPE F:	Soil-based mortar with large pebble aggregate. (Date Unknown)
TYPE G:	A fine textured, red clay based mortar, with minimal aggregate. (Date Unknown)
TYPE H:	Badly deteriorated forms of Mortar Type B and C.
TYPE I:	Hard purple coarse textured mortar with large pebbles.(Date Unknown)

ATTRIBUTES

CALICHE:	Hardened deposits of calcium carbonate.
TOOL MARKS:	Both quarrying marks and stone surface finishes.
GRAFFITI:	Engraving, scratching, cutting or application of paint, ink or similar matter on the stone surface.
INSCRIPTIONS:	Writing, through engraving and carving, that most often displays a person's name and date.

DETERIORATION

LOSS:	Voids in the stone surface, as a result of erosion, alveolization or mechanical damage.
CRACKING:	Individual fissures, over 1/4 inch, resulting in the fragmentation of the stone.
DELAMINATION:	Planar detachment of the stone related to its bedding orientation.
EFFLORESCENCE:	Generally whitish, powdery or whisker-like crystals of watersoluble salt.
BIOGROWTH	Colonization of micro-organisms such as bacteria, cyanobacteria, algae, fungi and lichen (symbioses of the latter three), genrally visible as green, brown or black surface discoloration.
DIFFERENTIAL EROSION:	Uneven surface loss of stone resulting from weathering.
AVEOLAR EROSION:	Formation of cavities of variable shapes and sizes on the stone surface
MOISTURE:	Areas of stone and mortar that were both visibly and physically wet.
CRYSTALLIZATION:	Surface of stone that has become hardened due to the precipitation of solid crystals.
DISPLACEMENT:	Stone shifting from its original position, which may be coupled with cracking, where one side of th crack is extended a further distance than the other.

REPAIR CONDITIONS

STAINING:	Whitish staining from water flow.
OVER-SPILL:	Whitish grey staining on stone edges from cementitious mortar repointing.

DRAWING KEY:

XX — Room Number

XX — Elevation Number

XX — Window Opening

XX — Door Opening

PHASE NOTES:

- National Park Service 1924-Present
- Pipe Spring Land and Livestock Co. 1909-1924
- Private Ownership 1895-1908
- LDS Church 1879-1895
- Winsor Castle Stock Growing Co. 1870-1879
- Local Militia Outpost 1866-1870
- Whitmore Dugout 1863-66

KEY:

- 1923 Original Fabric
- 1925 Restoration

A - ARCHITECTURAL

A-0.0	PIPE SPRING LOCATION PLAN
A-0.1	PIPE SPRING SITE PLAN
A-1.1	WINSOR CASTLE PLANS
A-1.2	WINSOR CASTLE ELEVATIONS
A-1.3	WINSOR CASTLE SECTIONS
A-2.1	EAST CABIN PLAN
A-2.2	EAST CABIN ELEVATIONS
A-2.3	EAST CABIN SECTIONS
A-3.1	WEST CABIN PLAN
A-3.2	WEST CABIN ELEVATIONS

B - CONDITIONS SURVEY

WINSOR CASTLE ELEVATIONS

B-1.1	NORTHEAST EXTERIOR ELEVATION
B-1.2	NORTHWEST EXTERIOR ELEVATION
B-1.3	SOUTHWEST EXTERIOR ELEVATION
B-1.4	SOUTHEAST EXTERIOR ELEVATION
B-1.5	SOUTHEAST ELEVATION - SECTION XX
B-1.6	NORTHWEST ELEVATION -SECTION YY
B-1.7	SECTIONS XX AND SECTION VV

EAST CABIN ELEVATIONS

B-2.1	EAST EXTERIOR
B-2.2	SOUTH AND NORTH EXTERIOR
B-2.3	SOUTH AND WEST INTERIOR
B-2.4	NORTH AND EAST INTERIOR
B-2.5	SOUTH, WEST AND NORTH INTERIOR
B-2.6	SOUTH AND WEST INTERIOR
B-2.7	NORTH AND EAST INTERIOR

WEST CABIN ELEVATIONS

B-3.1	SOUTH EXTERIOR
B-3.2	WEST AND EAST EXTERIOR
B-3.3	NORTH EXTERIOR
B-3.4	WEST AND NORTH INTERIOR
B-3.5	EAST AND SOUTH INTERIOR
B-3.6	WEST AND NORTH INTERIOR
B-3.7	EAST AND SOUTH INTERIOR

C - ARCHAEOLOGICAL

CABIN ARCHAEOLOGICAL EXCAVATIONS

C-2.1	EAST CABIN
C-3.1	WEST CABIN

D - MORPHOLOGICAL EVOLUTION

WINSOR CASTLE ARCHAEOLOGICAL EXCAVATIONS

C-1.1	EXTERIOR
C-1.2	INTERIOR
D-2.1	EAST CABIN
D-3.1	WEST CABIN

PIPE SPRING SITE PLAN

Meters
0 2 4 8 12 16

N

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MEREDITH KELLER

LAUREN V. DRAPALA
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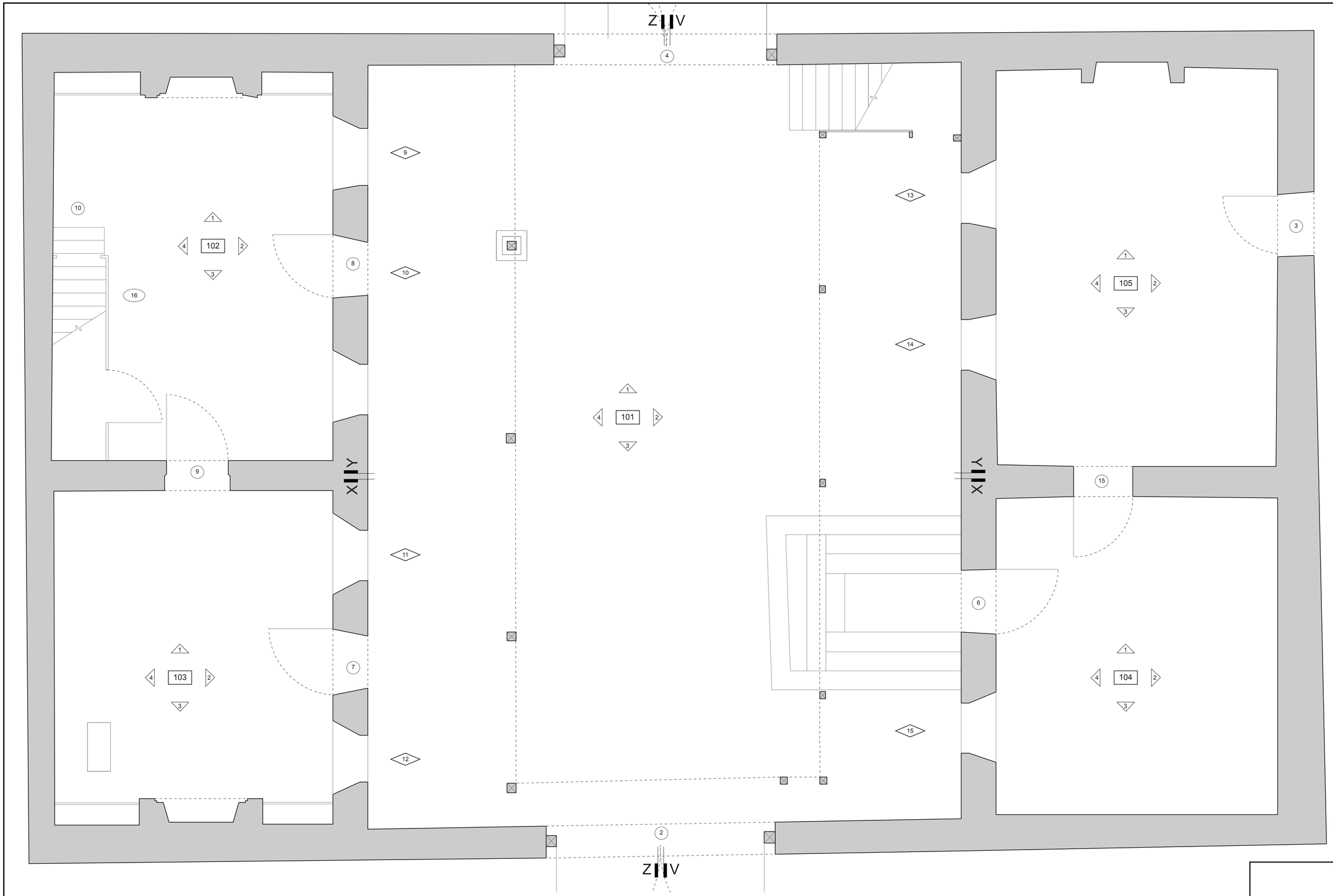
UNIVERSITY OF PENNSYLVANIA
SCHOOL OF DESIGN
GRADUATE PROGRAM IN HISTORIC PRESERVATION

SHEET TITLE:
SITE PLAN
ARCHITECTURAL DRAWINGS

SITE RECORDING:
JUNE, 2010

SHEET NO.:
A-0.1

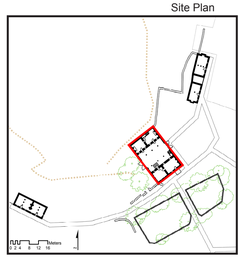


WINSOR CASTLE FIRST FLOOR PLAN

0 2.5 5 7.5 10 Feet

N

Site Plan



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ARCHITECTURAL DRAWINGS

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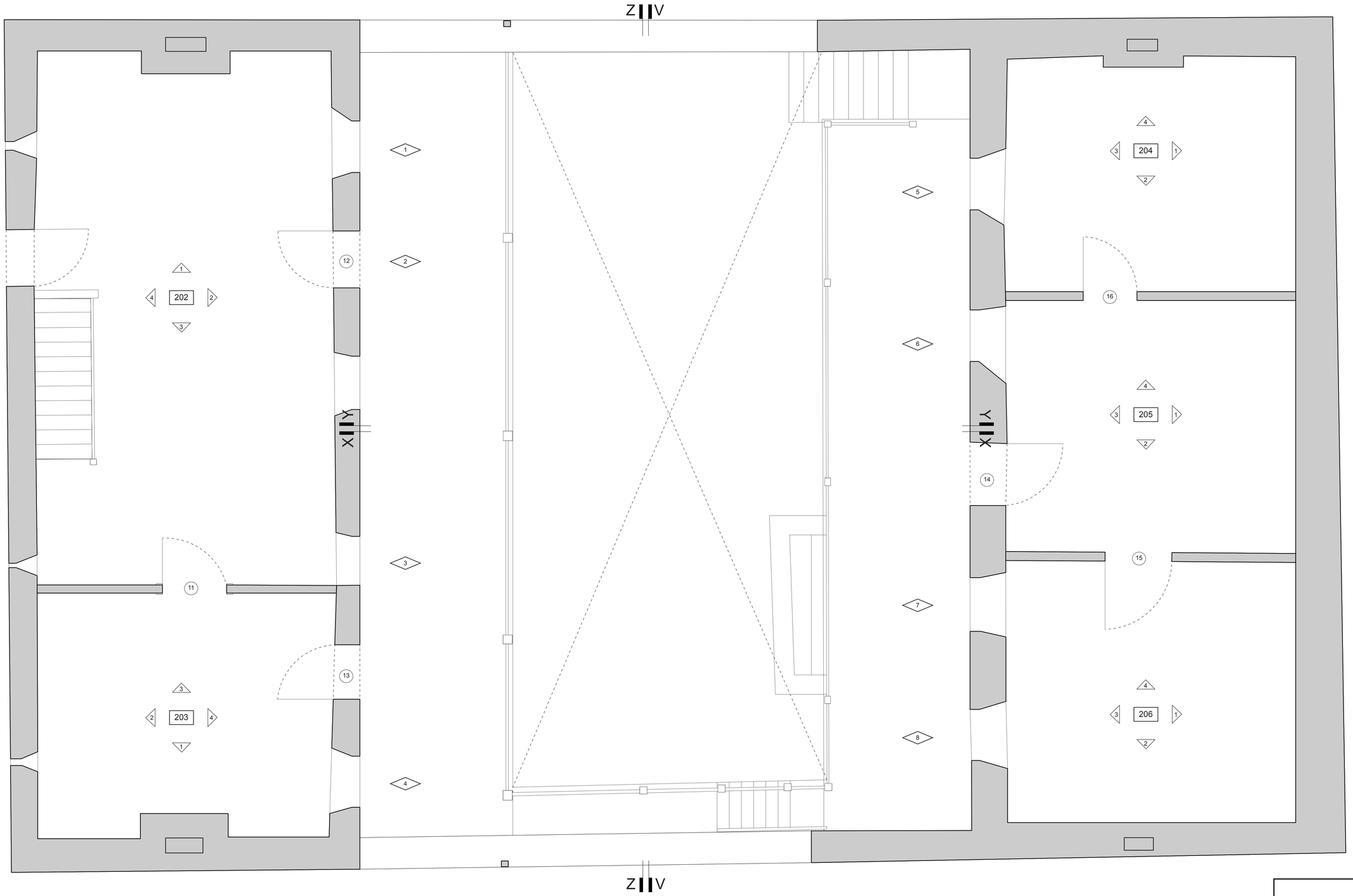

WINSOR CASTLE SECOND FLOOR PLAN

0 2.5 5 7.5 10 Feet

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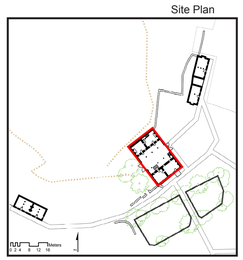

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LAUREN V. DRAPALA
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SHEET TITLE:
WINSOR CASTLE SECOND FLOOR PLAN
ARCHITECTURAL DRAWINGS

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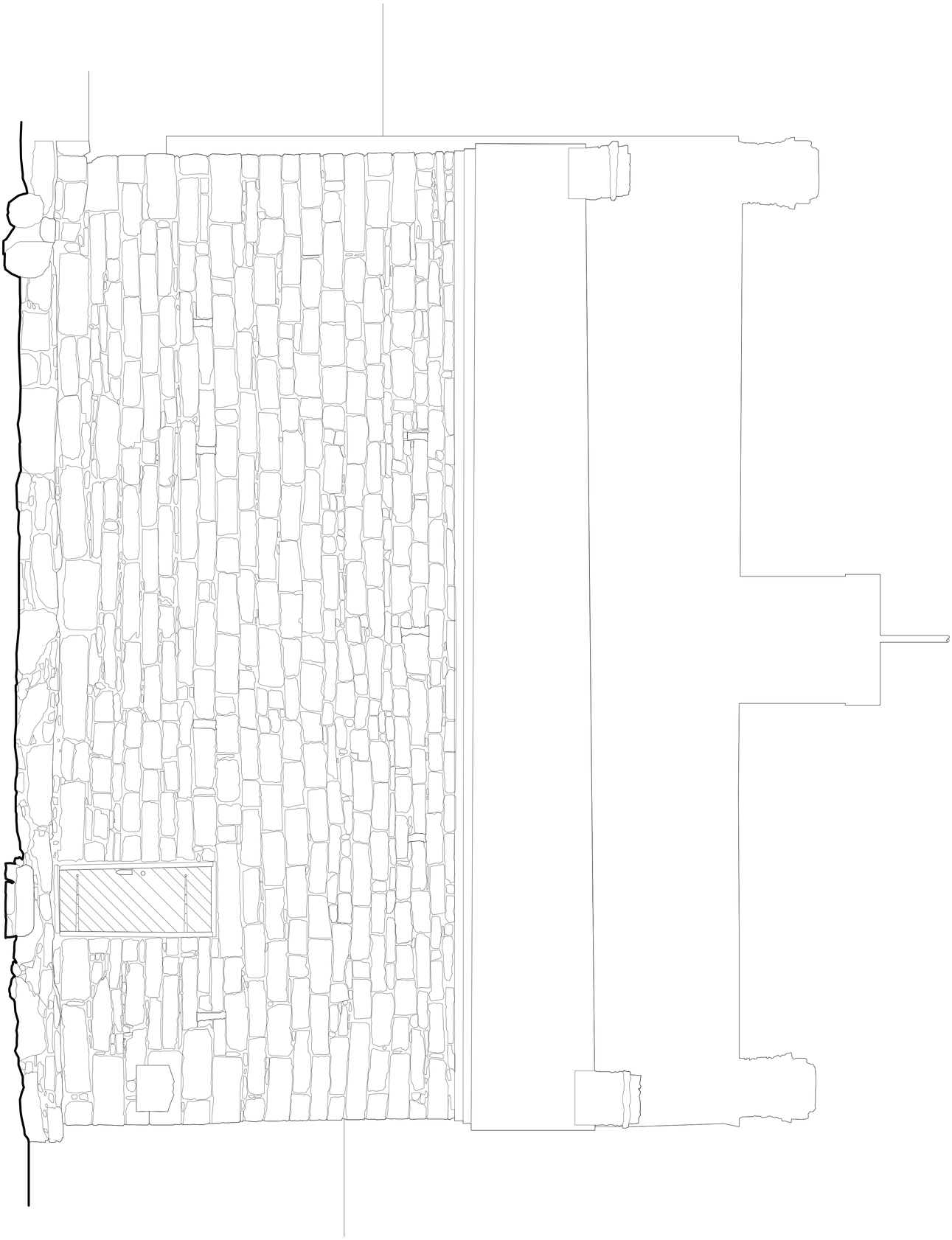
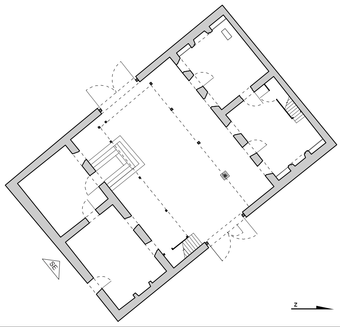
SHEET NO.:
A-1.1.2

SOUTHEAST ELEVATION



0 2.5 5 7.5 10 Feet



Location Plan

PIPE SPRING NATIONAL MONUMENT

NATIONAL PARK SERVICE, FREDONIA, ARIZONA

SHEET TITLE:	SPONSORED BY:		PROJECT DIRECTOR:	PROJECT SUPERVISORS:
WINSOR CASTLE: SOUTHEAST ELEVATION ARCHITECTURAL DRAWINGS	NATIONAL PARK SERVICE SUPERINTENDENT OF PIPE SPRING: JOHN HISCOCK	LAUREN V. DRAPALA YARITZA HERNANDEZ DIGITIZED FROM HABS DRAWINGS, 1940	FRANK G. MATERO, UNIVERSITY OF PENNSYLVANIA	JOHN HINCHMAN MEREDITH KELLER

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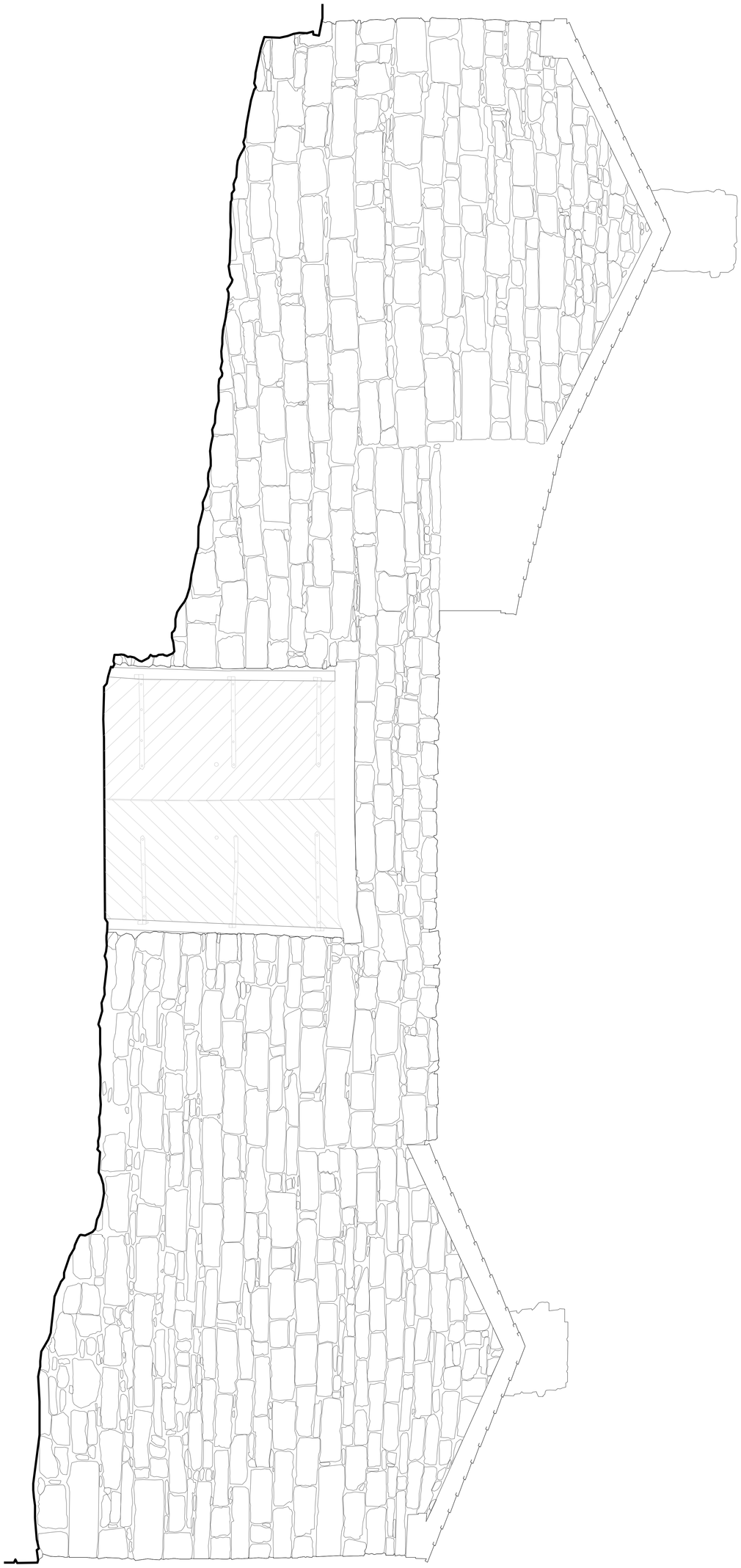
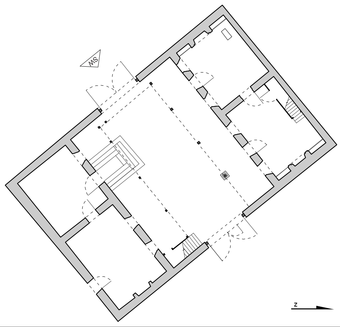
A-1.2.1	OCTOBER, 2010	ARCHITECTURAL CONSERVATION LABORATORY AND RESEARCH CENTER GRADUATE PROGRAM IN HISTORIC PRESERVATION SCHOOL OF DESIGN UNIVERSITY OF PENNSYLVANIA



SOUTHWEST ELEVATION

0 2.5 5 7.5 10 Feet



Location Plan

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SHEET NO.:	SITE RECORDING:	
A-1.2.2	OCTOBER, 2010	ARCHITECTURAL CONSERVATION LABORATORY AND RESEARCH CENTER GRADUATE PROGRAM IN HISTORIC PRESERVATION SCHOOL OF DESIGN UNIVERSITY OF PENNSYLVANIA

Location Plan

NORTHWEST ELEVATION

0 2.5 5 7.5 10 Feet

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SHEET TITLE:
WINSOR CASTLE: NORTHWEST ELEVATION
ARCHITECTURAL DRAWINGS

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OCTOBER, 2010

SHEET NO.:
A-1.2.3

Location Plan

NORTHEAST ELEVATION

0 2.5 5 7.5 10 Feet

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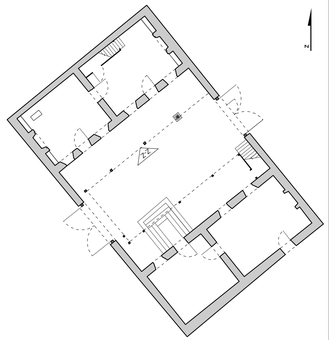
SHEET TITLE:
WINSOR CASTLE: NORTHEAST ELEVATION
ARCHITECTURAL DRAWINGS

SITE RECORDING:
OCTOBER, 2010

SHEET NO.:
A-1.2.4

Location Plan



SOUTHEAST ELEVATION OF UPPER BUILDING - SECTION Z-Z

0 2.5 5 7.5 10 Feet

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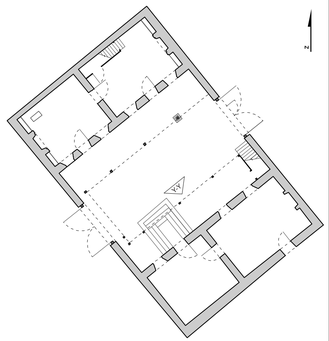
SHEET TITLE:
WINSOR CASTLE: SOUTHEAST ELEVATION
ARCHITECTURAL DRAWINGS

SITE RECORDING:
OCTOBER, 2010

SHEET NO.:
A-1.3.1

Location Plan



NORTHWEST ELEVATION OF LOWER BUILDING - SECTION Y-Y

0 2.5 5 7.5 10 Feet

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SHEET TITLE:
WINSOR CASTLE : NORTHWEST ELEVATION
ARCHITECTURAL DRAWINGS

SITE RECORDING:
OCTOBER, 2010

SHEET NO.:
A-1.3.2

SECTION X-X

SECTION V-V

Location Plan

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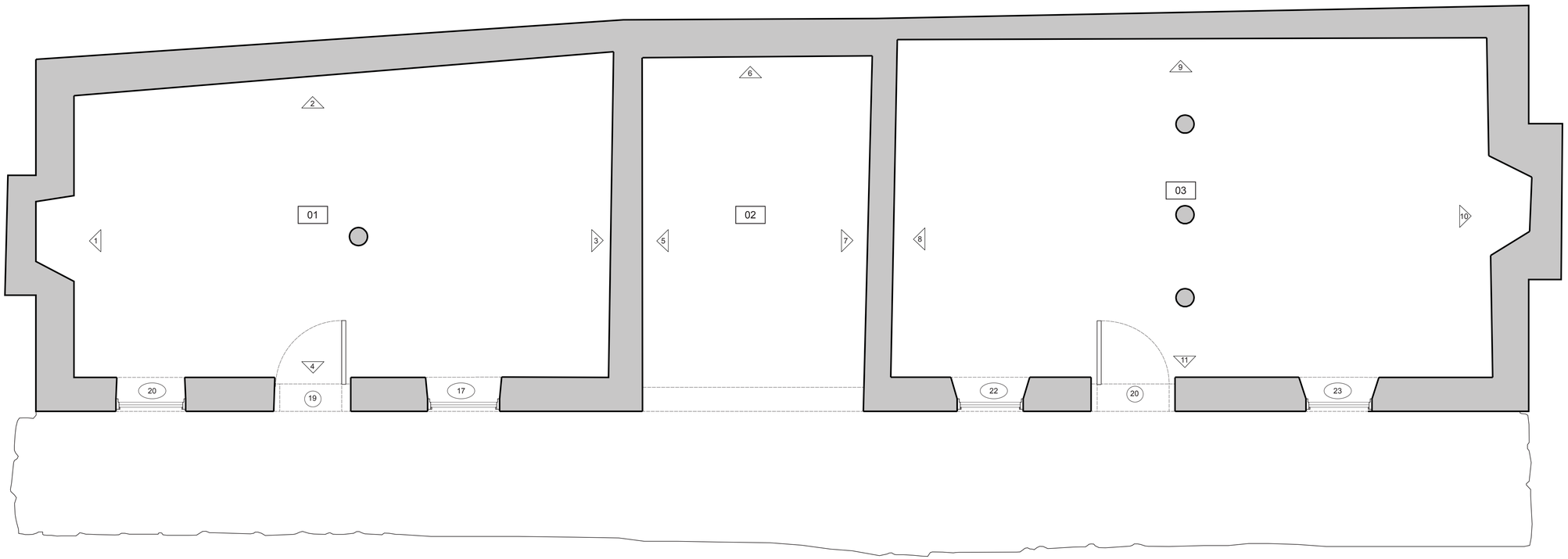
SHEET TITLE:
WINSOR CASTLE : INTERIOR ELEVATIONS
ARCHITECTURAL DRAWINGS

SITE RECORDING:
OCTOBER, 2010

SHEET NO.:
A-1.3.3

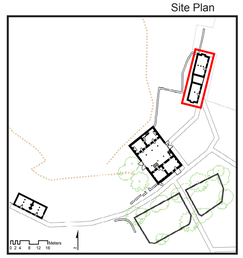


EAST CABIN FLOOR PLAN

0 2.5 5 7.5 10 Feet

N

Site Plan



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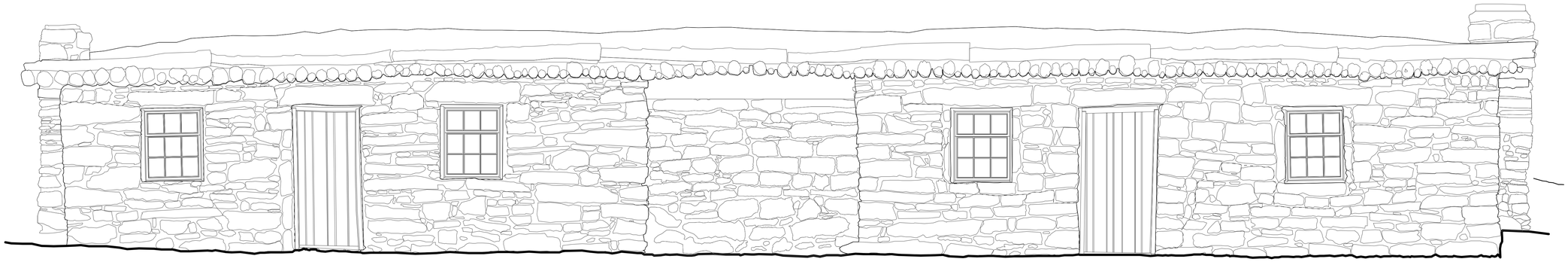
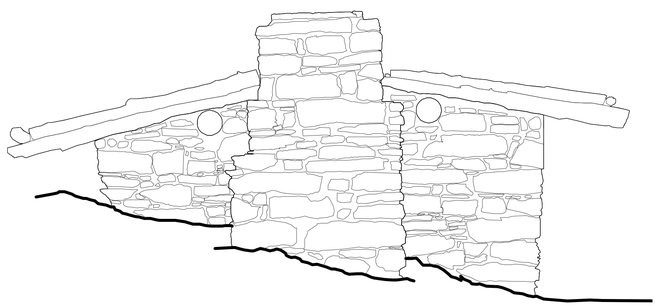
SHEET TITLE:
EAST CABIN FLOOR PLAN
ARCHITECTURAL DRAWINGS

SITE RECORDING:
JUNE, 2010

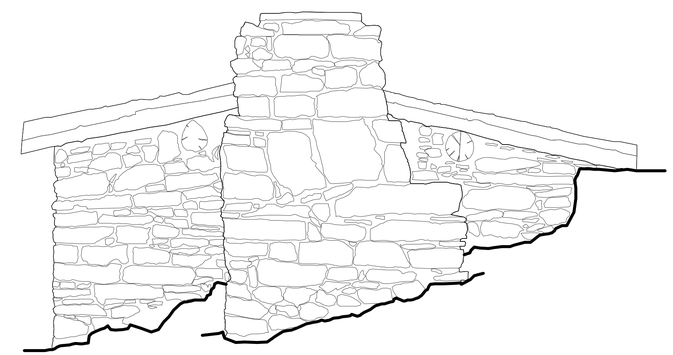
SHEET NO.:
A-2.1



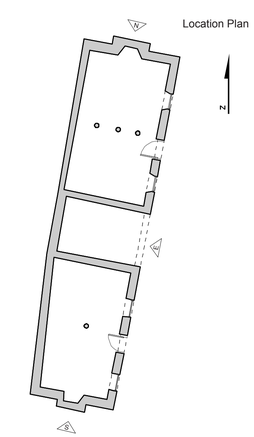
EAST ELEVATION E



SOUTH ELEVATION S



NORTH ELEVATION N



EAST CABIN ELEVATIONS

0 2.5 5 7.5 10 Feet

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DRAWN BY:
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UNIVERSITY OF PENNSYLVANIA
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ARCHITECTURAL CONSERVATION
GRADUATE PROGRAM IN HISTORIC PRESERVATION

SHEET TITLE:
EAST CABIN: NORTH/SOUTH/EAST ELEVATIONS
ARCHITECTURAL DRAWINGS

SITE RECORDING:
JUNE, 2010

SHEET NO.:
A-2.2

WEST CABIN FLOOR PLAN

0 2.5 5 7.5 10 Feet

N

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NATIONAL PARK SERVICE, FREDONIA, ARIZONA

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SHEET TITLE:
WEST CABIN FLOOR PLAN
ARCHITECTURAL DRAWINGS

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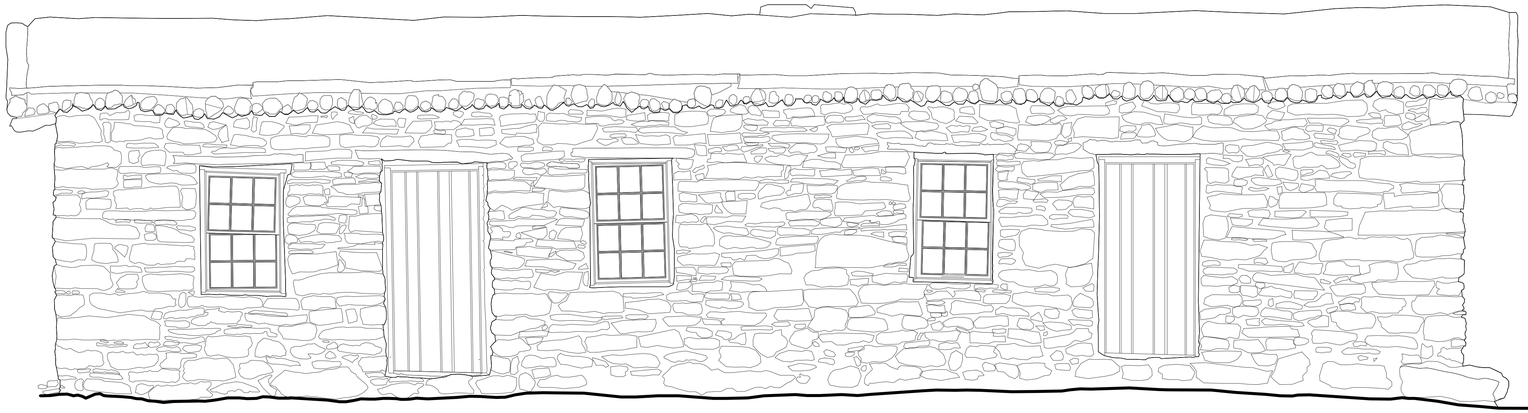
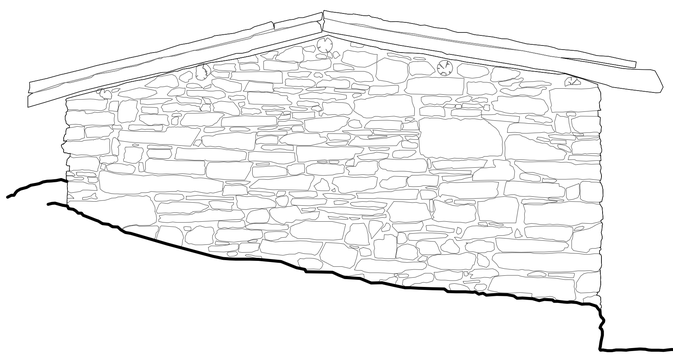
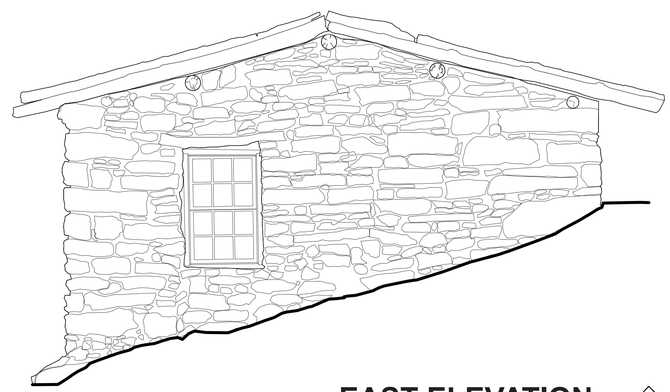
SHEET NO.:
A-3.1



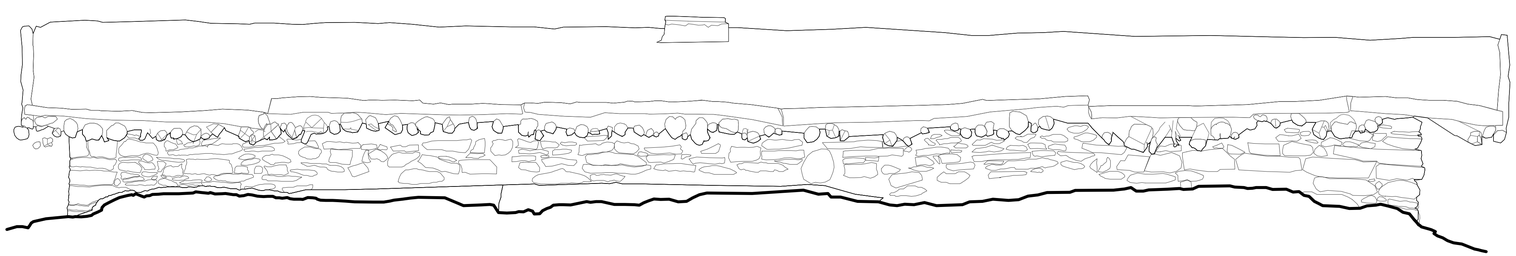
SOUTH ELEVATION S



WEST ELEVATION W

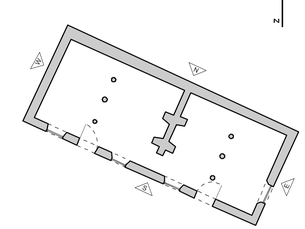


EAST ELEVATION E



NORTH ELEVATION N

Location Plan



WEST CABIN ELEVATIONS

0 2.5 5 7.5 10 Feet

PIPE SPRING NATIONAL MONUMENT
NATIONAL PARK SERVICE, FREDONIA, ARIZONA

SPONSORED BY:
NATIONAL PARK SERVICE
SUPERINTENDENT OF PIPE SPRING:
JOHN HISCOCK

PROJECT DIRECTOR:
FRANK G. MATERO,
UNIVERSITY OF PENNSYLVANIA

PROJECT SUPERVISORS:
JOHN HINCHMAN
MEREDITH KELLER

DRAWN BY:
LAUREN V. DRAPALA
YARITZA HERNANDEZ
DIGITIZED FROM HABS DRAWINGS, 1940

ARCHITECTURAL CONSERVATION LABORATORY AND RESEARCH CENTER
UNIVERSITY OF PENNSYLVANIA
SCHOOL OF DESIGN
GRADUATE PROGRAM IN HISTORIC PRESERVATION

SHEET TITLE:
WEST CABIN: NORTH/EAST/WEST ELEVATIONS
ARCHITECTURAL DRAWINGS

SITE RECORDING:
JUNE, 2010

SHEET NO.:
A-3.2

Original - 1923 Fabric 2007 Restoration

NORTHEAST ELEVATION

0 2.5 5 7.5 10 Feet

Location Plan

PIPE SPRING NATIONAL MONUMENT
NATIONAL PARK SERVICE, FREDONIA, ARIZONA

PROJECT DIRECTOR:
FRANK G. MATERO,
UNIVERSITY OF PENNSYLVANIA

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MEREDITH KELLER

LAUREN V. DRAPALA
YARITZA HERNANDEZ
DIGITIZED FROM HABS DRAWINGS, 1940

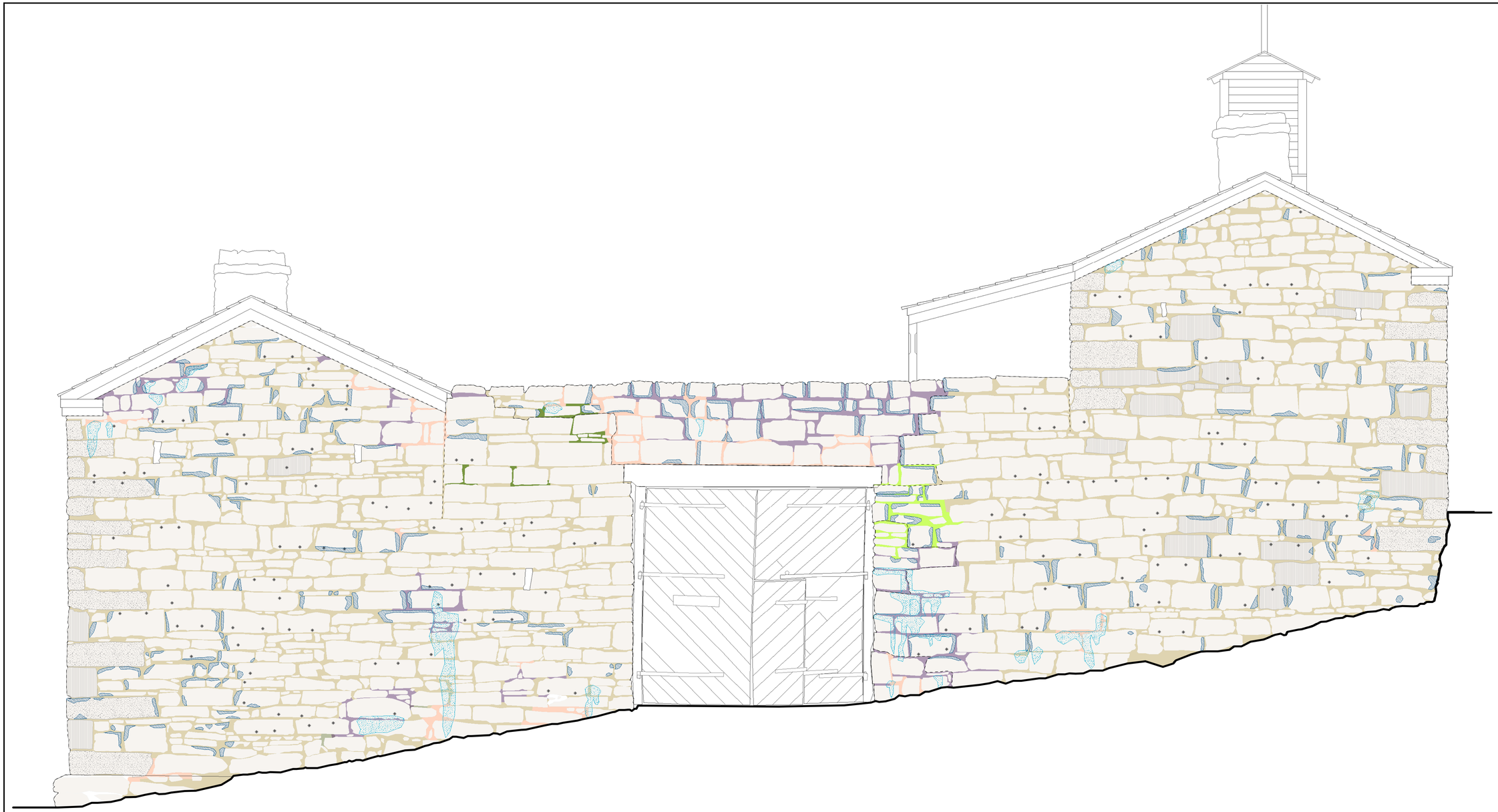
SPONSORED BY:
NATIONAL PARK SERVICE
SUPERINTENDENT OF PIPE SPRING:
JOHN HISCOCK

ARCHITECTURAL CONSERVATION LABORATORY AND RESEARCH CENTER
GRADUATE PROGRAM IN HISTORIC PRESERVATION
UNIVERSITY OF PENNSYLVANIA
SCHOOL OF DESIGN

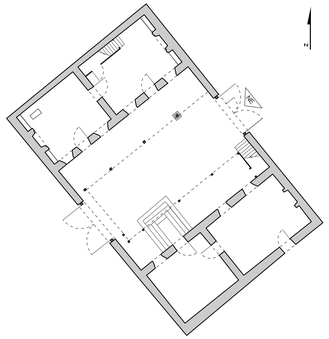
SHEET TITLE:
WINSOR CASTLE : NORTHEAST ELEVATION
CONDITION SURVEY

SITE RECORDING:
OCTOBER, 2010

SHEET NO.:
B-1.1.1



Location Plan



Construction Detail | Mortar Type

Quarrying Marks, Graffiti, Fills, Over Spill, Staining, Biogrowth, Caliche, Stippling, Vertical Tooling, Zig-Zag Tooling

Mortar Type A, Mortar Type B, Mortar Type C, Mortar Type D, Mortar Type E, Mortar Type F, Mortar Type G, Mortar Type H, Mortar Type I

NORTHEAST ELEVATION

0 2.5 5 7.5 10 Feet

PIPE SPRING NATIONAL MONUMENT
NATIONAL PARK SERVICE, FREDONIA, ARIZONA

PROJECT SUPERVISORS:
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MEREDITH KELLER

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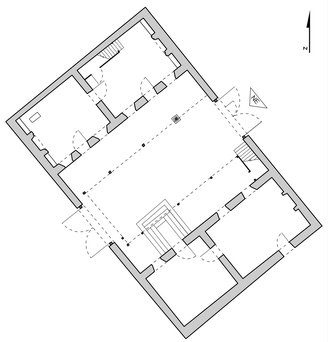
ARCHITECTURAL CONSERVATION LABORATORY AND RESEARCH CENTER
SCHOOL OF DESIGN
GRADUATE PROGRAM IN HISTORIC PRESERVATION
UNIVERSITY OF PENNSYLVANIA

SHEET TITLE:
WINSOR CASTLE : NORTHEAST ELEVATION
CONDITION SURVEY

SITE RECORDING:
OCTOBER, 2010

SHEET NO.:
B-1.1.2

Location Plan



Condition

Loss | Partial Loss | Alveolar | Delamination | Differential Errosion | Moisture | Efflorescence | Displacement | Crystallization | Cracks

NORTHEAST ELEVATION

0 2.5 5 7.5 10 Feet

PIPE SPRING NATIONAL MONUMENT

NATIONAL PARK SERVICE, FREDONIA, ARIZONA

PROJECT DIRECTOR:
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SPONSORED BY:
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ARCHITECTURAL CONSERVATION LABORATORY AND RESEARCH CENTER

GRADUATE PROGRAM IN HISTORIC PRESERVATION
SCHOOL OF DESIGN
UNIVERSITY OF PENNSYLVANIA

SHEET TITLE:
WINSOR CASTLE : NORTHEAST ELEVATION
CONDITION SURVEY

SITE RECORDING:
OCTOBER, 2010

SHEET NO.:
B-1.1.3

NORTHWEST ELEVATION

Location Plan

PIPE SPRING NATIONAL MONUMENT

NATIONAL PARK SERVICE, FREDONIA, ARIZONA

SPONSORED BY:
NATIONAL PARK SERVICE
SUPERINTENDENT OF PIPE SPRING:
JOHN HISCOCK

LAUREN V. DRAPALA
YARITZA HERNANDEZ
DIGITIZED FROM HABS DRAWINGS, 1940

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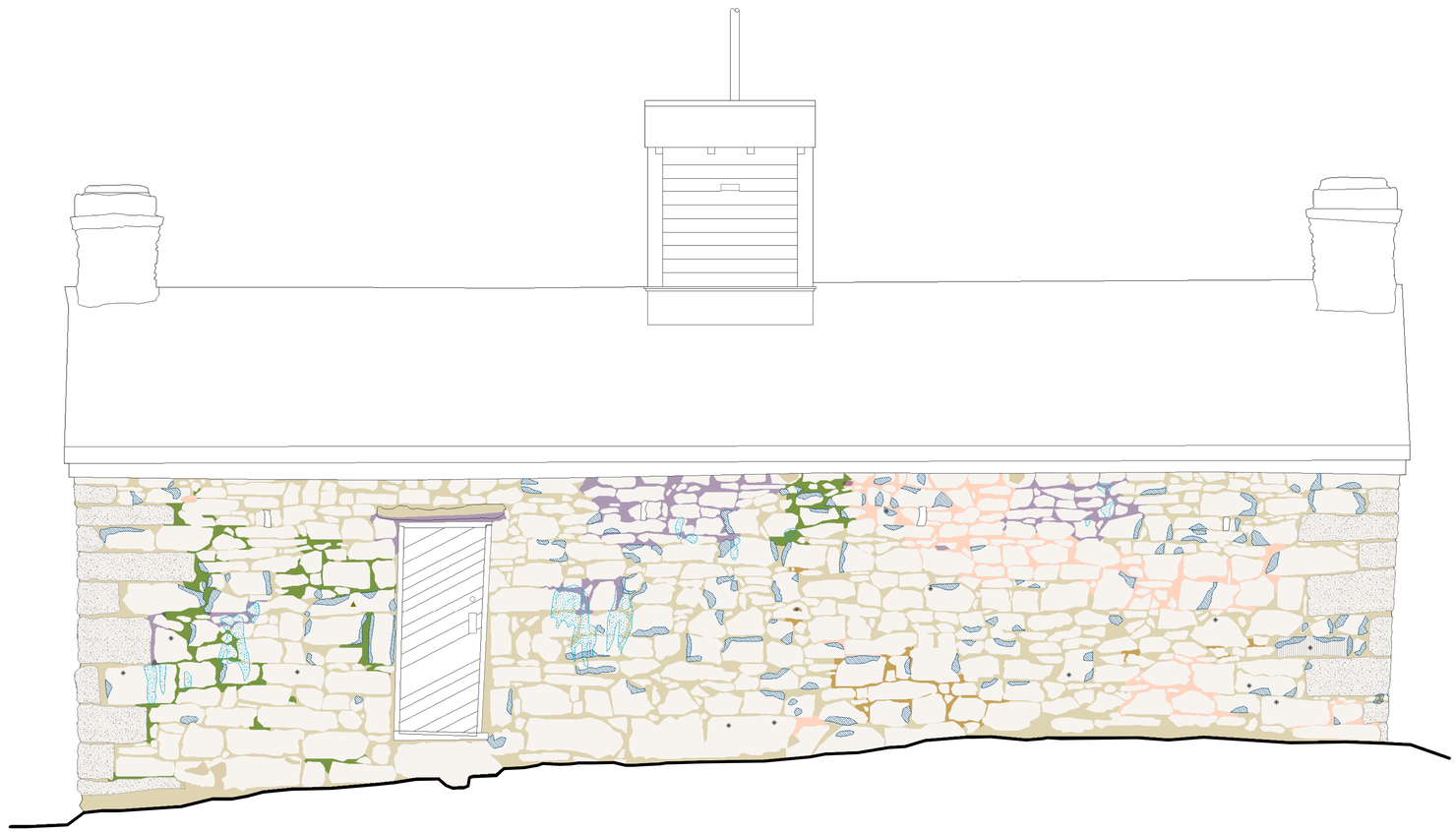
ARCHITECTURAL CONSERVATION LABORATORY AND RESEARCH CENTER

GRADUATE PROGRAM IN HISTORIC PRESERVATION
SCHOOL OF DESIGN
UNIVERSITY OF PENNSYLVANIA

SHEET TITLE:
WINSOR CASTLE : ENORTHWEST ELEVATION
CONDITION SURVEY

SITE RECORDING:
OCTOBER, 2010

SHEET NO.:
B-1.2.1



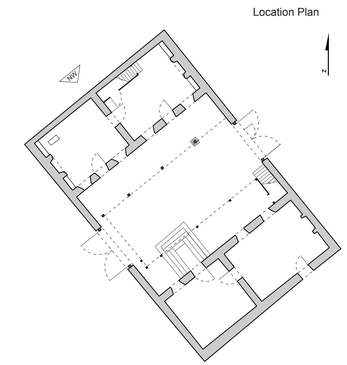
Construction Detail | Mortar Type

- Quarrying Marks
- Graffiti
- Fills
- Over Spill
- Staining
- Biogrowth
- Caliche
- Stippling
- Vertical Tooling
- Zig-Zag Tooling
- Mortar Type A
- Mortar Type B
- Mortar Type C
- Mortar Type D
- Mortar Type E
- Mortar Type F
- Mortar Type G
- Mortar Type H
- Mortar Type I

NORTHWEST ELEVATION

0 2.5 5 7.5 10 Feet

Location Plan



PIPE SPRING NATIONAL MONUMENT
NATIONAL PARK SERVICE, FREDONIA, ARIZONA

PROJECT DIRECTOR:
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SPONSORED BY:
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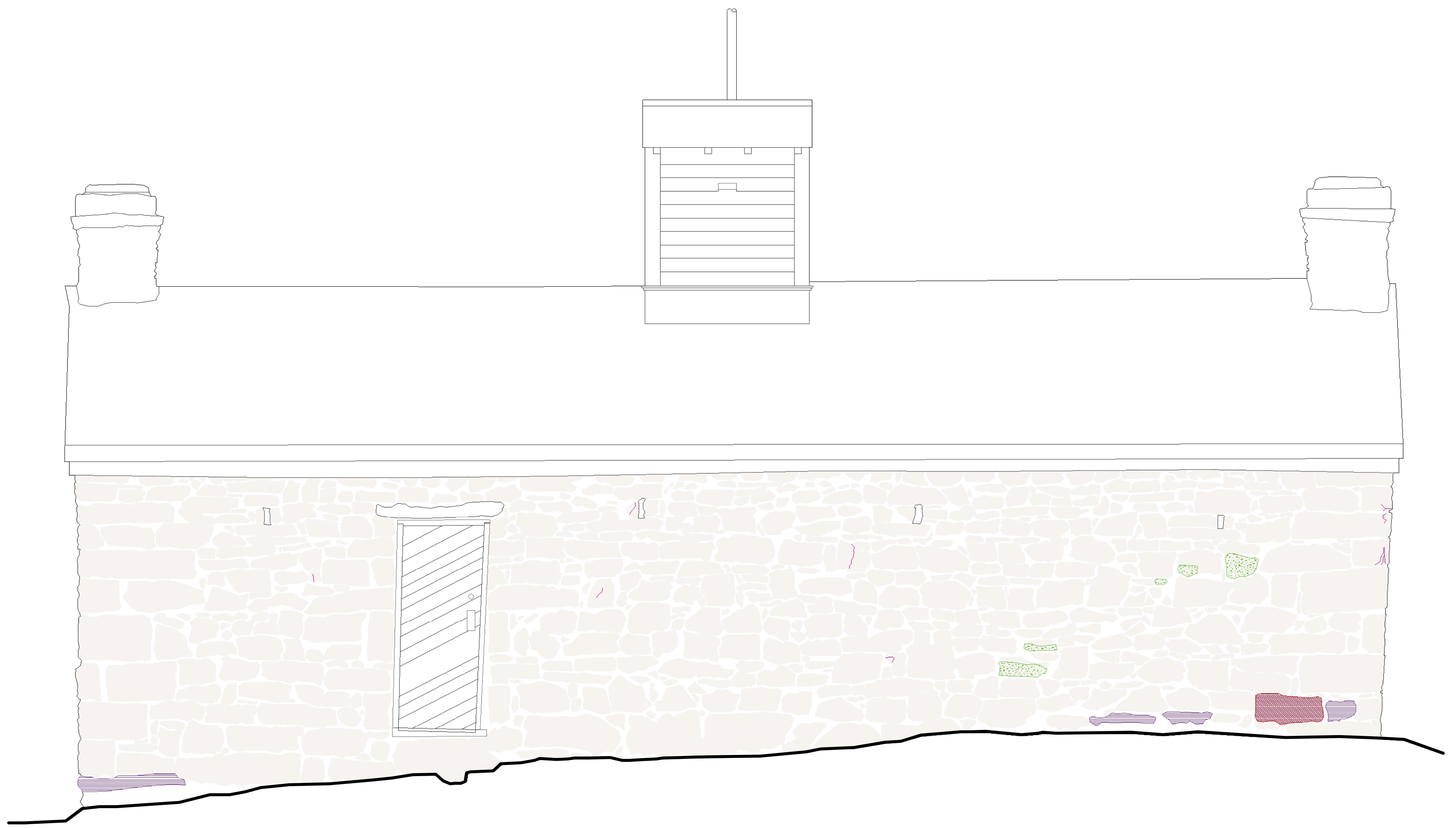
GRADUATE PROGRAM IN HISTORIC PRESERVATION
UNIVERSITY OF PENNSYLVANIA

SHEET TITLE:
WINSOR CASTLE : NORTHWEST ELEVATIONS
CONDITION SURVEY

SITE RECORDING:
OCTOBER, 2010

SHEET NO.:
B-1.2.2



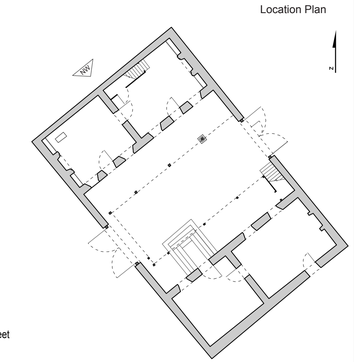
Condition

Loss | Partial Loss | Alveolar | Delamination | Differential Errosion | Moisture | Efflorescence | Displacement | Crystallization | Cracks

NORTHWEST ELEVATION

0 2.5 5 7.5 10 Feet

Location Plan



PIPE SPRING NATIONAL MONUMENT
NATIONAL PARK SERVICE, FREDONIA, ARIZONA

PROJECT DIRECTOR:
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GRADUATE PROGRAM IN HISTORIC PRESERVATION
UNIVERSITY OF PENNSYLVANIA

SHEET TITLE:
WINSOR CASTLE : NORTHWEST ELEVATION
CONDITION SURVEY

SITE RECORDING:
OCTOBER, 2010

SHEET NO.:
B-1.2.3

Location Plan

SOUTHWEST ELEVATION

0 2.5 5 7.5 10 Feet

PIPE SPRING NATIONAL MONUMENT
NATIONAL PARK SERVICE, FREDONIA, ARIZONA

PROJECT DIRECTOR:
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ARCHITECTURAL CONSERVATION LABORATORY AND RESEARCH CENTER
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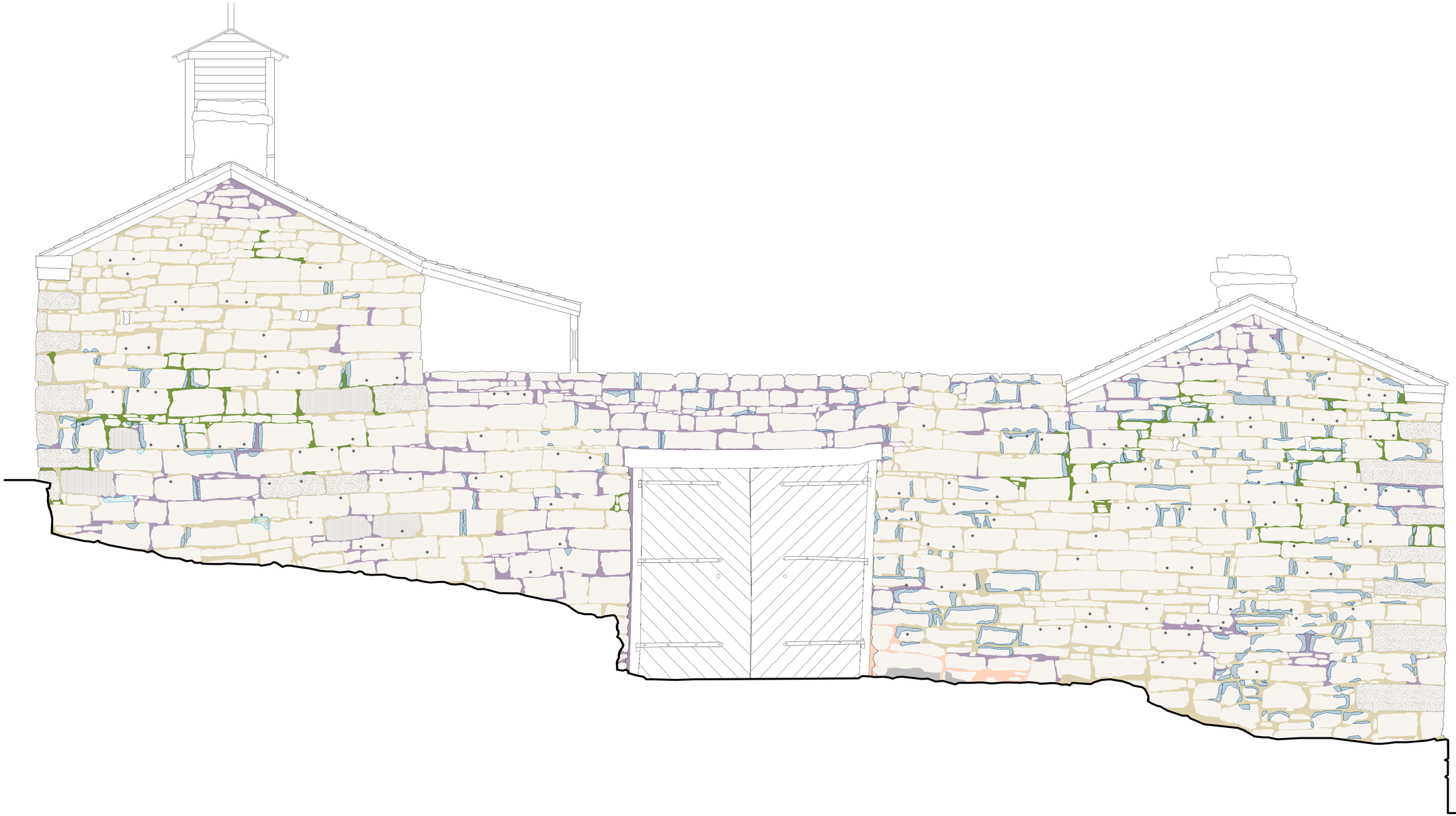
SCHOOL OF DESIGN
GRADUATE PROGRAM IN HISTORIC PRESERVATION

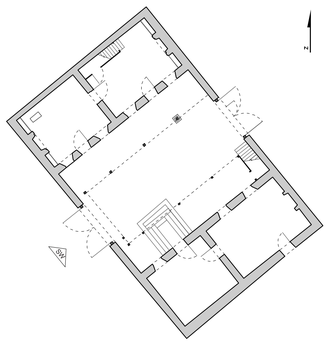
SHEET TITLE:
WINSOR CASTLE : SOUTHWEST ELEVATION
CONDITION SURVEY

SITE RECORDING:
OCTOBER, 2010

SHEET NO.:
B-1.3.1



Location Plan



Construction Detail | Mortar Type

Quarrying Marks, Graffiti, Fills, Over Spill, Staining, Biogrowth, Caliche, Stippling, Vertical Tooling, Zig-Zag Tooling

Mortar Type A, Mortar Type B, Mortar Type C, Mortar Type D, Mortar Type E, Mortar Type F, Mortar Type G, Mortar Type H, Mortar Type I

SOUTHWEST ELEVATION

0 2.5 5 7.5 10 Feet

PIPE SPRING NATIONAL MONUMENT

NATIONAL PARK SERVICE, FREDONIA, ARIZONA

PROJECT DIRECTOR:
FRANK G. MATERO,
UNIVERSITY OF PENNSYLVANIA

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YARITZA HERNANDEZ
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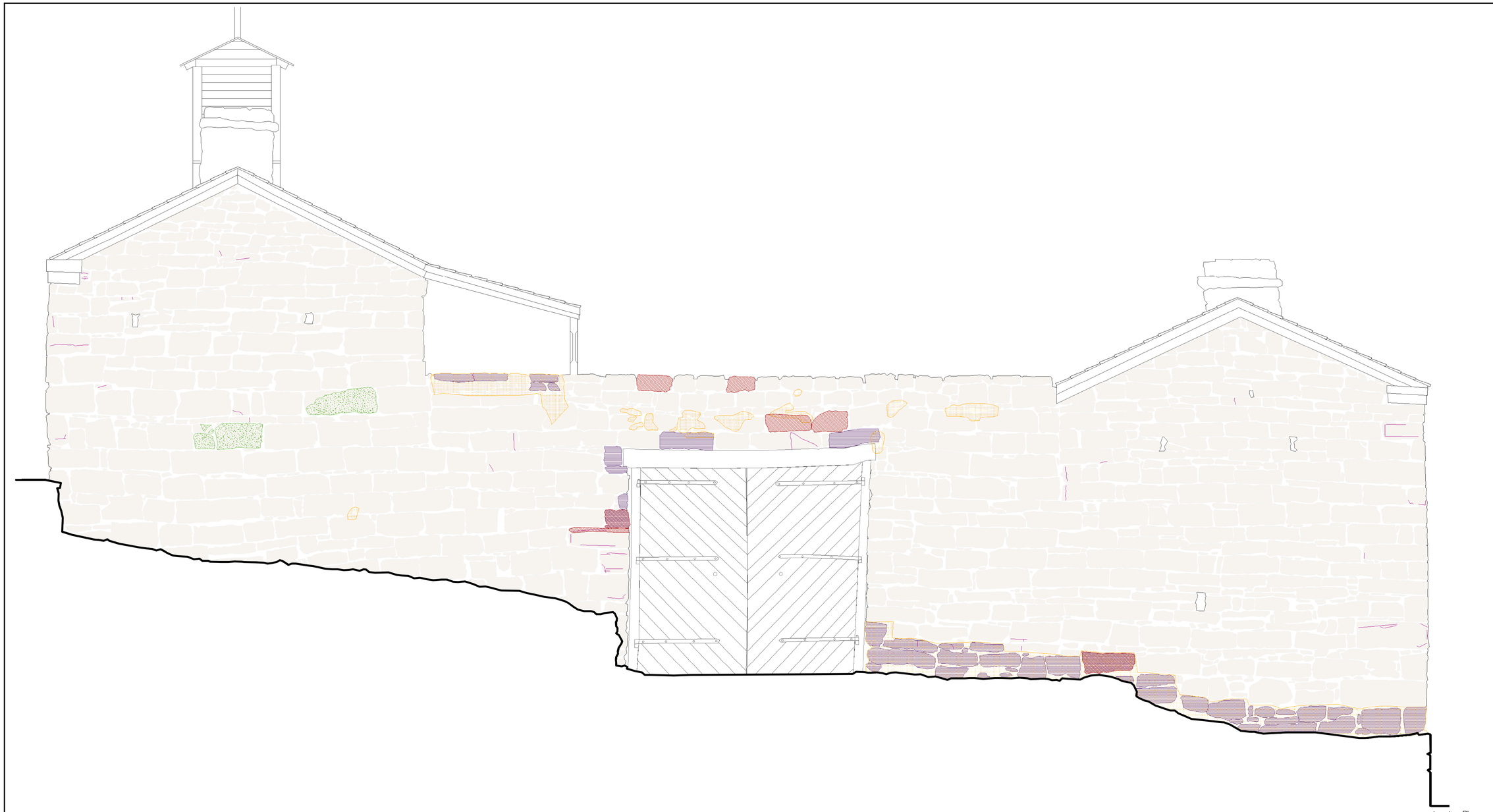
SPONSORED BY:
NATIONAL PARK SERVICE
SUPERINTENDENT OF PIPE SPRING:
JOHN HISCOCK

ARCHITECTURAL CONSERVATION LABORATORY AND RESEARCH CENTER
SCHOOL OF DESIGN
GRADUATE PROGRAM IN HISTORIC PRESERVATION
UNIVERSITY OF PENNSYLVANIA

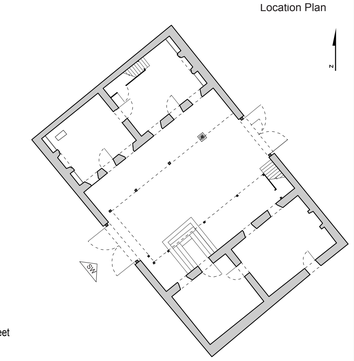
SHEET TITLE:
WINSOR CASTLE : SOUTHWEST ELEVATION
CONDITION SURVEY

SITE RECORDING:
OCTOBER, 2010

SHEET NO.:
B-1.3.2



Location Plan



Condition

Loss | Partial Loss | Alveolar | Delamination | Differential Errosion | Moisture | Efflorescence | Displacement | Crystallization | Cracks

SOUTHWEST ELEVATION

0 2.5 5 7.5 10 Feet

PIPE SPRING NATIONAL MONUMENT

NATIONAL PARK SERVICE, FREDONIA, ARIZONA

PROJECT DIRECTOR:
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UNIVERSITY OF PENNSYLVANIA

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SPONSORED BY:
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ARCHITECTURAL CONSERVATION LABORATORY AND RESEARCH CENTER

UNIVERSITY OF PENNSYLVANIA
SCHOOL OF DESIGN
GRADUATE PROGRAM IN HISTORIC PRESERVATION

SHEET TITLE:
WINSOR CASTLE : SOUTHWEST ELEVATIONS
CONDITION SURVEY

SITE RECORDING:
OCTOBER, 2010

SHEET NO.:
B-1.3.3

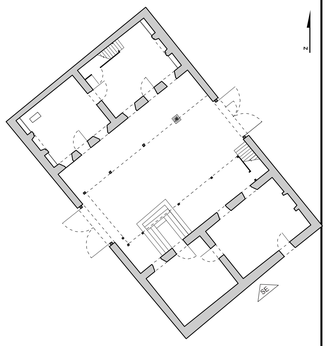
Original - 1923 Fabric

1959 Restoration

SOUTHEAST ELEVATION

0 2.5 5 7.5 10 Feet

Location Plan



PIPE SPRING NATIONAL MONUMENT

NATIONAL PARK SERVICE, FREDONIA, ARIZONA

SPONSORED BY:
NATIONAL PARK SERVICE
SUPERINTENDENT OF PIPE SPRING:
JOHN HISCOCK

LAUREN V. DRAPALA
YARITZA HERNANDEZ
DIGITIZED FROM HABS DRAWINGS, 1940

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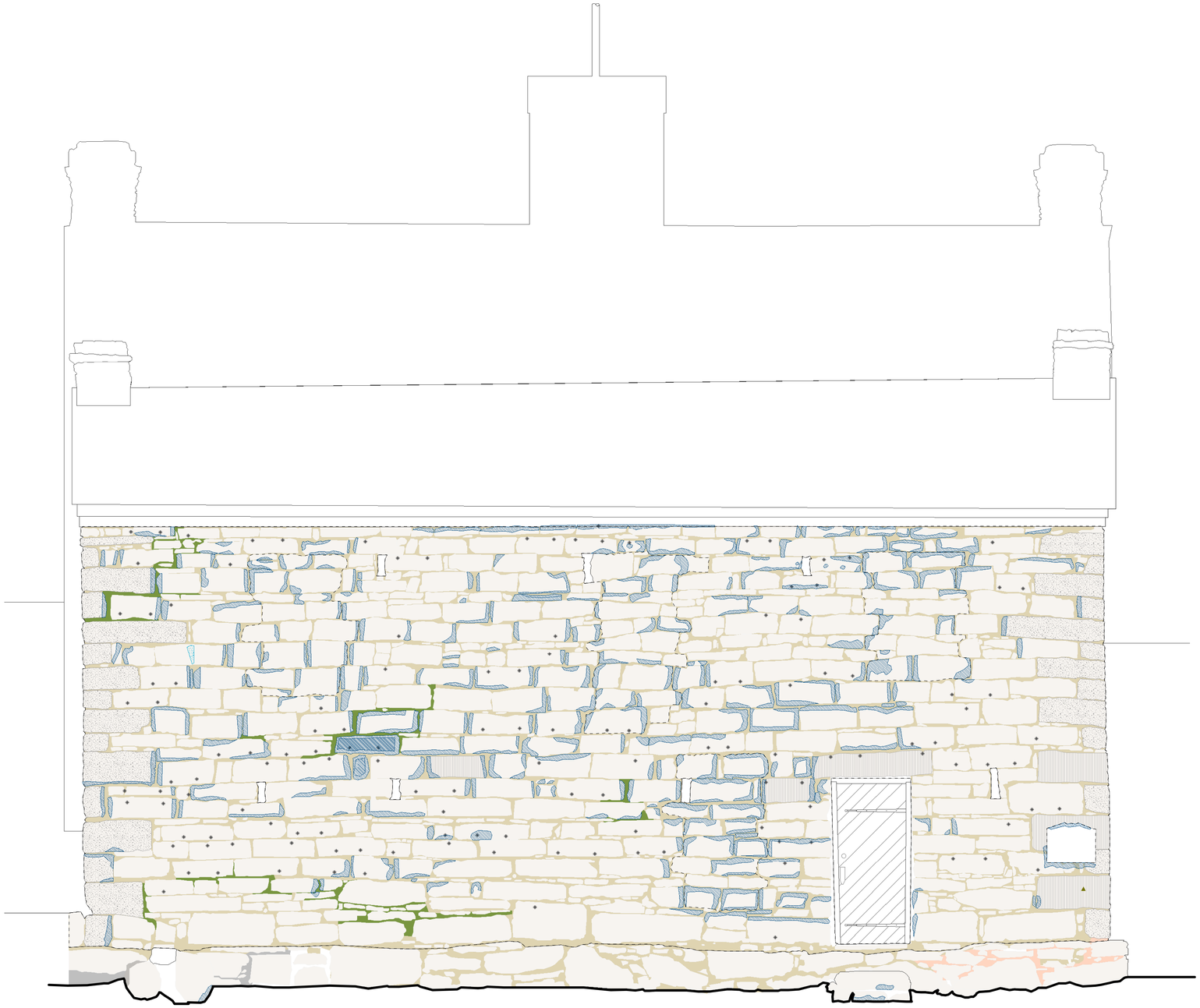
ARCHITECTURAL CONSERVATION LABORATORY AND RESEARCH CENTER
SCHOOL OF DESIGN
GRADUATE PROGRAM IN HISTORIC PRESERVATION
UNIVERSITY OF PENNSYLVANIA

SHEET TITLE:
WINSOR CASTLE : SOUTHEAST ELEVATION
CONDITION SURVEY

SITE RECORDING:
OCTOBER, 2010

SHEET NO.:
B-1.4.1



Construction Detail | Mortar Type

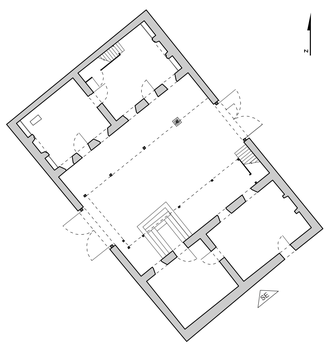
Quarrying Marks | Graffiti | Fills | Over Spill | Staining | Biogrowth | Caliche | Stippling | Vertical Tooling | Zig-Zag Tooling

Mortar Type A | Mortar Type B | Mortar Type C | Mortar Type D | Mortar Type E | Mortar Type F | Mortar Type G | Mortar Type H | Mortar Type I

SOUTHEAST ELEVATION

0 2.5 5 7.5 10 Feet

Location Plan



PIPE SPRING NATIONAL MONUMENT
NATIONAL PARK SERVICE, FREDONIA, ARIZONA

PROJECT DIRECTOR:
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LAUREN V. DRAPALA
YARITZA HERNANDEZ
DIGITIZED FROM HABS DRAWINGS, 1940

SPONSORED BY:
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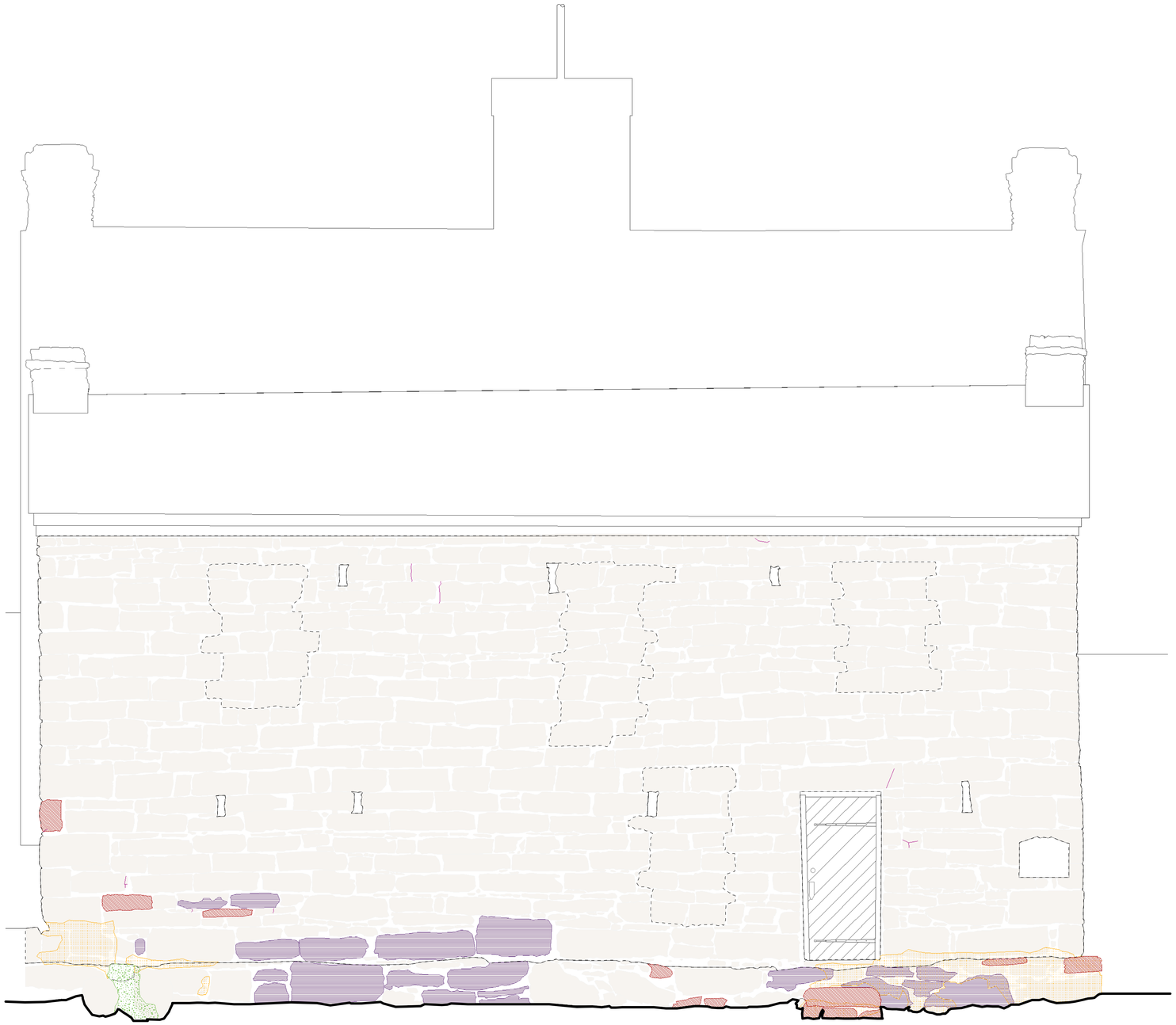
ARCHITECTURAL CONSERVATION LABORATORY AND RESEARCH CENTER
SCHOOL OF DESIGN
GRADUATE PROGRAM IN HISTORIC PRESERVATION
UNIVERSITY OF PENNSYLVANIA

SHEET TITLE:
WINSOR CASTLE : SOUTHEAST ELEVATION
ARCHITECTURAL DRAWINGS

SITE RECORDING:
OCTOBER, 2010

SHEET NO.:
B-1.4.2



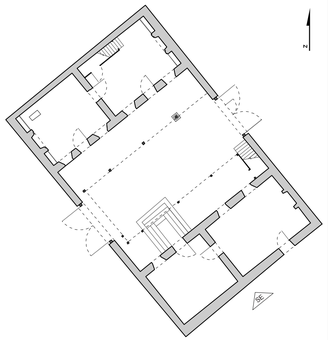
Condition

Loss | Partial Loss | Alveolar | Delamination | Differential Errosion | Moisture | Efflorescence | Displacement | Crystallization | Cracks

SOUTHEAST ELEVATION

0 2.5 5 7.5 10 Feet

Location Plan



PIPE SPRING NATIONAL MONUMENT
NATIONAL PARK SERVICE, FREDONIA, ARIZONA

PROJECT DIRECTOR:
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PROJECT SUPERVISORS:
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SPONSORED BY:
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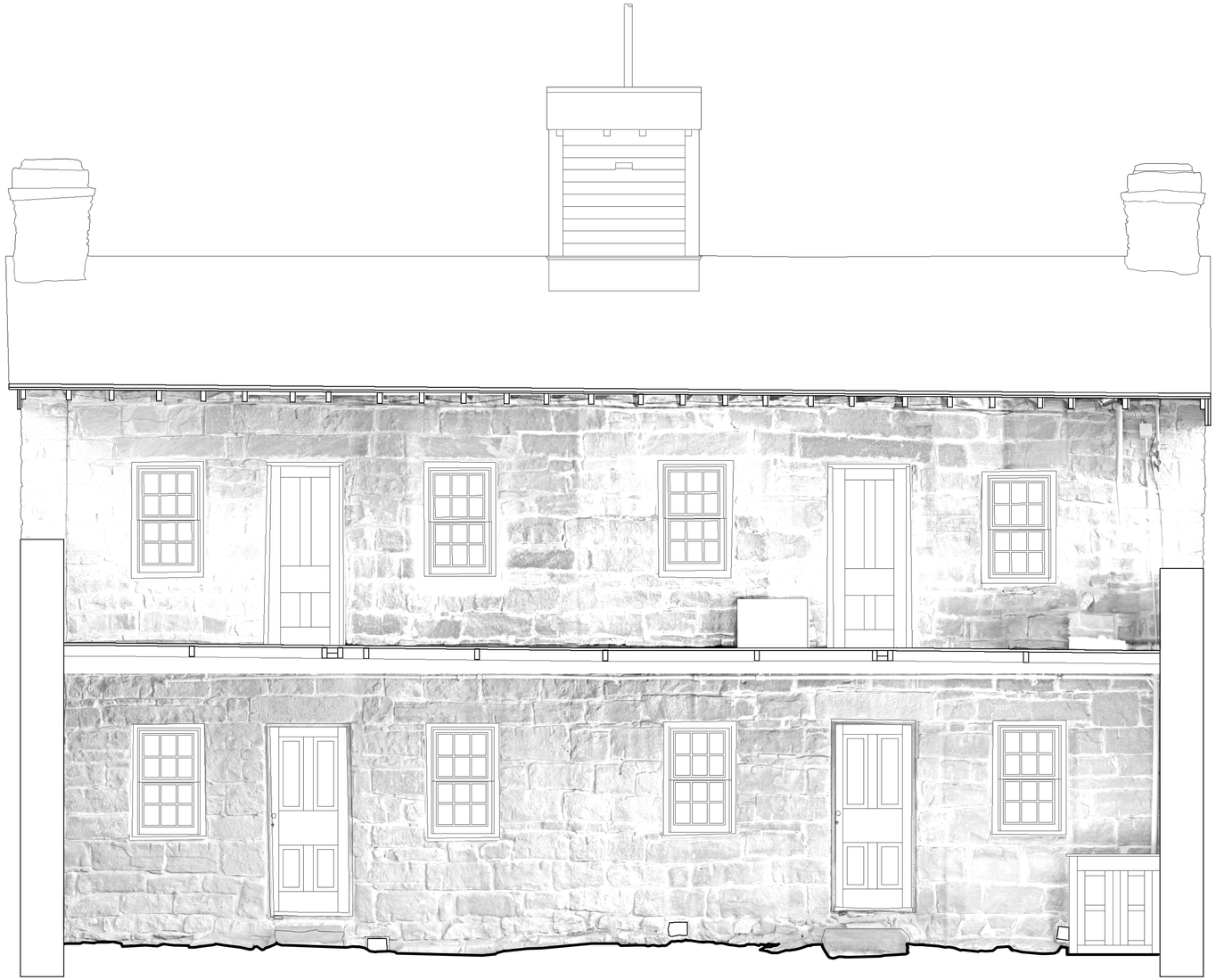
ARCHITECTURAL CONSERVATION LABORATORY AND RESEARCH CENTER
GRADUATE PROGRAM IN HISTORIC PRESERVATION
SCHOOL OF DESIGN
UNIVERSITY OF PENNSYLVANIA

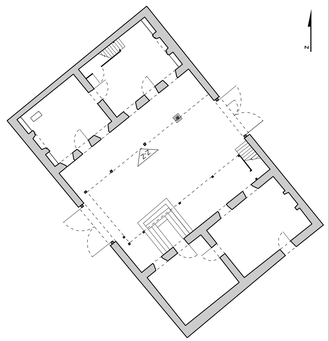
SHEET TITLE:
WINSOR CASTLE : SOUTHEAST ELEVATION
CONDITION SURVEY

SITE RECORDING:
OCTOBER, 2010

SHEET NO.:
B-1.4.3



Location Plan



SOUTHEAST ELEVATION OF UPPER BUILDING - SECTION Z-Z

0 2.5 5 7.5 10 Feet

PIPE SPRING NATIONAL MONUMENT
NATIONAL PARK SERVICE, FREDONIA, ARIZONA

SPONSORED BY:
NATIONAL PARK SERVICE
SUPERINTENDENT OF PIPE SPRING:
JOHN HISCOCK

LAUREN V. DRAPALA
YARITZA HERNANDEZ
DIGITIZED FROM HABS DRAWINGS, 1940

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GRADUATE PROGRAM IN HISTORIC PRESERVATION
UNIVERSITY OF PENNSYLVANIA

SHEET TITLE:
WINSOR CASTLE : SOUTHEAST ELEVATION
CONDITION SURVEY

SITE RECORDING:
OCTOBER, 2010

SHEET NO.:
B-1.5.1

Construction Detail | Mortar Type

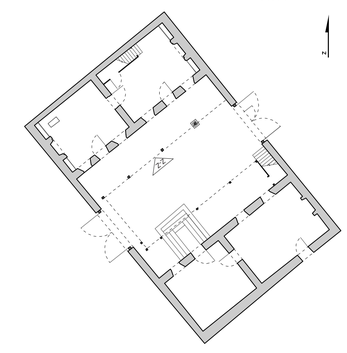
Quarrying Marks | Graffiti | Fills | Over Spill | Staining | Biogrowth | Caliche | Stippling | Vertical Tooling | Zig-Zag Tooling

Mortar Type A | Mortar Type B | Mortar Type C | Mortar Type D | Mortar Type E | Mortar Type F | Mortar Type G | Mortar Type H | Mortar Type I

SOUTHEAST ELEVATION OF UPPER BUILDING - SECTION Z-Z

0 2.5 5 7.5 10 Feet

Location Plan



PIPE SPRING NATIONAL MONUMENT

NATIONAL PARK SERVICE, FREDONIA, ARIZONA

SPONSORED BY:
NATIONAL PARK SERVICE
SUPERINTENDENT OF PIPE SPRING:
JOHN HISCOCK

PROJECT DIRECTOR:
FRANK G. MATERO,
UNIVERSITY OF PENNSYLVANIA

PROJECT SUPERVISORS:
JOHN HINCHMAN
MEREDITH KELLER

LAUREN V. DRAPALA
YARITZA HERNANDEZ
DIGITIZED FROM HABS DRAWINGS, 1940

ARCHITECTURAL CONSERVATION LABORATORY AND RESEARCH CENTER

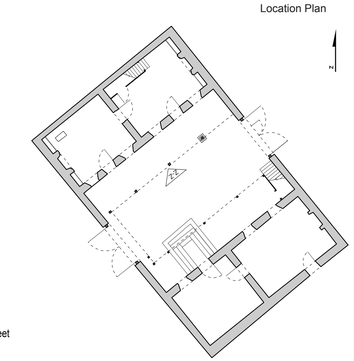
GRADUATE PROGRAM IN HISTORIC PRESERVATION
SCHOOL OF DESIGN
UNIVERSITY OF PENNSYLVANIA

SHEET TITLE:
WINSOR CASTLE : SOUTHEAST ELEVATION
CONDITION SURVEY

SITE RECORDING:
OCTOBER, 2010

SHEET NO.:
B-1.5.2

Location Plan



Condition

Loss | Partial Loss | Alveolar | Delamination | Differential Errosion | Moisture | Efflorescence | Displacement | Crystallization | Cracks

SOUTHEAST ELEVATION OF UPPER BUILDING - SECTION Z-Z

0 2.5 5 7.5 10 Feet

PIPE SPRING NATIONAL MONUMENT
NATIONAL PARK SERVICE, FREDONIA, ARIZONA

PROJECT DIRECTOR:
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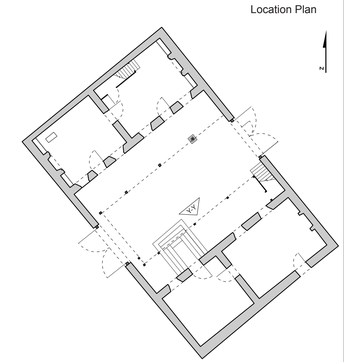
SCHOOL OF DESIGN
UNIVERSITY OF PENNSYLVANIA

SHEET TITLE:
WINSOR CASTLE : SOUTHEAST ELEVATION
CONDITION SURVEY

SITE RECORDING:
OCTOBER, 2010

SHEET NO.:
B-1.5.3

Location Plan



NORTHWEST ELEVATION OF LOWER BUILDING - SECTION Y-Y

0 2.5 5 7.5 10 Feet

PIPE SPRING NATIONAL MONUMENT
NATIONAL PARK SERVICE, FREDONIA, ARIZONA

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JOHN HISCOCK

ARCHITECTURAL CONSERVATION LABORATORY AND RESEARCH CENTER
SCHOOL OF DESIGN
UNIVERSITY OF PENNSYLVANIA
GRADUATE PROGRAM IN HISTORIC PRESERVATION

SHEET TITLE:
WINSOR CASTLE : NORTHWEST ELEVATION
CONDITION SURVEY

SITE RECORDING:
OCTOBER, 2010

SHEET NO.:
B-1.6.1

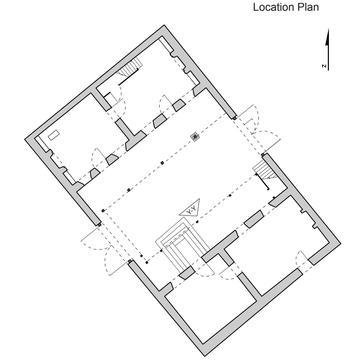
Construction Detail | Mortar Type

- Quarrying Marks
- Graffiti
- Fills
- Over Spill
- Staining
- Biogrowth
- Caliche
- Stippling
- Vertical Tooling
- Zig-Zag Tooling
- Mortar Type A
- Mortar Type B
- Mortar Type C
- Mortar Type D
- Mortar Type E
- Mortar Type F
- Mortar Type G
- Mortar Type H
- Mortar Type I

NORTHWEST ELEVATION OF LOWER BUILDING - SECTION Y-Y

0 2.5 5 7.5 10 Feet

Location Plan



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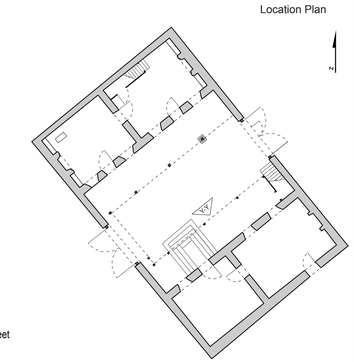
GRADUATE PROGRAM IN HISTORIC PRESERVATION
UNIVERSITY OF PENNSYLVANIA

SHEET TITLE:
WINSOR CASTLE : NORTHWEST ELEVATION
CONDITION SURVEY

SITE RECORDING:
OCTOBER, 2010

SHEET NO.:
B-1.6.2

Location Plan



Condition

Loss | Partial Loss | Alveolar | Delamination | Differential Errosion | Moisture | Efflorescence | Displacement | Crystallization | Cracks

NORTHWEST ELEVATION OF LOWER BUILDING - SECTION Y-Y

0 2.5 5 7.5 10 Feet

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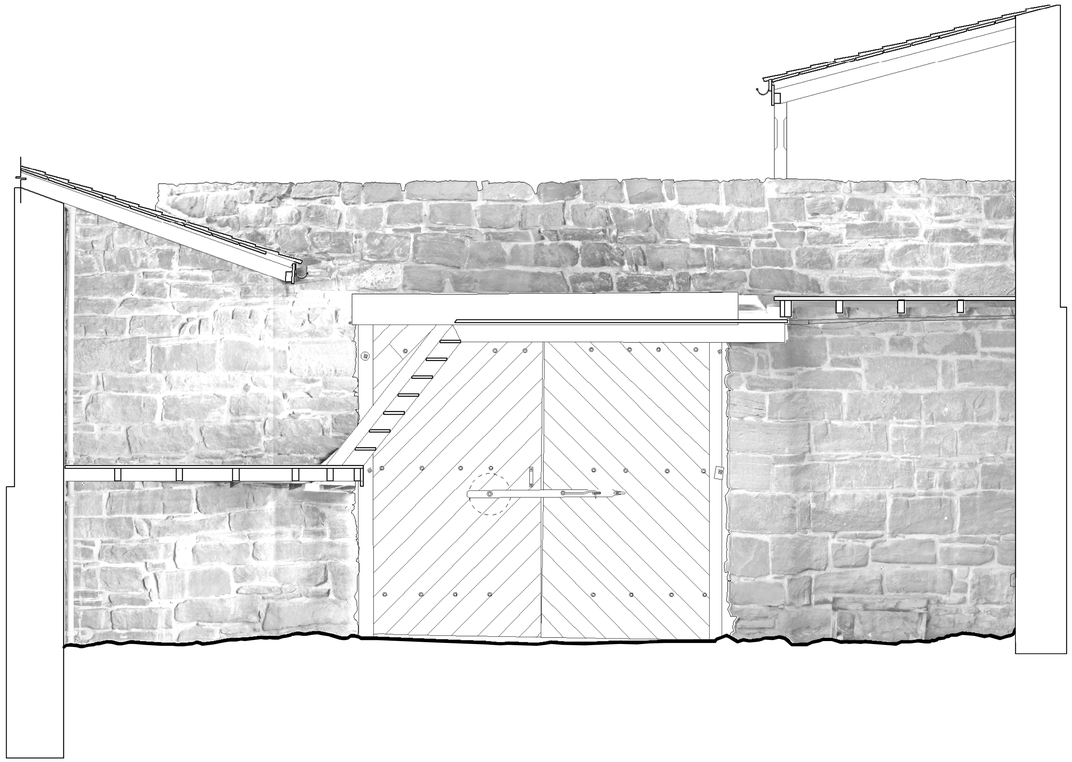
UNIVERSITY OF PENNSYLVANIA

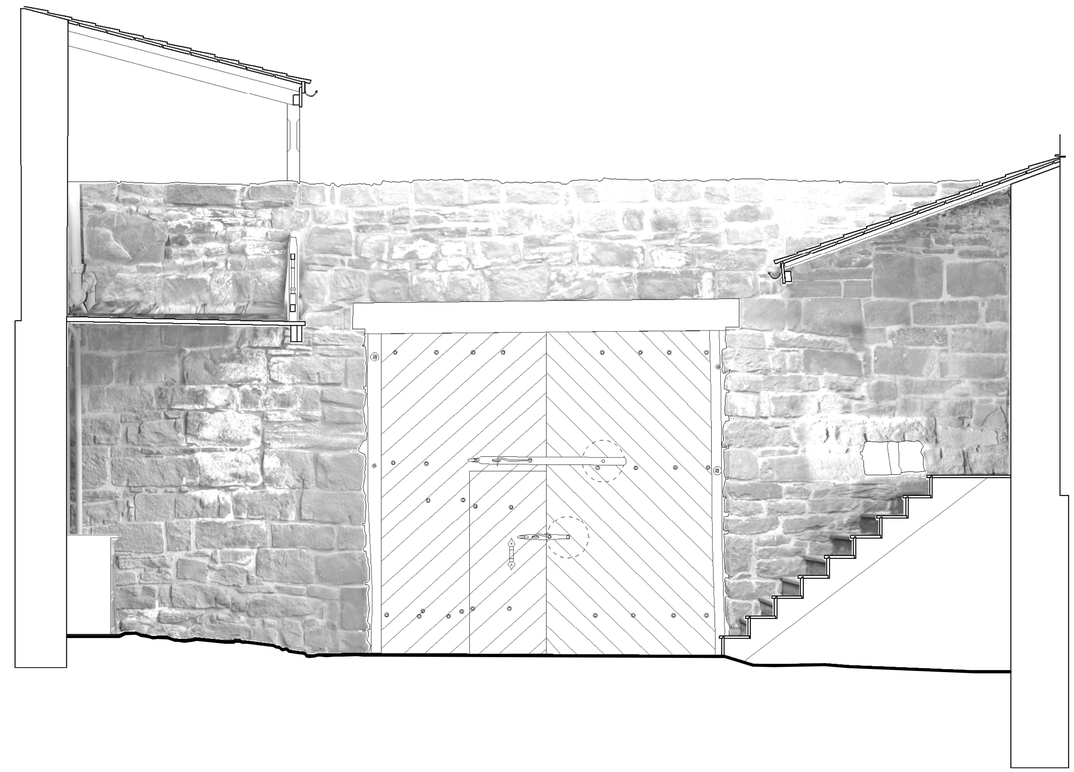
SHEET TITLE:
WINSOR CASTLE : NORTHWEST ELEVATION
CONDITION SURVEY

SITE RECORDING:
OCTOBER, 2010

SHEET NO.:
B-1.6.3



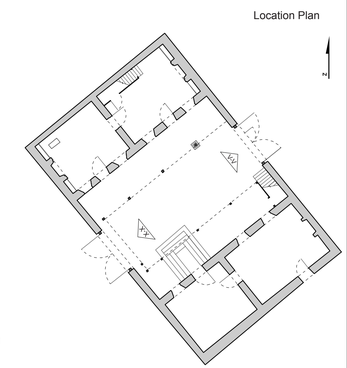
SECTION X-X



SECTION V-V

0 2.5 5 7.5 10 Feet

Location Plan



PIPE SPRING NATIONAL MONUMENT

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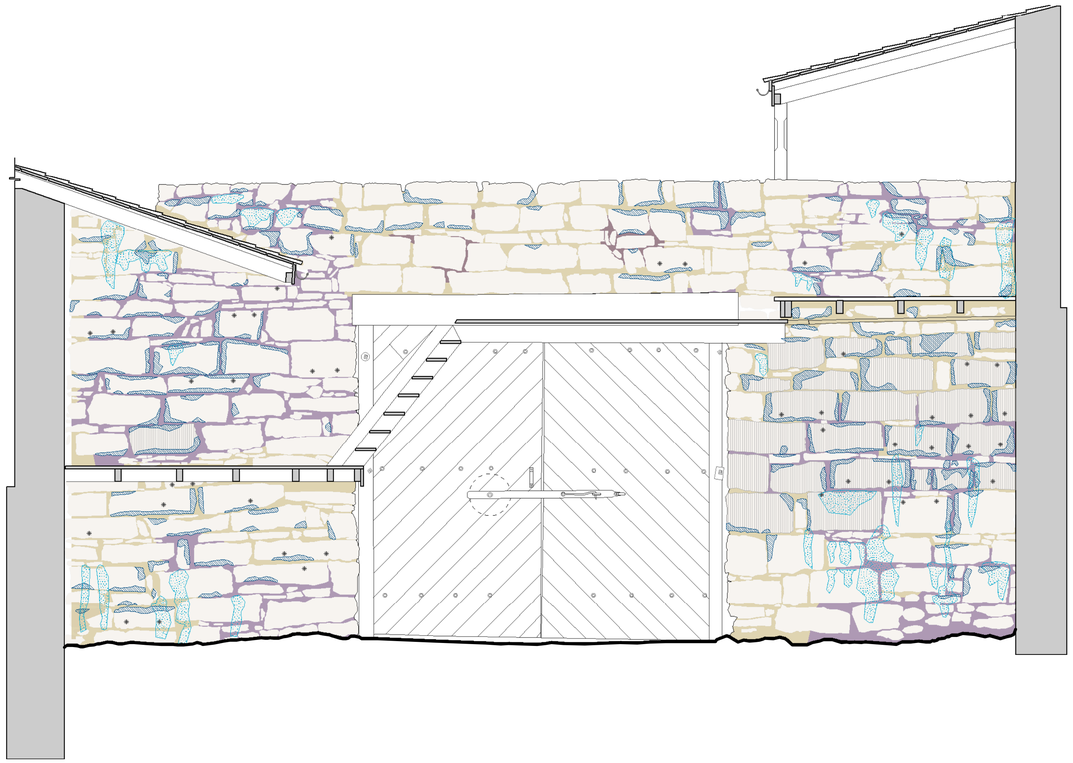
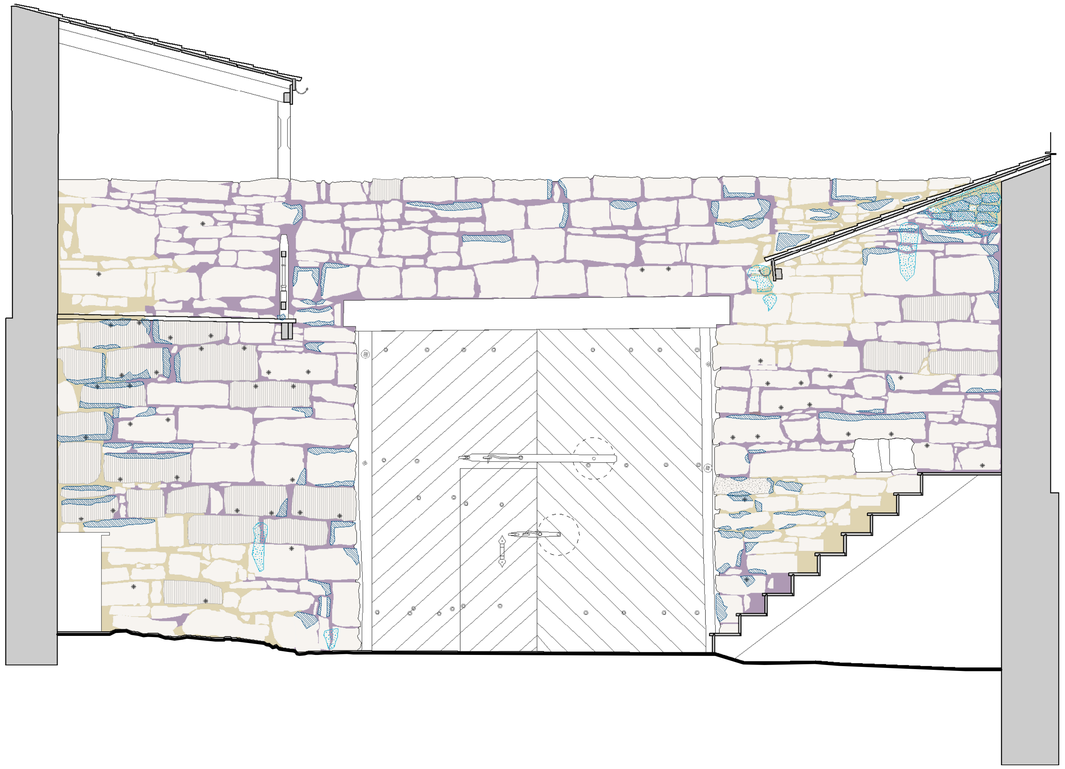
UNIVERSITY OF PENNSYLVANIA

SHEET TITLE:
WINSOR CASTLE : INTERIOR ELEVATIONS
CONDITION SURVEY

SITE RECORDING:
OCTOBER, 2010

SHEET NO.:
B-1.7.1





Construction Detail | Mortar Type

Quarrying Marks, Graffiti, Fills, Over Spill, Staining, Biogrowth, Caliche, Stippling, Vertical Tooling, Zig-Zag Tooling

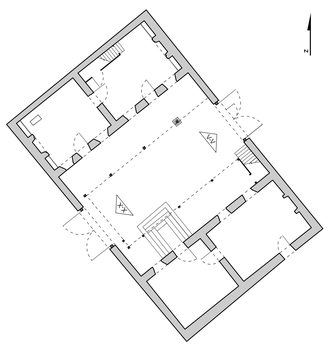
Mortar Type A, Mortar Type B, Mortar Type C, Mortar Type D, Mortar Type E, Mortar Type F, Mortar Type G, Mortar Type H, Mortar Type I

SECTION X-X

SECTION V-V

0 2.5 5 7.5 10 Feet

Location Plan



PIPE SPRING NATIONAL MONUMENT

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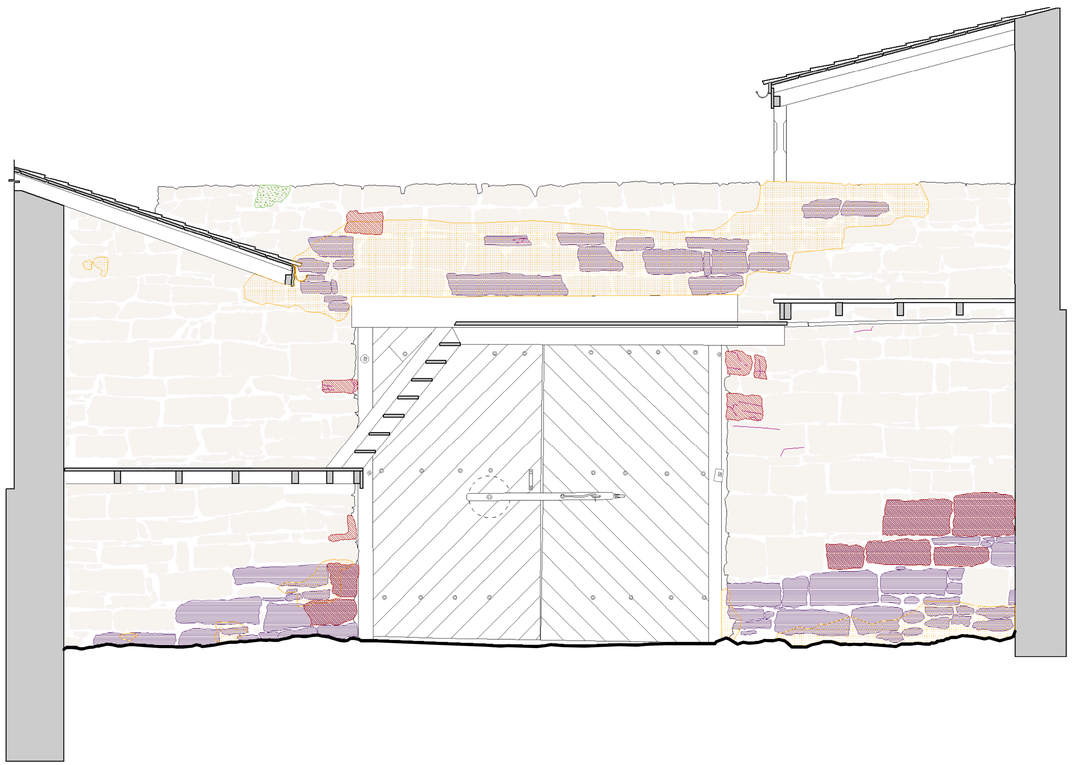
UNIVERSITY OF PENNSYLVANIA

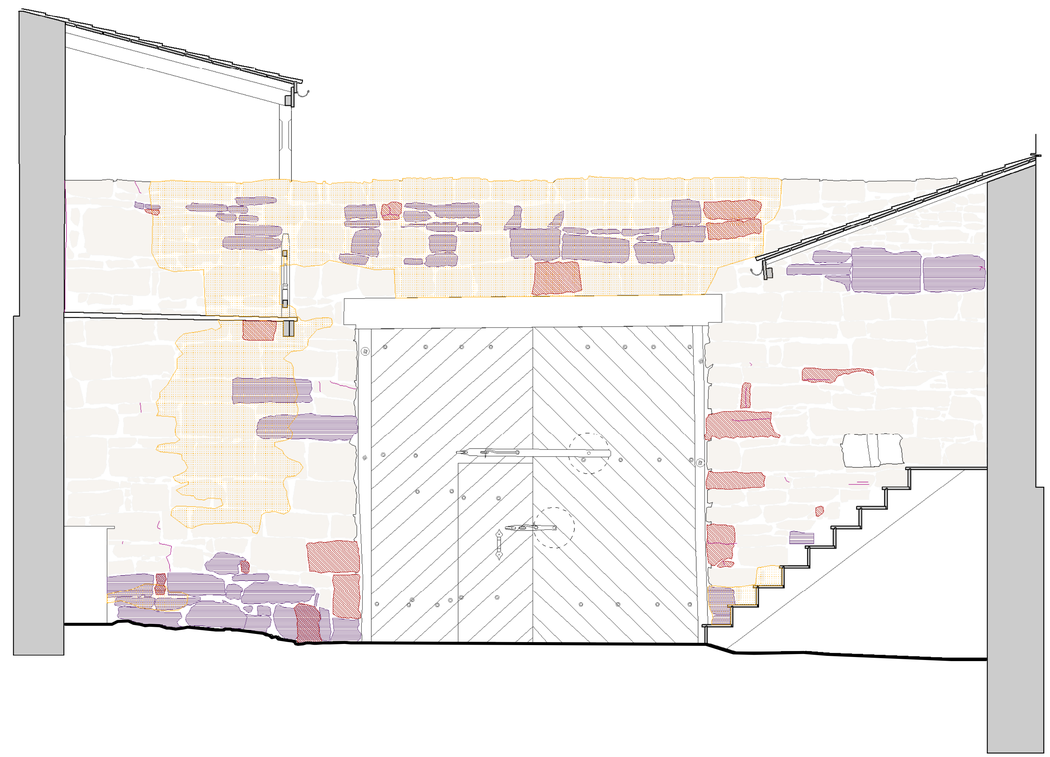
SHEET TITLE:
WINSOR CASTLE : INTERIOR ELEVATIONS
CONDITION SURVEY

SITE RECORDING:
OCTOBER, 2010

SHEET NO.:
B-1.7.2



SECTION X-X



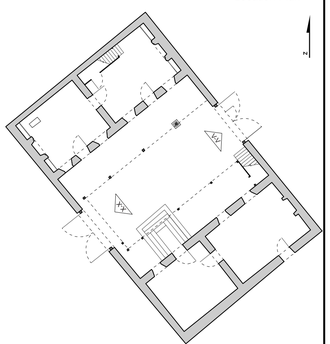
SECTION V-V

Condition

Loss | Partial Loss | Alveolar | Delamination | Differential Errosion | Moisture | Efflorescence | Displacement | Crystallization | Cracks

0 2.5 5 7.5 10 Feet

Location Plan



PIPE SPRING NATIONAL MONUMENT

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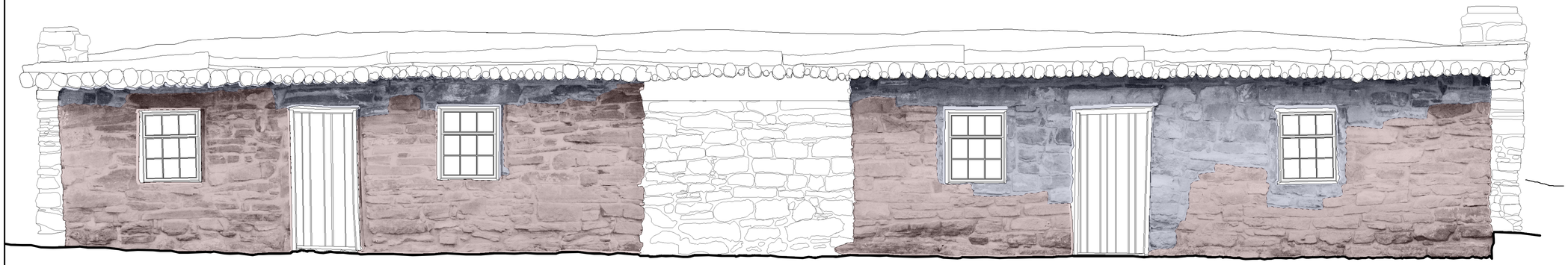
UNIVERSITY OF PENNSYLVANIA

SHEET TITLE:
WINSOR CASTLE : INTERIOR ELEVATIONS
CONDITION SURVEY

SITE RECORDING:
OCTOBER, 2010

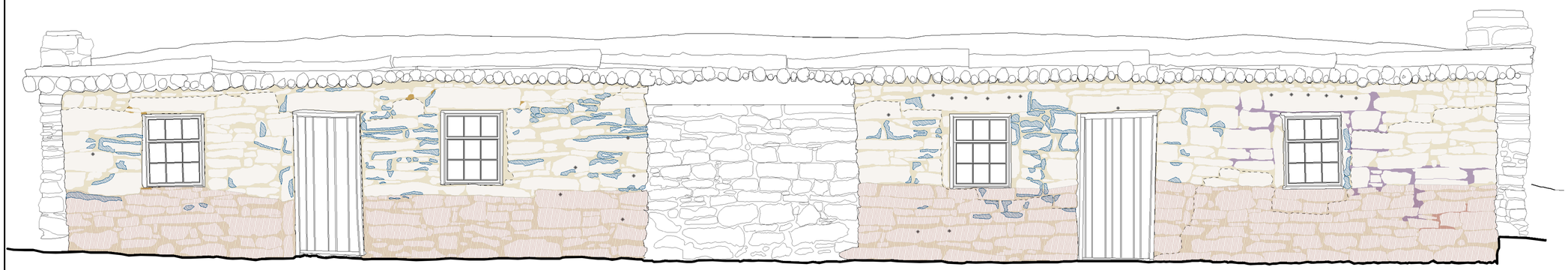
SHEET NO.:
B-1.7.3



There weren't any historical photos available to identify the 1923 original fabric or the 1925 restoration.

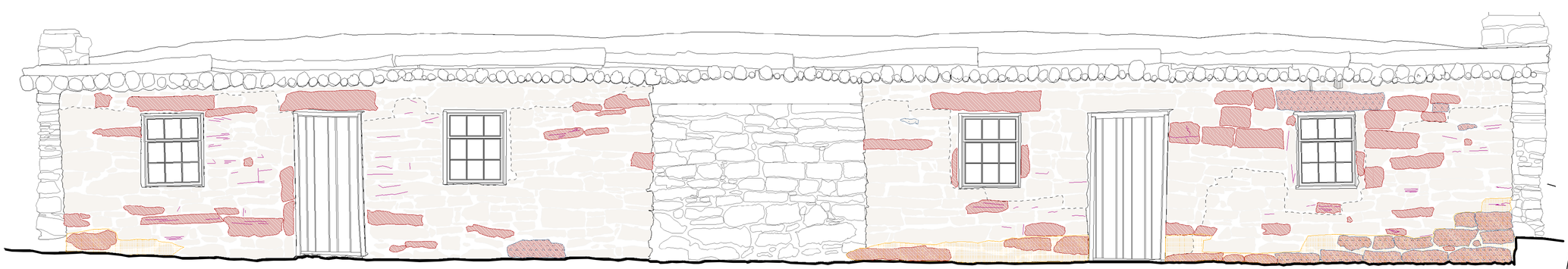
1923 Original Fabric

1925 Restoration

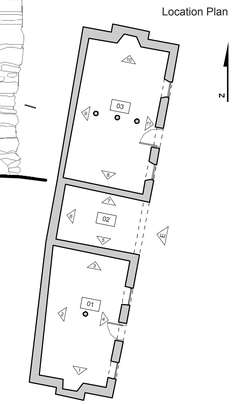


Construction | Condition | Mortar Type

Quarrying Marks
Sample
Soil Wash
Mortar Type A Wash
Red Wash
Red Wash 2
Staining
Over Spills
Mortar Type A
Mortar Type B
Mortar Type C
Mortar Type E
Mortar Type I
Mortar Type Y
Mortar Type Z



Location Plan



Condition

Delamination
Efflorescence
Moisture
Friable
Cracks

EAST EXTERIOR ELEVATION

0 2.5 5 7.5 10 Feet

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NATIONAL PARK SERVICE, FREDONIA, ARIZONA

PROJECT SUPERVISORS:
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MEREDITH KELLER

PROJECT DIRECTOR:
FRANK G. MATERO,
UNIVERSITY OF PENNSYLVANIA

DRAWN BY:
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ARCHITECTURAL CONSERVATION LABORATORY AND RESEARCH CENTER
SCHOOL OF DESIGN
UNIVERSITY OF PENNSYLVANIA

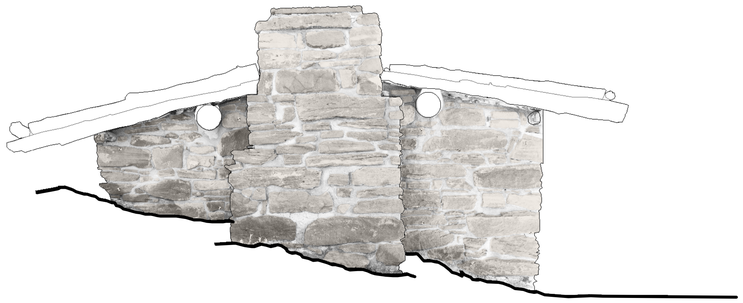
SPONSORED BY:
NATIONAL PARK SERVICE
SUPERINTENDENT OF PIPE SPRING:
JOHN HISCOCK

GRADUATE PROGRAM IN HISTORIC PRESERVATION

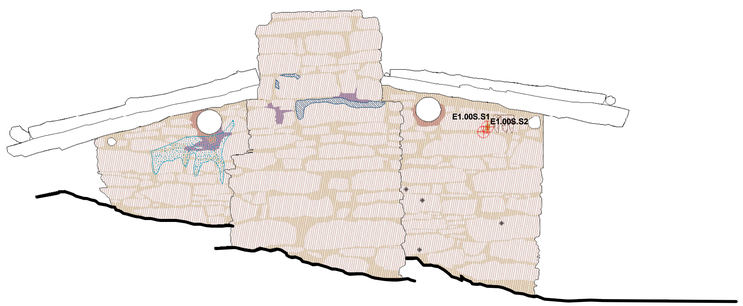
SHEET TITLE:
EAST CABIN: EAST ELEVATION
CONDITION SURVEY

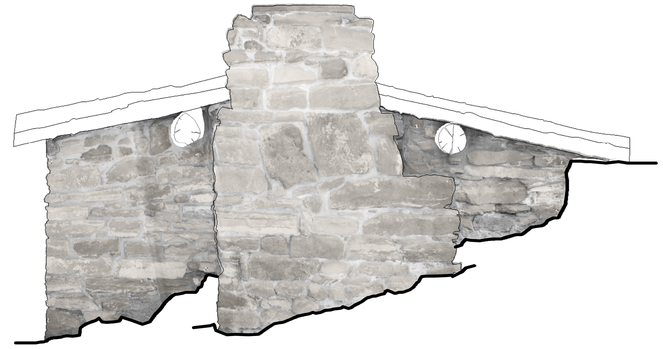
SITE RECORDING:
JUNE, 2010

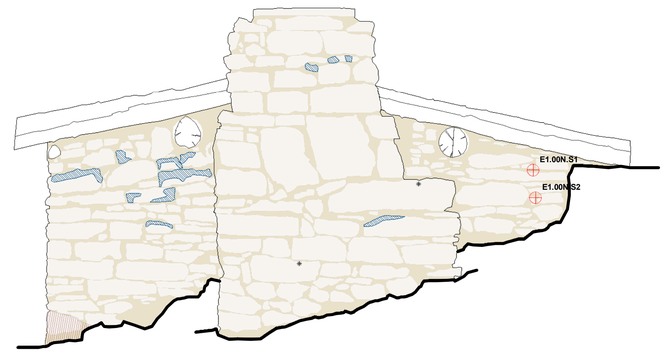
SHEET NO.:
B-2.1



There weren't any historical photos available to identify the 1923 original fabric or the 1925 restoration.

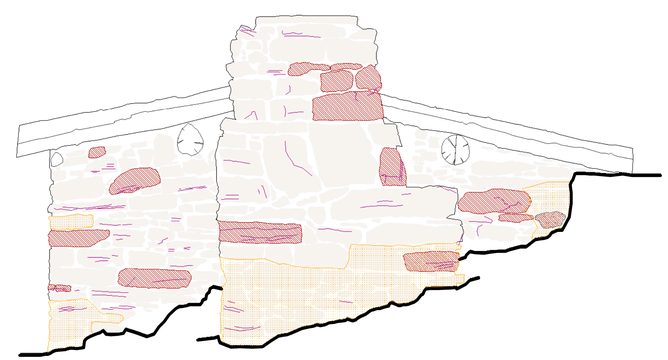






Construction | Condition | Mortar Type

- Quarrying Marks
- Sample
- Soil Wash
- Mortar Type A Wash
- Red Wash
- Red Wash 2
- Staining
- Over Spills
- Mortar Type A
- Mortar Type B
- Mortar Type C
- Mortar Type E
- Mortar Type I
- Mortar Type Y
- Mortar Type Z



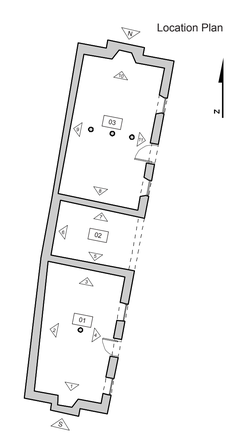
Condition

- Delamination
- Efflorescence
- Moisture
- Friable
- Cracks

SOUTH EXTERIOR ELEVATION

NORTH EXTERIOR ELEVATION

0 2.5 5 7.5 10 Feet



PIPE SPRING NATIONAL MONUMENT

NATIONAL PARK SERVICE, FREDONIA, ARIZONA

PROJECT DIRECTOR:
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UNIVERSITY OF PENNSYLVANIA

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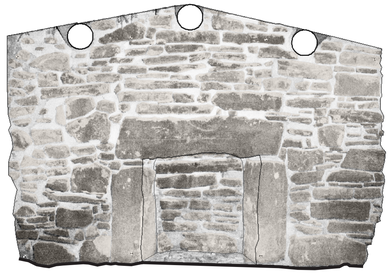
ARCHITECTURAL CONSERVATION LABORATORY AND RESEARCH CENTER

GRADUATE PROGRAM IN HISTORIC PRESERVATION
SCHOOL OF DESIGN
UNIVERSITY OF PENNSYLVANIA

SHEET TITLE:
EAST CABIN: SOUTH ELEVATION
CONDITION SURVEY

SITE RECORDING:
JUNE, 2010

SHEET NO.:
B-2.2



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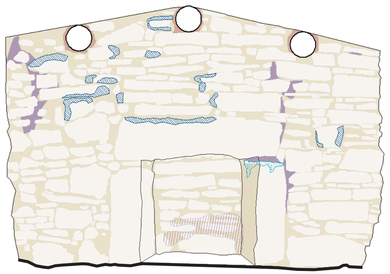

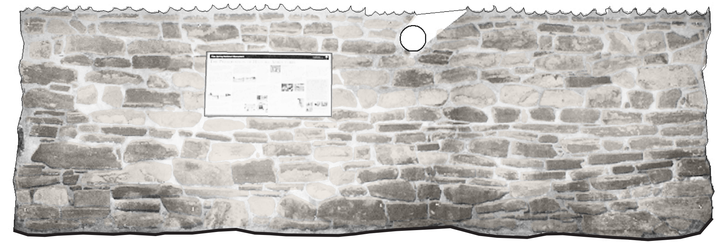

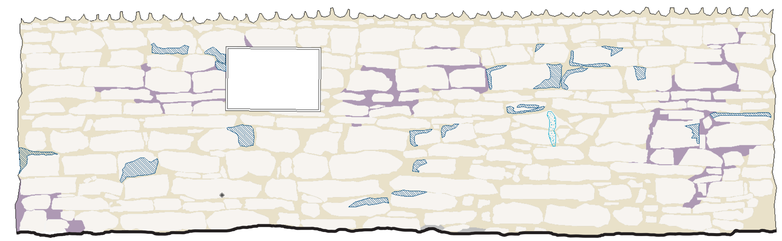

Construction | Condition | Mortar Type

- Quarrying Marks
- Sample
- Soil Wash
- Mortar Type A Wash
- Red Wash
- Red Wash 2
- Staining
- Over Spills
- Mortar Type A
- Mortar Type B
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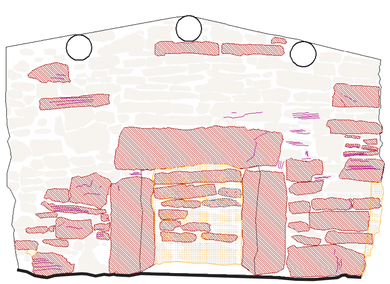
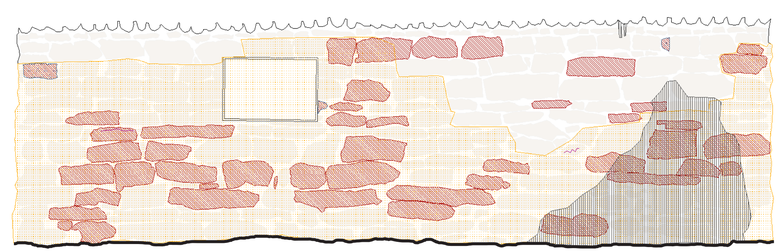
- Mortar Type I
- Mortar Type Y
- Mortar Type Z





Condition

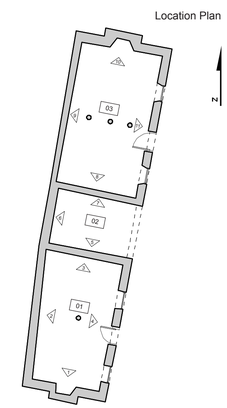
- Delamination
- Efflorescence
- Moisture
- Friable
- Cracks

SOUTH INTERIOR ELEVATION 1

WEST INTERIOR ELEVATION 2

0 2.5 5 7.5 10 Feet

Location Plan



PIPE SPRING NATIONAL MONUMENT

NATIONAL PARK SERVICE, FREDONIA, ARIZONA

PROJECT DIRECTOR:
FRANK G. MATERO,
UNIVERSITY OF PENNSYLVANIA

PROJECT SUPERVISORS:
JOHN HINCHMAN
MEREDITH KELLER

DRAWN BY:
LAUREN V. DRAPALA
YARITZA HERNANDEZ
DIGITIZED FROM HABS DRAWINGS, 1940

SPONSORED BY:
NATIONAL PARK SERVICE
SUPERINTENDENT OF PIPE SPRING:
JOHN HISCOCK

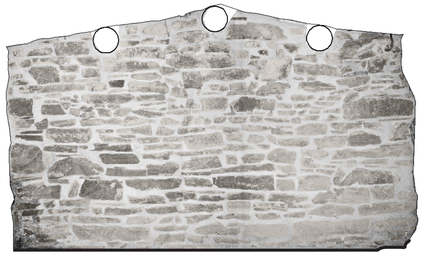
ARCHITECTURAL CONSERVATION LABORATORY AND RESEARCH CENTER

GRADUATE PROGRAM IN HISTORIC PRESERVATION
SCHOOL OF DESIGN
UNIVERSITY OF PENNSYLVANIA

SHEET TITLE:
EAST CABIN: SOUTH/WEST ELEVATIONS
CONDITION SURVEY

SITE RECORDING:
JUNE, 2010

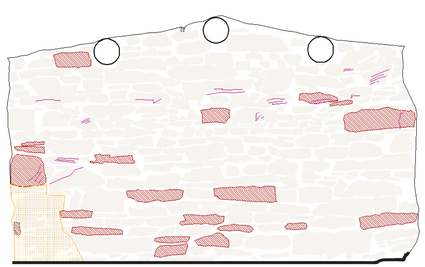
SHEET NO.:
B-2.3



There weren't any historical photos available to identify the 1923 orignal fabric or the 1925 restoration.

Construction | Condition | Mortar Type

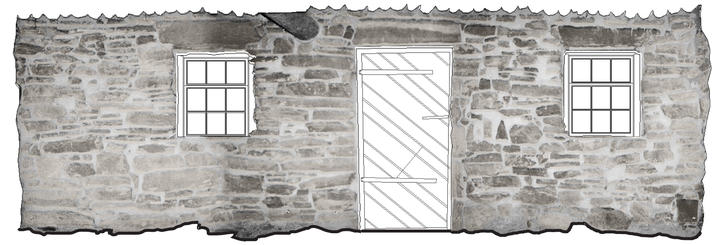
- Quarrying Marks
- Sample
- Soil Wash
- Mortar Type A Wash
- Red Wash
- Red Wash 2
- Staining
- Over Spills
- Mortar Type A
- Mortar Type B
- Mortar Type C
- Mortar Type E
- Mortar Type I
- Mortar Type Y
- Mortar Type Z

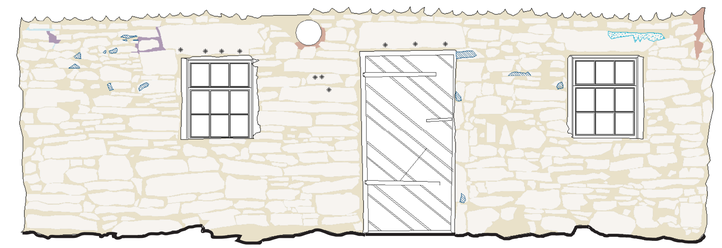


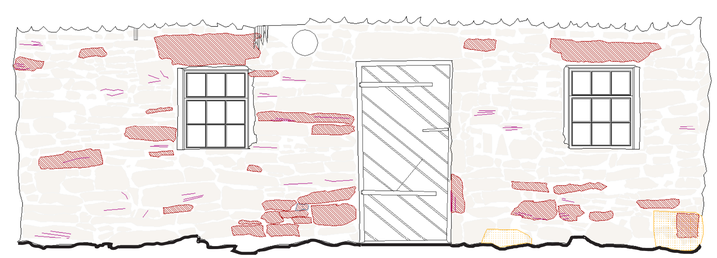
Condition

- Delamination
- Efflorescence
- Moisture
- Friable
- Cracks

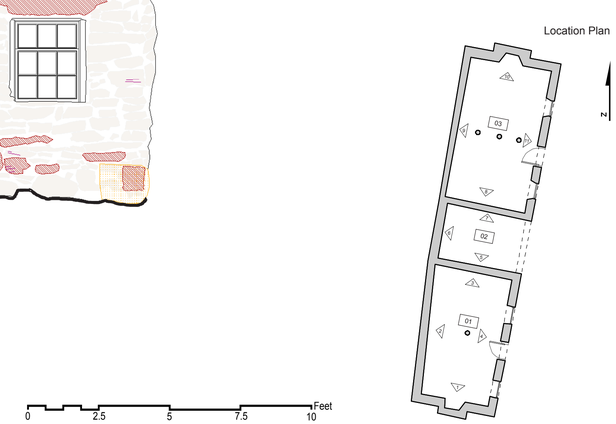
NORTH INTERIOR ELEVATION 3







EAST INTERIOR ELEVATION 4



PIPE SPRING NATIONAL MONUMENT

NATIONAL PARK SERVICE, FREDONIA, ARIZONA

PROJECT DIRECTOR:
FRANK G. MATERO,
UNIVERSITY OF PENNSYLVANIA

PROJECT SUPERVISORS:
JOHN HINCHMAN
MEREDITH KELLER

DRAWN BY:
LAUREN V. DRAPALA
YARITZA HERNANDEZ
DIGITIZED FROM HABS DRAWINGS, 1940

SPONSORED BY:
NATIONAL PARK SERVICE
SUPERINTENDENT OF PIPE SPRING:
JOHN HISCOCK

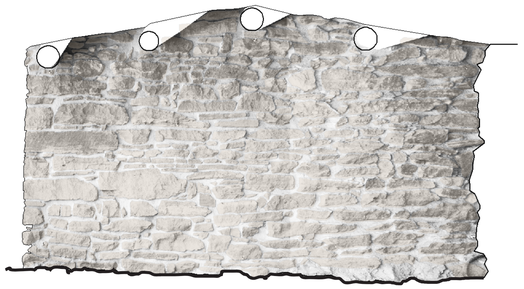
ARCHITECTURAL CONSERVATION LABORATORY AND RESEARCH CENTER

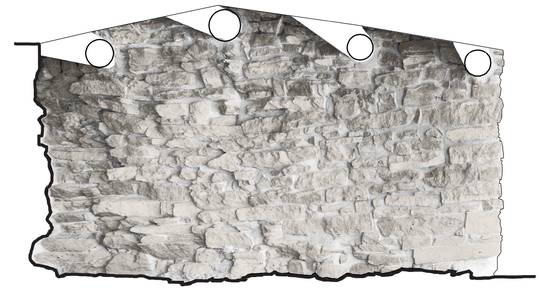
GRADUATE PROGRAM IN HISTORIC PRESERVATION
SCHOOL OF DESIGN
UNIVERSITY OF PENNSYLVANIA

SHEET TITLE:
EAST CABIN: EAST/NORTH ELEVATIONS
CONDITION SURVEY

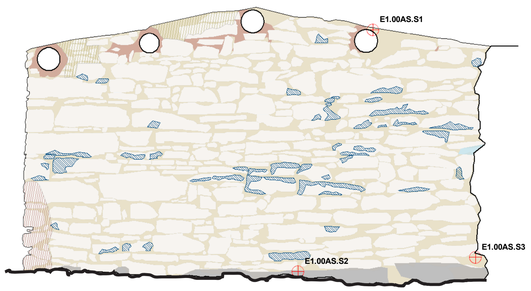
SITE RECORDING:
JUNE, 2010

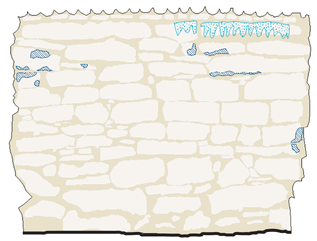
SHEET NO.:
B-2.4

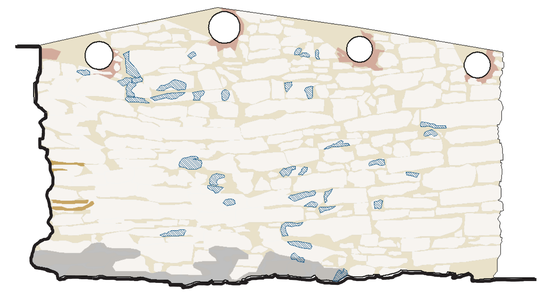




There weren't any historical photos available to identify the 1923 original fabric or the 1925 restoration.

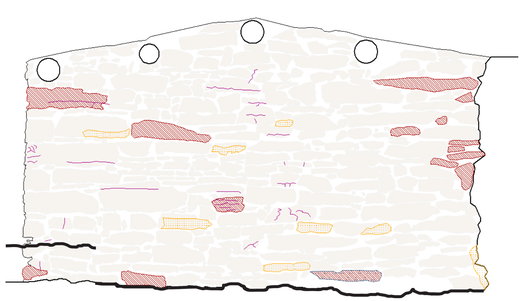


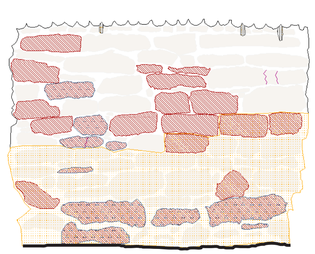


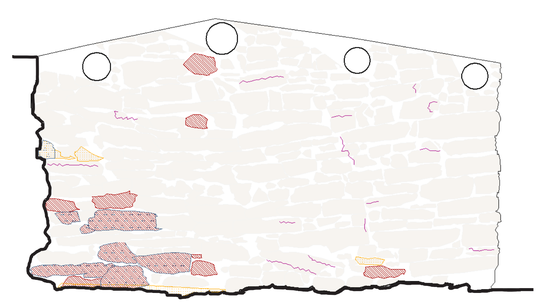


Construction | Condition | Mortar Type

- Quarrying Marks
- Sample
- Soil Wash
- Mortar Type A Wash
- Red Wash
- Red Wash 2
- Staining
- Over Spills
- Mortar Type A
- Mortar Type B
- Mortar Type C
- Mortar Type E
- Mortar Type I
- Mortar Type Y
- Mortar Type Z







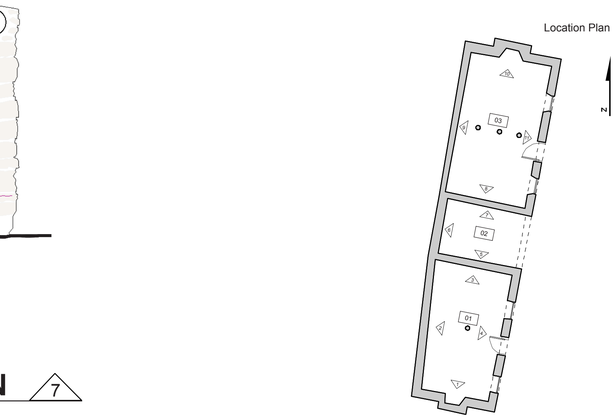
Condition

- Delamination
- Efflorescence
- Moisture
- Friable
- Cracks

SOUTH INTERIOR ELEVATION 5

WEST INTERIOR ELEVATION 6

NORTH INTERIOR ELEVATION 7



0 2.5 5 7.5 10 Feet

PIPE SPRING NATIONAL MONUMENT

NATIONAL PARK SERVICE, FREDONIA, ARIZONA

DRAWN BY:
LAUREN V. DRAPALA
YARITZA HERNANDEZ
DIGITIZED FROM HABS DRAWINGS, 1940

PROJECT DIRECTOR:
FRANK G. MATERO,
UNIVERSITY OF PENNSYLVANIA

PROJECT SUPERVISORS:
JOHN HINCHMAN
MEREDITH KELLER

SPONSORED BY:
NATIONAL PARK SERVICE
SUPERINTENDENT OF PIPE SPRING:
JOHN HISCOCK

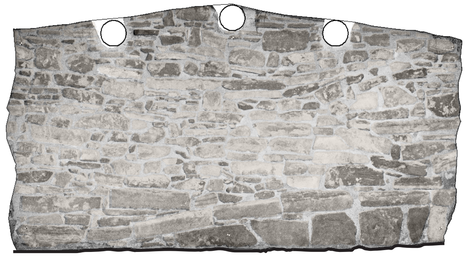
ARCHITECTURAL CONSERVATION LABORATORY AND RESEARCH CENTER

GRADUATE PROGRAM IN HISTORIC PRESERVATION
SCHOOL OF DESIGN
UNIVERSITY OF PENNSYLVANIA

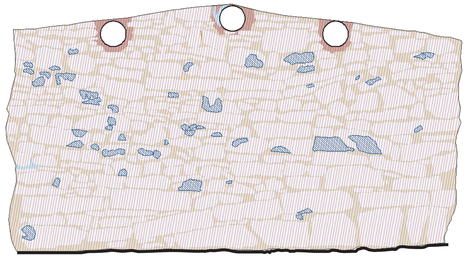
SHEET TITLE:
EAST CABIN: NORTH/WEST/SOUTH ELEVATIONS
CONDITION SURVEY

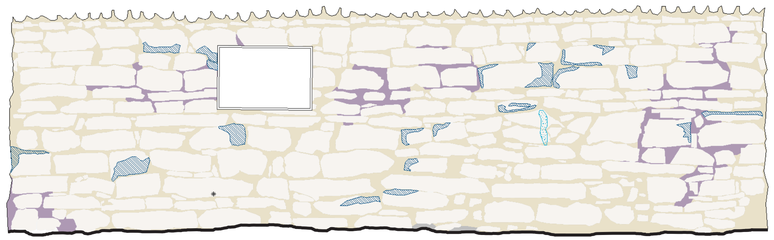
SITE RECORDING:
JUNE, 2010

SHEET NO.:
B-2.5



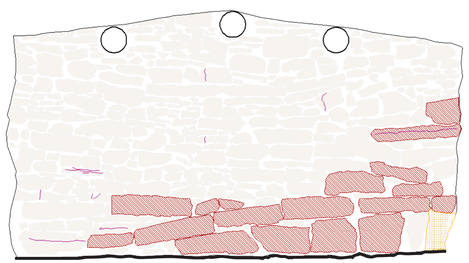
There weren't any historical photos available to identify the 1923 orignal fabric or the 1925 restoration.

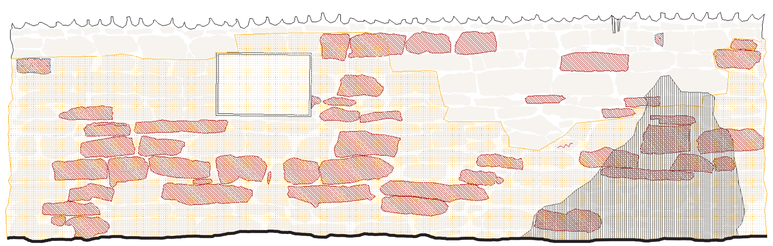




Construction | Condition | Mortar Type

- Quarrying Marks
- Sample
- Soil Wash
- Mortar Type A Wash
- Red Wash
- Red Wash 2
- Staining
- Over Spills
- Mortar Type A
- Mortar Type B
- Mortar Type C
- Mortar Type E
- Mortar Type I
- Mortar Type Y
- Mortar Type Z





Condition

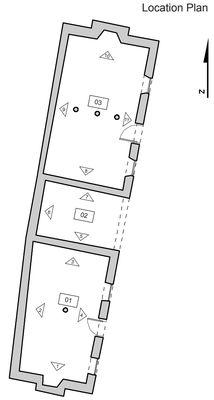
- Delamination
- Efflorescence
- Moisture
- Friable
- Cracks

SOUTH INTERIOR ELEVATION 8

WEST INTERIOR ELEVATION 9

0 2.5 5 7.5 10 Feet

Location Plan



PIPE SPRING NATIONAL MONUMENT

NATIONAL PARK SERVICE, FREDONIA, ARIZONA

PROJECT DIRECTOR:
FRANK G. MATERO,
UNIVERSITY OF PENNSYLVANIA

PROJECT SUPERVISORS:
JOHN HINCHMAN
MEREDITH KELLER

DRAWN BY:
LAUREN V. DRAPALA
YARITZA HERNANDEZ
DIGITIZED FROM HABS DRAWINGS, 1940

SPONSORED BY:
NATIONAL PARK SERVICE
SUPERINTENDENT OF PIPE SPRING:
JOHN HISCOCK

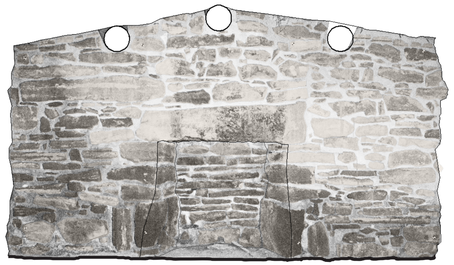
ARCHITECTURAL CONSERVATION LABORATORY AND RESEARCH CENTER

GRADUATE PROGRAM IN HISTORIC PRESERVATION
SCHOOL OF DESIGN
UNIVERSITY OF PENNSYLVANIA

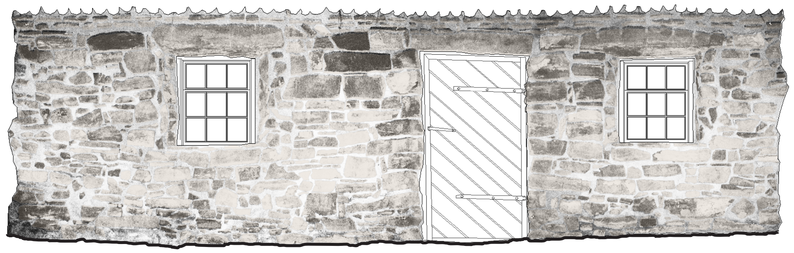
SHEET TITLE:
EAST CABIN: WEST, SOUTH ELEVATIONS
CONDITION SURVEY

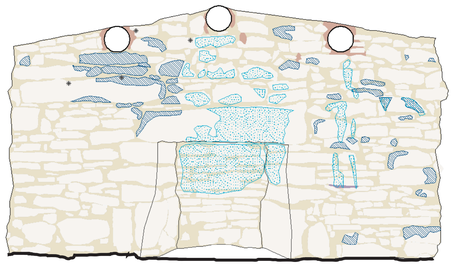
SITE RECORDING:
JUNE, 2010

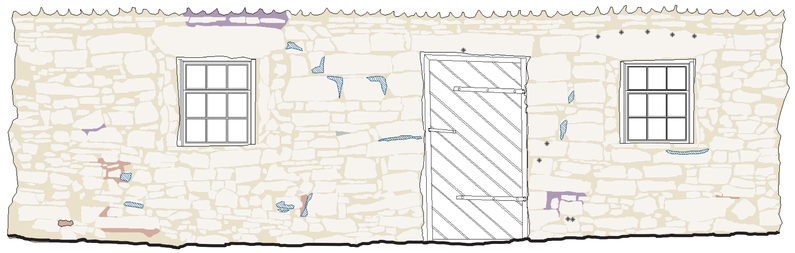
SHEET NO.:
B-2.6



There weren't any historical photos available to identify the 1923 original fabric or the 1925 restoration.

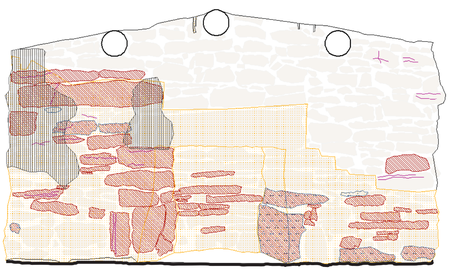


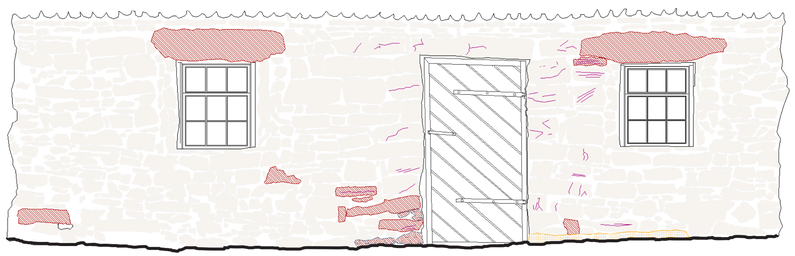




Construction | Condition | Mortar Type

- Quarrying Marks
- Sample
- Soil Wash
- Mortar Type A Wash
- Red Wash
- Red Wash 2
- Staining
- Over Spills
- Mortar Type A
- Mortar Type B
- Mortar Type C
- Mortar Type E
- Mortar Type I
- Mortar Type Y
- Mortar Type Z





Condition

- Delamination
- Efflorescence
- Moisture
- Friable
- Cracks

NORTH INTERIOR ELEVATION 10

EAST INTERIOR ELEVATION 11

PIPE SPRING NATIONAL MONUMENT

NATIONAL PARK SERVICE, FREDONIA, ARIZONA

PROJECT DIRECTOR:
FRANK G. MATERO,
UNIVERSITY OF PENNSYLVANIA

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DRAWN BY:
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JOHN HISCOCK

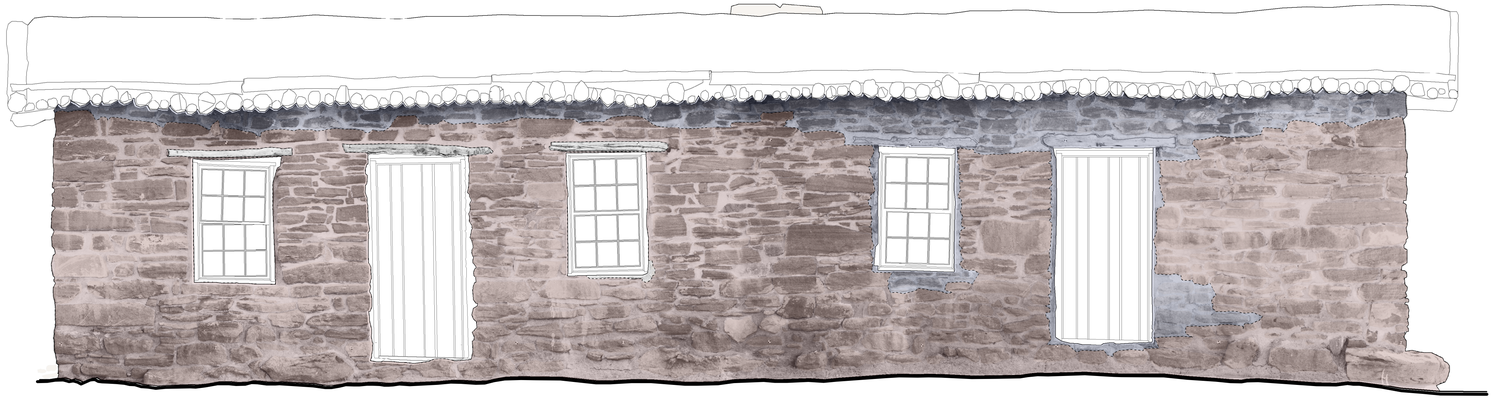
ARCHITECTURAL CONSERVATION LABORATORY AND RESEARCH CENTER

GRADUATE PROGRAM IN HISTORIC PRESERVATION
SCHOOL OF DESIGN
UNIVERSITY OF PENNSYLVANIA

SHEET TITLE:
EAST CABIN: EAST/NORTH ELEVATIONS
CONDITION SURVEY

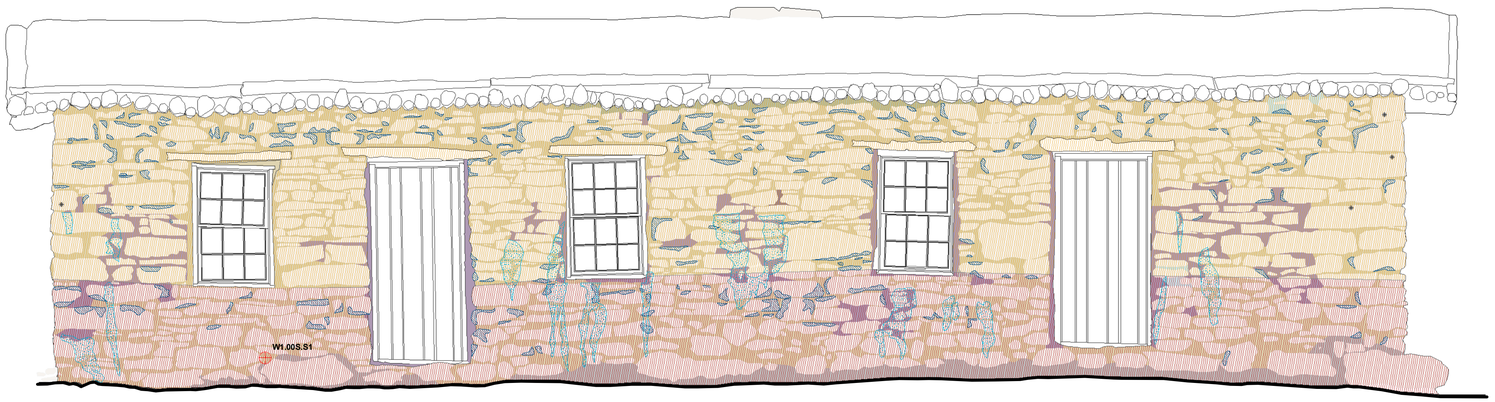
SITE RECORDING:
JUNE, 2010

SHEET NO.:
B-2.7



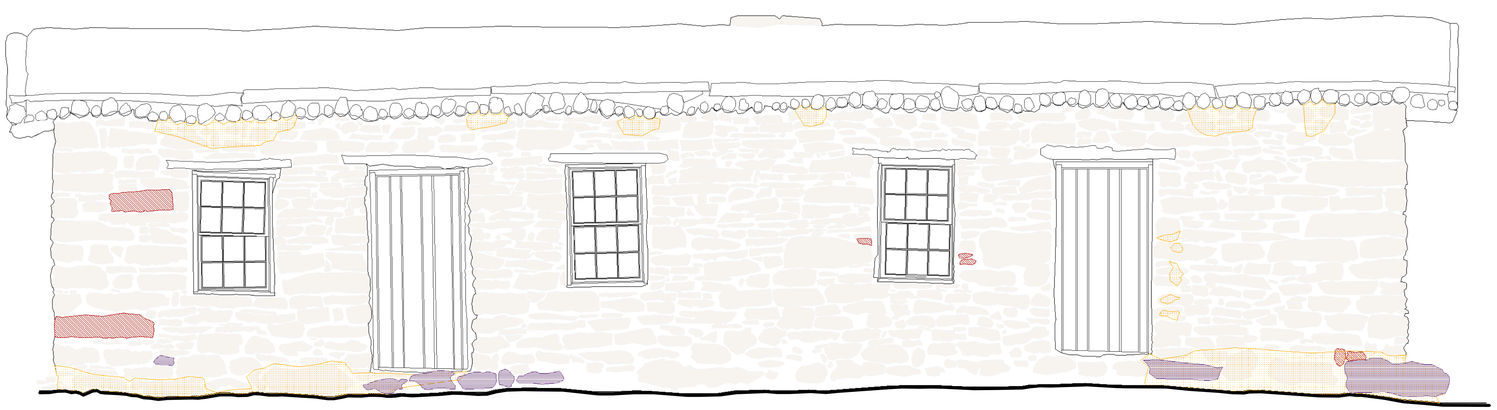
Original - 1923 Fabric

1925 Restoration



Construction Detail | Mortar Type

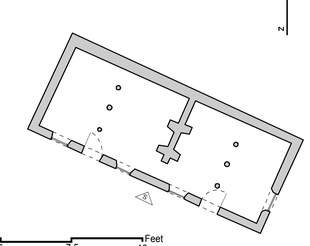
- Quarrying Marks
- Graffiti
- Sample
- Soil Wash
- Red Wash
- Orange Wash
- Mortar Type A Wash
- Staining
- Over Spills
- Mortar Type A
- Mortar Type B
- Mortar Type C
- Mortar Type D
- Mortar Type E
- Mortar Type F
- Mortar Type I
- Mortar Type Y



Condition

- Differential Errosion
- Delamination
- Friable
- Efflorescence
- Moisture
- Cracks

Location Plan



SOUTH EXTERIOR ELEVATION

PIPE SPRING NATIONAL MONUMENT
NATIONAL PARK SERVICE, FREDONIA, ARIZONA

PROJECT SUPERVISORS:
JOHN HINCHMAN
MEREDITH KELLER

PROJECT DIRECTOR:
FRANK G. MATERO,
UNIVERSITY OF PENNSYLVANIA

DRAWN BY:
LAUREN V. DRAPALA
YARITZA HERNANDEZ
DIGITIZED FROM HABS DRAWINGS, 1940

SPONSORED BY:
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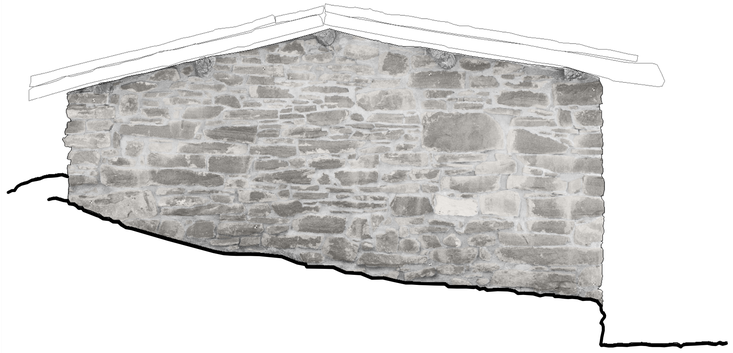
SUPERINTENDENT OF PIPE SPRING:
JOHN HISCOCK

ARCHITECTURAL CONSERVATION LABORATORY AND RESEARCH CENTER
UNIVERSITY OF PENNSYLVANIA
SCHOOL OF DESIGN
GRADUATE PROGRAM IN HISTORIC PRESERVATION

SITE RECORDING:
JUNE, 2010

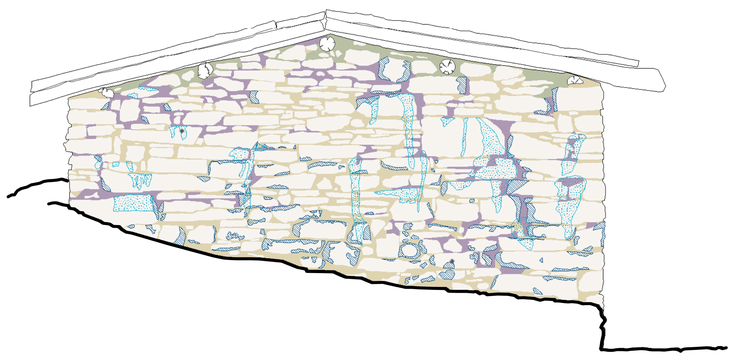
SHEET TITLE:
WEST CABIN: SOUTH ELEVATION
CONDITION SURVEY

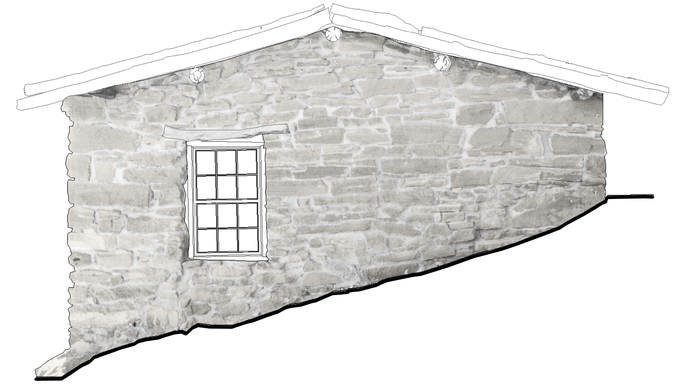
SHEET NO.:
B-3.1

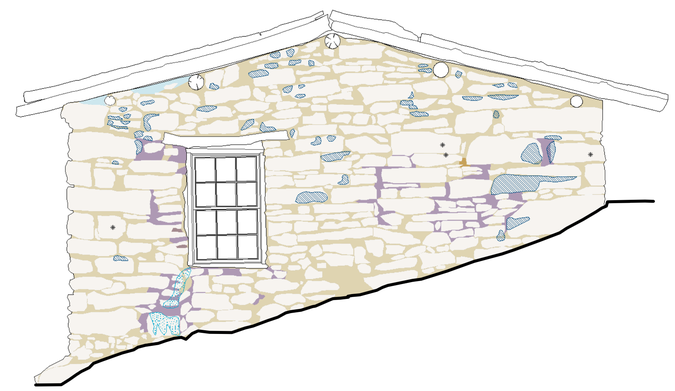


1923 Original Fabric

1925 Restoration

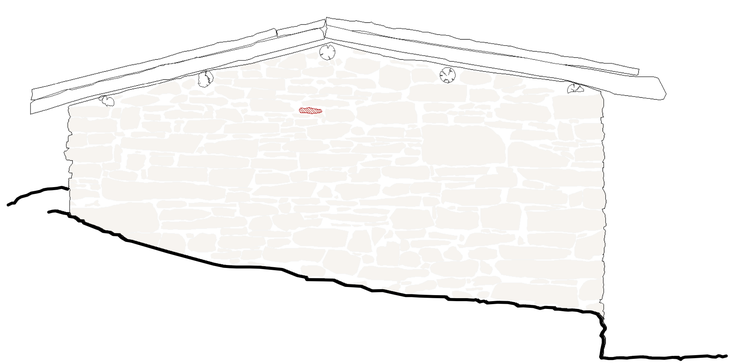


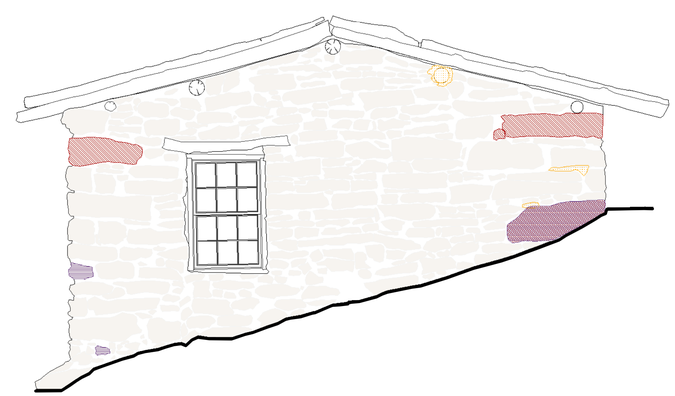




Construction Detail | Mortar Type

- Quarrying Marks
- Graffiti
- Sample
- Soil Wash
- Red Wash
- Orange Wash
- Mortar Type A Wash
- Staining
- Over Spills
- Mortar Type A
- Mortar Type B
- Mortar Type C
- Mortar Type D
- Mortar Type E
- Mortar Type F
- Mortar Type I
- Mortar Type Y





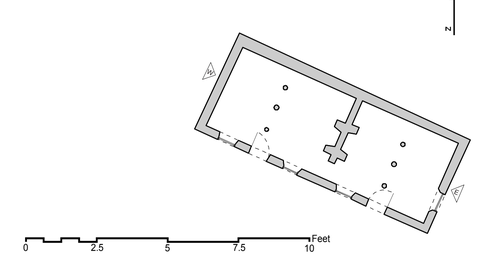
Condition

- Differential Errosion
- Delamination
- Friable
- Efflorescence
- Moisture

WEST EXTERIOR ELEVATION

EAST EXTERIOR ELEVATION

Location Plan



PIPE SPRING NATIONAL MONUMENT

NATIONAL PARK SERVICE, FREDONIA, ARIZONA

SPONSORED BY:
NATIONAL PARK SERVICE
SUPERINTENDENT OF PIPE SPRING:
JOHN HISCOCK

DRAWN BY:
LAUREN V. DRAPALA
YARITZA HERNANDEZ
DIGITIZED FROM HABS DRAWINGS, 1940

PROJECT DIRECTOR:
FRANK G. MATERO,
UNIVERSITY OF PENNSYLVANIA

PROJECT SUPERVISORS:
JOHN HINCHMAN
MEREDITH KELLER

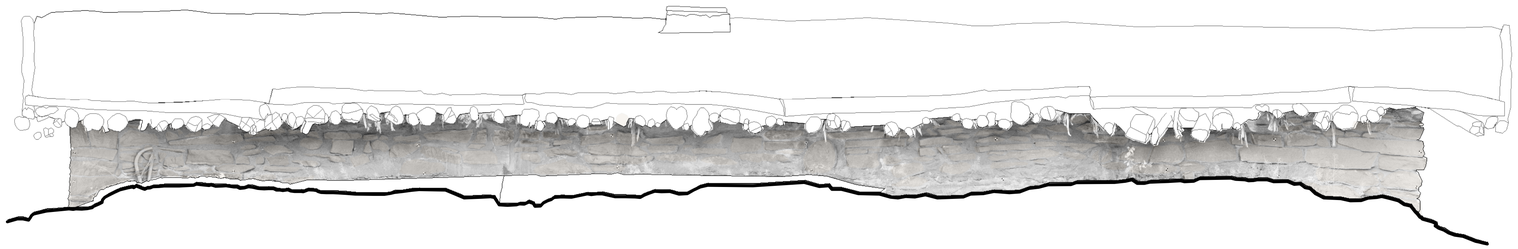
ARCHITECTURAL CONSERVATION LABORATORY AND RESEARCH CENTER

SCHOOL OF DESIGN
UNIVERSITY OF PENNSYLVANIA
GRADUATE PROGRAM IN HISTORIC PRESERVATION

SHEET TITLE:
WEST CABIN: EAST/WEST ELEVATIONS
CONDITION SURVEY

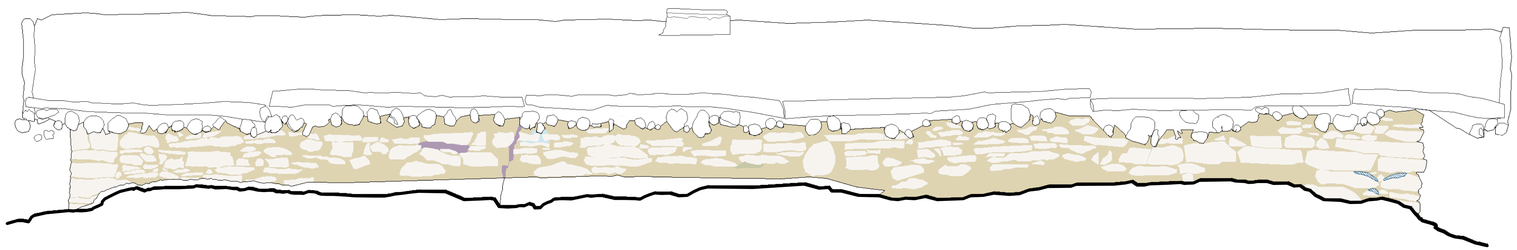
SITE RECORDING:
JUNE, 2010

SHEET NO.:
B-3.2



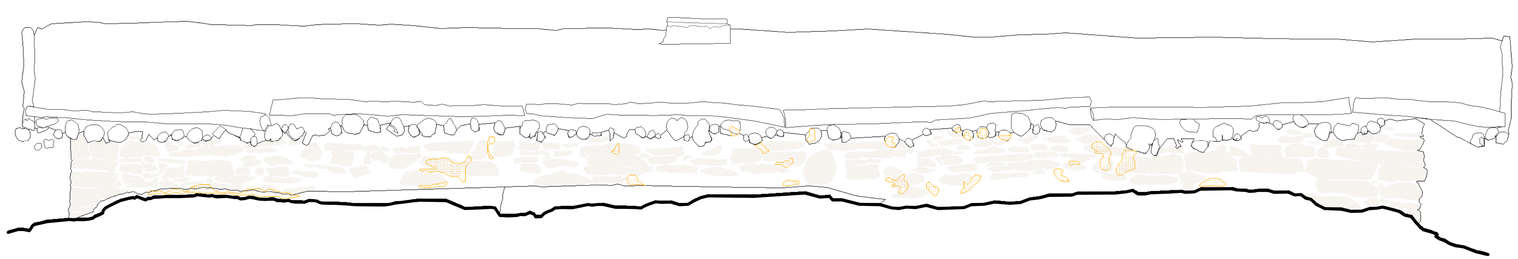
Original - 1923 Fabric

1925 Restoration



Construction Detail | Mortar Type

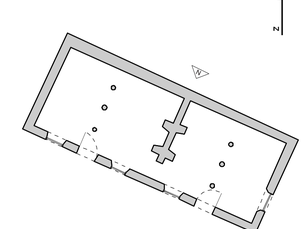
- Quarrying Marks
- Graffiti
- Sample
- Soil Wash
- Red Wash
- Orange Wash
- Mortar Type A Wash
- Staining
- Over Spills
- Mortar Type A
- Mortar Type B
- Mortar Type C
- Mortar Type D
- Mortar Type E
- Mortar Type F
- Mortar Type I
- Mortar Type Y



Condition

- Differential Errosion
- Delamination
- Friable
- Efflorescence
- Moisture
- Cracks

Location Plan



0 2.5 5 7.5 10 Feet

NORTH ELEVATION

PIPE SPRING NATIONAL MONUMENT
NATIONAL PARK SERVICE, FREDONIA, ARIZONA

PROJECT DIRECTOR:
FRANK G. MATERO,
UNIVERSITY OF PENNSYLVANIA

PROJECT SUPERVISORS:
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MEREDITH KELLER

DRAWN BY:
LAUREN V. DRAPALA
YARITZA HERNANDEZ
DIGITIZED FROM HABS DRAWINGS, 1940

SPONSORED BY:
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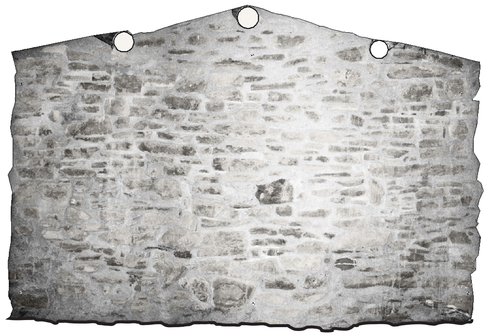
SUPERINTENDENT OF PIPE SPRING:
JOHN HISCOCK

ARCHITECTURAL CONSERVATION LABORATORY AND RESEARCH CENTER
SCHOOL OF DESIGN
UNIVERSITY OF PENNSYLVANIA
GRADUATE PROGRAM IN HISTORIC PRESERVATION

SHEET TITLE:
WEST CABIN: NORTH ELEVATION
CONDITION SURVEY

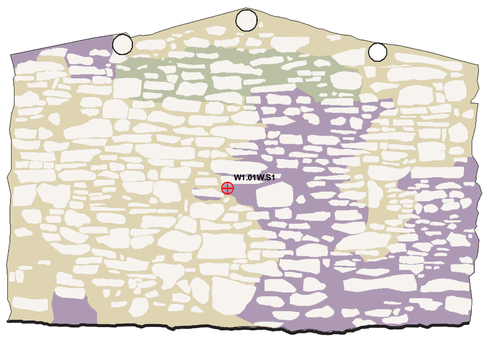
SITE RECORDING:
JUNE, 2010

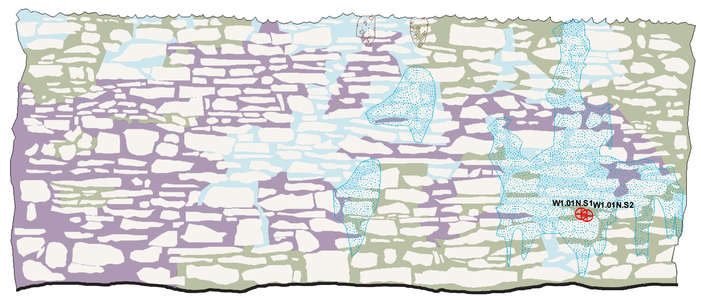
SHEET NO.:
B-3.3



Original - 1923 Fabric

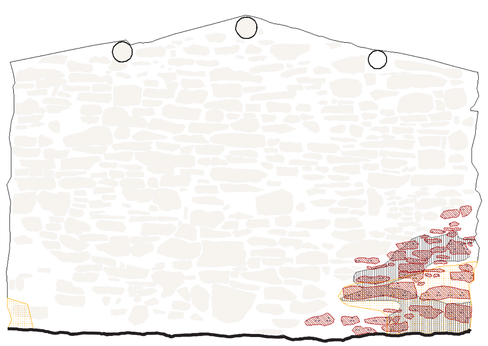
1925 Restoration

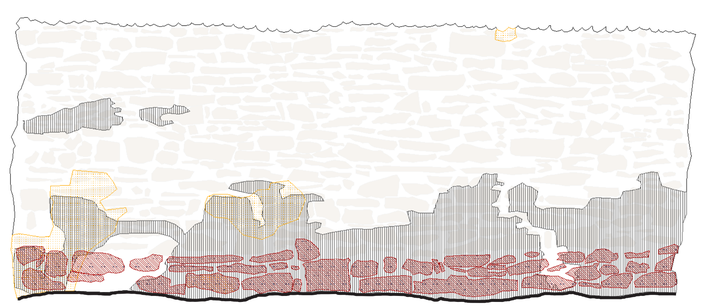




Construction Detail | Mortar Type

- Quarrying Marks
- Graffiti
- Sample
- Soil Wash
- Red Wash
- Orange Wash
- Mortar Type A Wash
- Staining
- Over Spills
- Mortar Type A
- Mortar Type B
- Mortar Type C
- Mortar Type D
- Mortar Type E
- Mortar Type F
- Mortar Type I
- Mortar Type Y





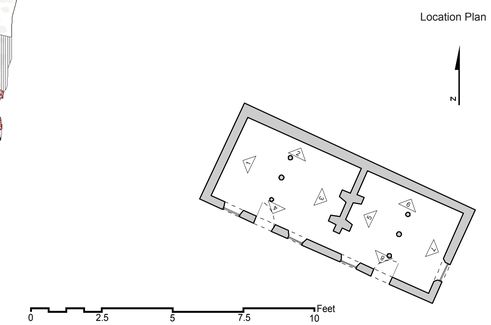
Condition

- Differential Errosion
- Delamination
- Friable
- Efflorescence
- Moisture

WEST INTERIOR ELEVATION 1

NORTH INTERIOR ELEVATION 2

Location Plan



PIPE SPRING NATIONAL MONUMENT

NATIONAL PARK SERVICE, FREDONIA, ARIZONA

SPONSORED BY:
NATIONAL PARK SERVICE
SUPERINTENDENT OF PIPE SPRING:
JOHN HISCOCK

PROJECT DIRECTOR:
FRANK G. MATERO,
UNIVERSITY OF PENNSYLVANIA

PROJECT SUPERVISORS:
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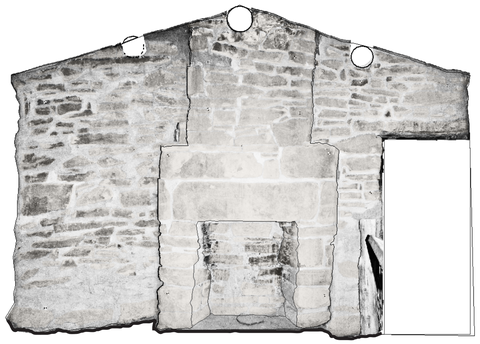
ARCHITECTURAL CONSERVATION LABORATORY AND RESEARCH CENTER
GRADUATE PROGRAM IN HISTORIC PRESERVATION
SCHOOL OF DESIGN
UNIVERSITY OF PENNSYLVANIA

SHEET TITLE:
WEST CABIN: NORTH, WEST ELEVATIONS
CONDITION SURVEY

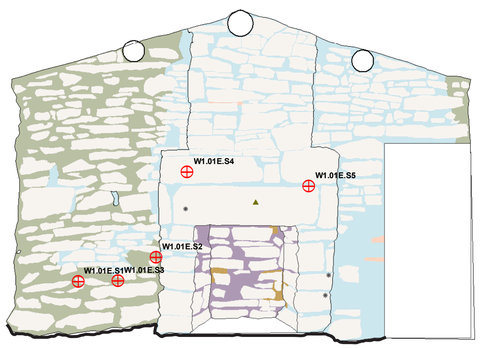
SITE RECORDING:
JUNE, 2010

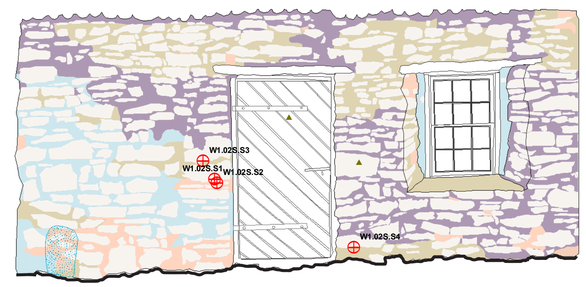
SHEET NO.:
B-3.4



Original - 1923 Fabric

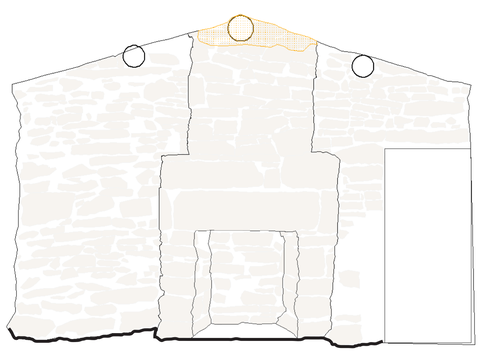
1925 Restoration

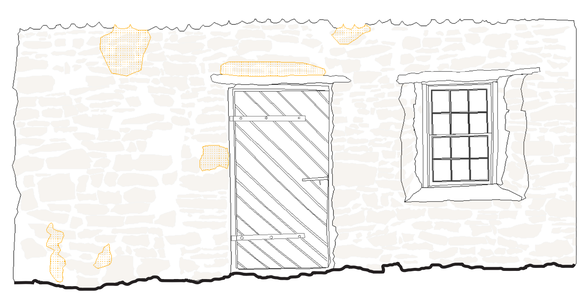




Construction Detail | Mortar Type

- Quarrying Marks
- Graffiti
- Sample
- Soil Wash
- Red Wash
- Orange Wash
- Mortar Type A Wash
- Staining
- Over Spills
- Mortar Type A
- Mortar Type B
- Mortar Type C
- Mortar Type D
- Mortar Type E
- Mortar Type F
- Mortar Type I
- Mortar Type Y





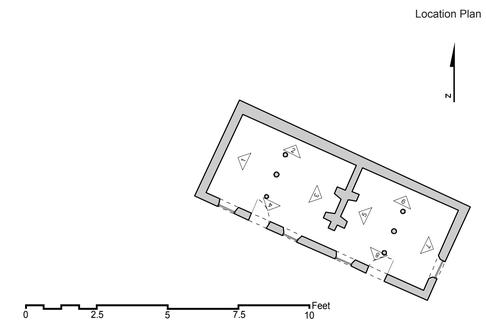
Condition

- Differential Errosion
- Delamination
- Friable
- Efflorescence
- Moisture

EAST INTERIOR ELEVATION 3

SOUTH INTERIOR ELEVATION 4

Location Plan



PIPE SPRING NATIONAL MONUMENT

NATIONAL PARK SERVICE, FREDONIA, ARIZONA

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UNIVERSITY OF PENNSYLVANIA

PROJECT SUPERVISORS:
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MEREDITH KELLER

DRAWN BY:
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YARITZA HERNANDEZ
DIGITIZED FROM HABS DRAWINGS, 1940

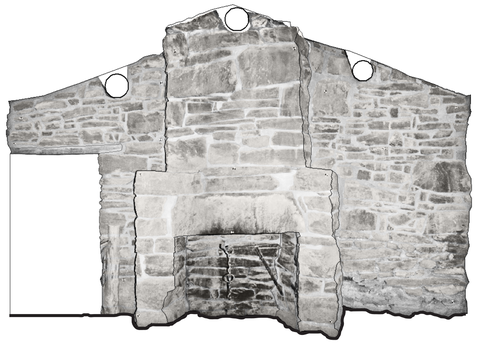
SPONSORED BY:
NATIONAL PARK SERVICE
SUPERINTENDENT OF PIPE SPRING:
JOHN HISCOCK

ARCHITECTURAL CONSERVATION LABORATORY AND RESEARCH CENTER
UNIVERSITY OF PENNSYLVANIA
SCHOOL OF DESIGN
GRADUATE PROGRAM IN HISTORIC PRESERVATION

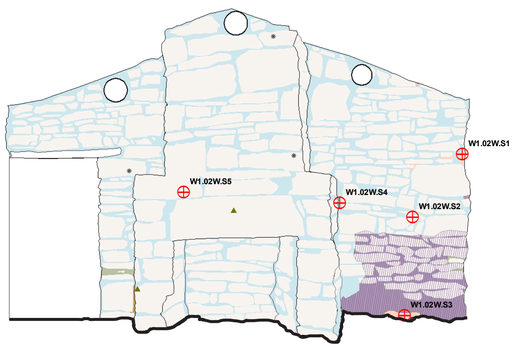
SHEET TITLE:
WEST CABIN: SOUTH/EAST ELEVATIONS
CONDITION SURVEY

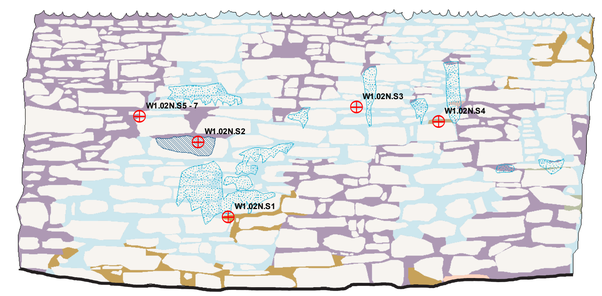
SITE RECORDING:
JUNE, 2010

SHEET NO.:
B-3.5



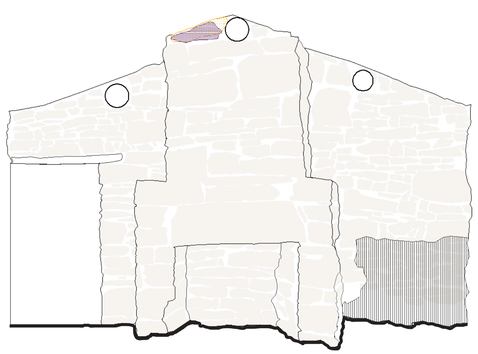
Original - 1923 Fabric 1925 Restoration

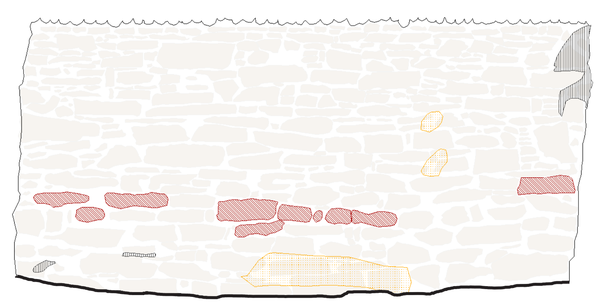




Construction Detail | Mortar Type

Quarrying Marks, Graffiti, Sample, Soil Wash, Red Wash, Orange Wash, Mortar Type A Wash, Staining, Over Spills, Mortar Type A, Mortar Type B, Mortar Type C, Mortar Type D, Mortar Type E, Mortar Type F, Mortar Type I, Mortar Type Y





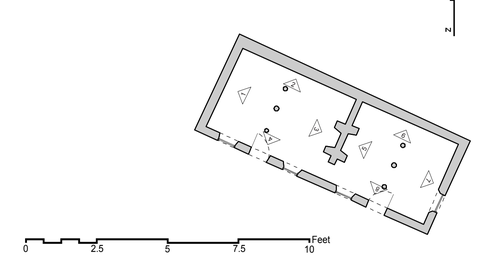
Condition

Differential Errosion, Delamination, Friable, Efflorescence, Moisture, Cracks

WEST INTERIOR ELEVATION 5

NORTH INTERIOR ELEVATION 6

Location Plan



PIPE SPRING NATIONAL MONUMENT
NATIONAL PARK SERVICE, FREDONIA, ARIZONA

PROJECT DIRECTOR:
FRANK G. MATERO,
UNIVERSITY OF PENNSYLVANIA

PROJECT SUPERVISORS:
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MEREDITH KELLER

DRAWN BY:
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DIGITIZED FROM HABS DRAWINGS, 1940

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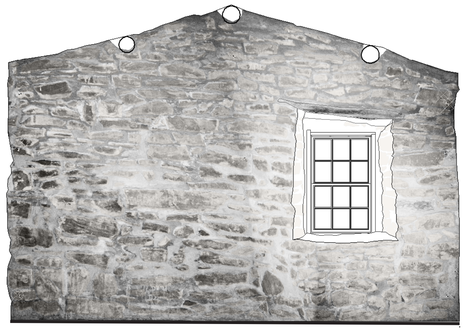
SUPERINTENDENT OF PIPE SPRING:
JOHN HISCOCK

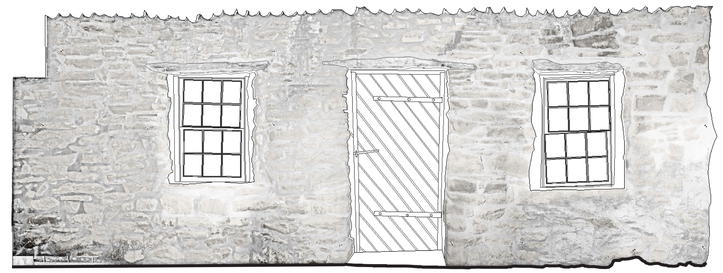
ARCHITECTURAL CONSERVATION LABORATORY AND RESEARCH CENTER
SCHOOL OF DESIGN
GRADUATE PROGRAM IN HISTORIC PRESERVATION
UNIVERSITY OF PENNSYLVANIA

SHEET TITLE:
WEST CABIN: NORTH/WEST ELEVATIONS
CONDITION SURVEY

SITE RECORDING:
JUNE, 2010

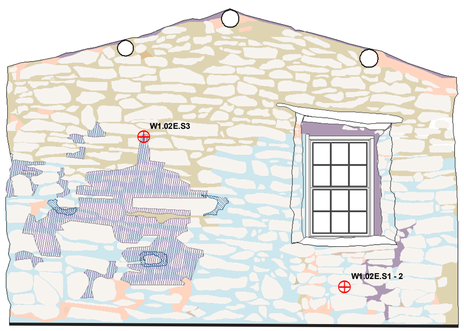
SHEET NO.:
B-3.6

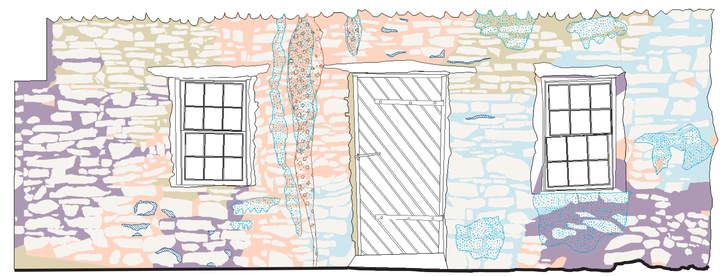




Original - 1923 Fabric

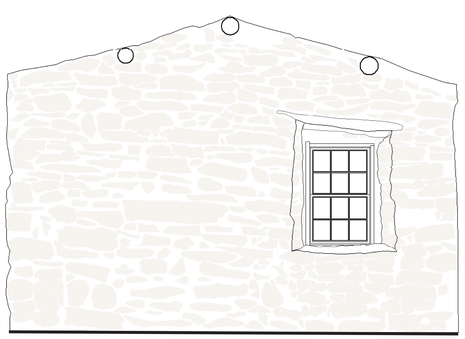
1925 Restoration

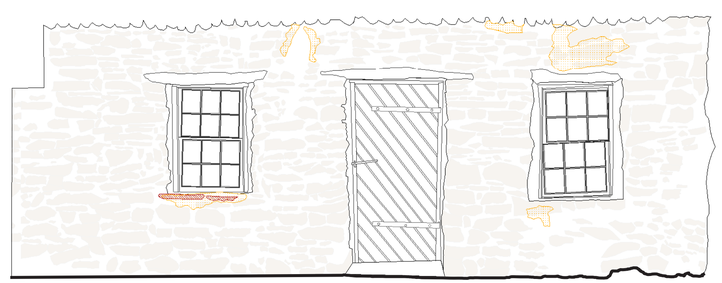




Construction Detail | Mortar Type

- Quarrying Marks
- Graffiti
- Sample
- Soil Wash
- Red Wash
- Orange Wash
- Mortar Type A Wash
- Staining
- Over Spills
- Mortar Type A
- Mortar Type B
- Mortar Type C
- Mortar Type D
- Mortar Type E
- Mortar Type F
- Mortar Type I
- Mortar Type Y





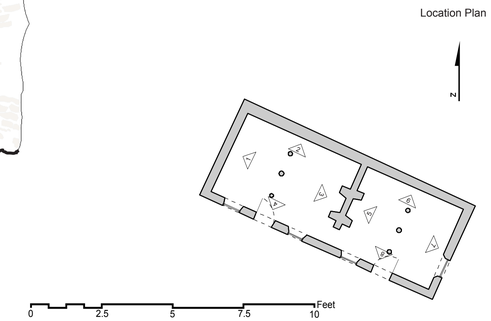
Condition

- Differential Errosion
- Delamination
- Friable
- Efflorescence
- Moisture

EAST INTERIOR ELEVATION 7

SOUTH INTERIOR ELEVATION 8

Location Plan



PIPE SPRING NATIONAL MONUMENT
NATIONAL PARK SERVICE, FREDONIA, ARIZONA

PROJECT SUPERVISORS:
JOHN HINCHMAN
MEREDITH KELLER

PROJECT DIRECTOR:
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UNIVERSITY OF PENNSYLVANIA

DRAWN BY:
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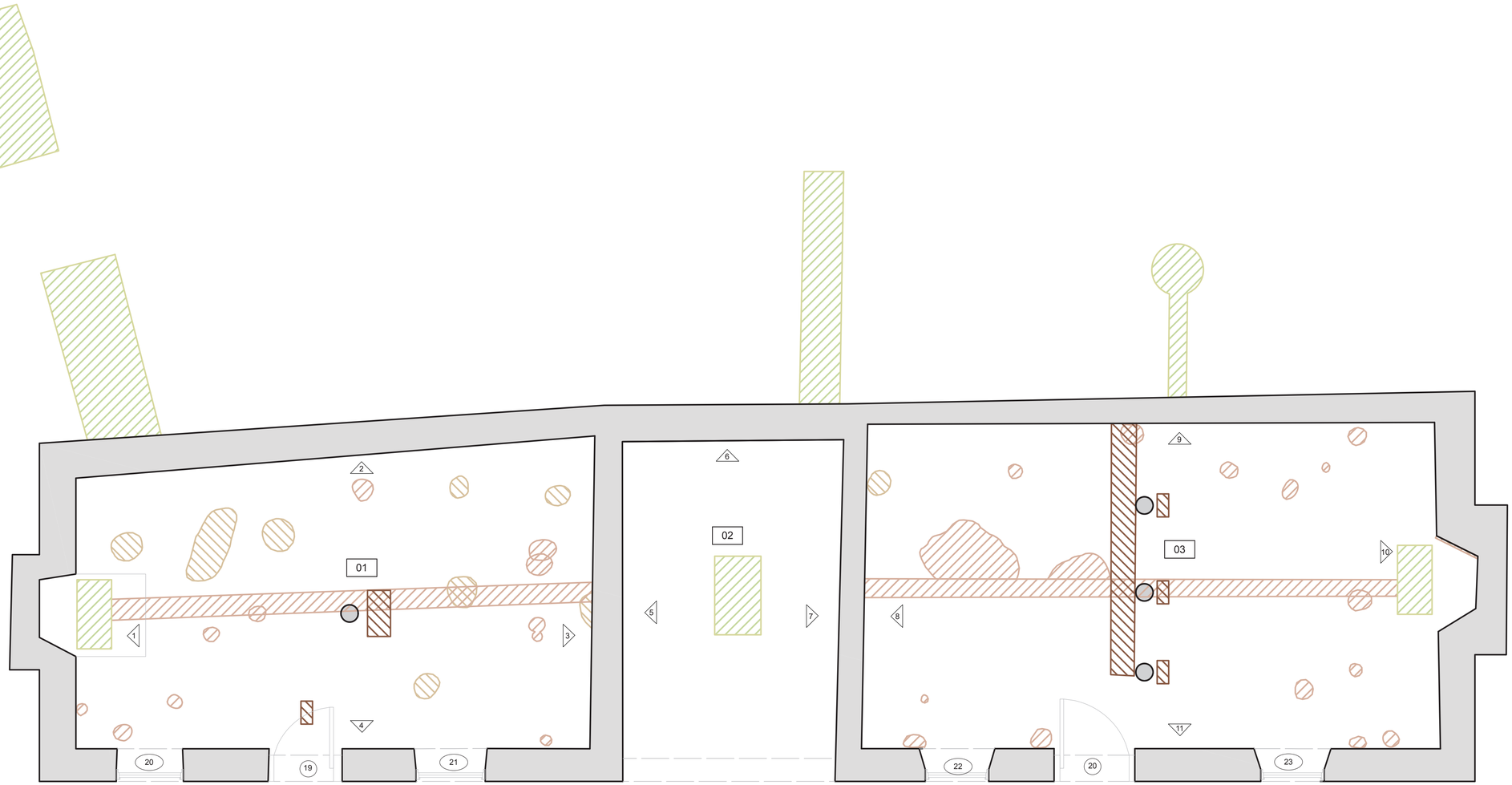
ARCHITECTURAL CONSERVATION LABORATORY AND RESEARCH CENTER
UNIVERSITY OF PENNSYLVANIA
SCHOOL OF DESIGN
GRADUATE PROGRAM IN HISTORIC PRESERVATION

SPONSORED BY:
NATIONAL PARK SERVICE
SUPERINTENDENT OF PIPE SPRING:
JOHN HISCOCK

SHEET TITLE:
WEST CABIN: SOUTH/EAST ELEVATIONS
CONDITION SURVEY

SITE RECORDING:
JUNE, 2010

SHEET NO.:
B-3.7

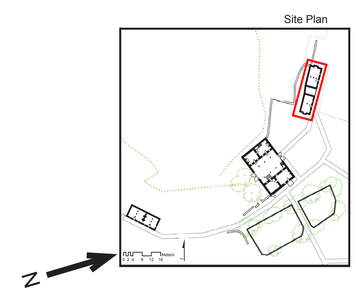


Legend

1989 Hunt Archeology: Excavation | 1997 Haecker Archeology: Excavation | 1998 Archeological Data Recovery: Historic Objects | 1998 Archeological Data Recovery: NPS Objects

EAST CABIN : ARCHAEOLOGICAL EXCAVATIONS

0 2.5 5 7.5 10 Feet



PIPE SPRING NATIONAL MONUMENT
NATIONAL PARK SERVICE, FREDONIA, ARIZONA

PROJECT DIRECTOR:
FRANK G. MATERO,
UNIVERSITY OF PENNSYLVANIA

PROJECT SUPERVISORS:
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LAUREN V. DRAPALA
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DIGITIZED FROM HABS DRAWINGS, 1940

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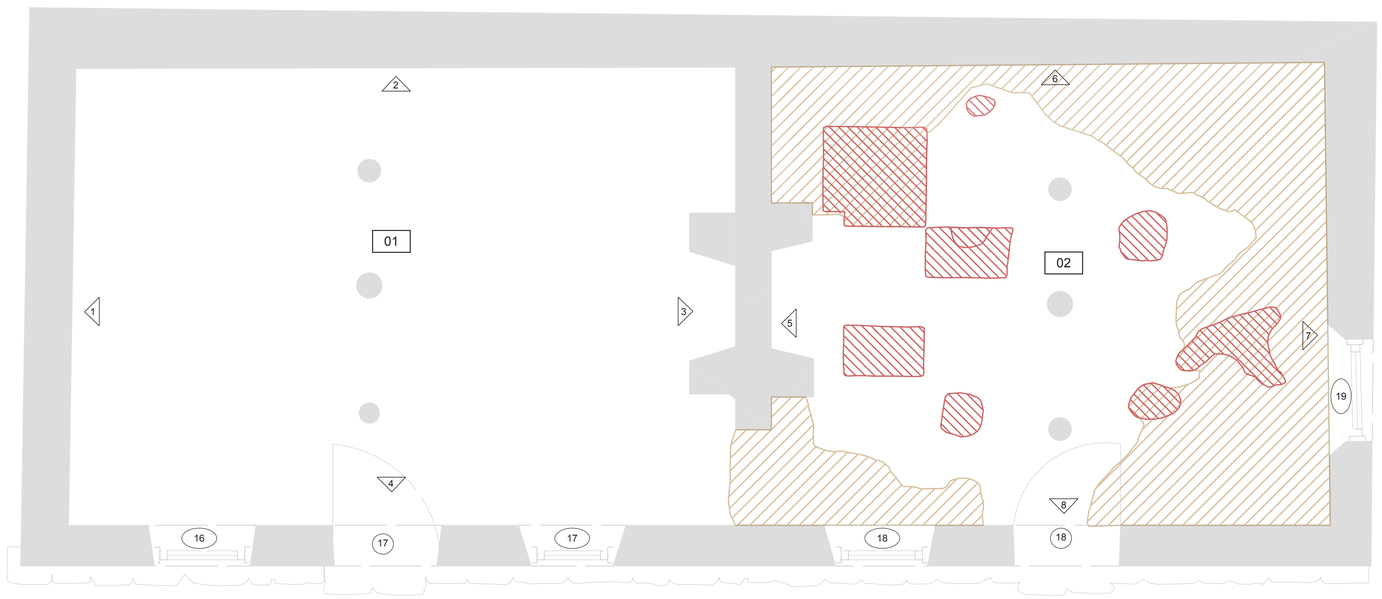
JOHN HISCOCK

ARCHITECTURAL CONSERVATION LABORATORY AND RESEARCH CENTER
SCHOOL OF DESIGN
UNIVERSITY OF PENNSYLVANIA
GRADUATE PROGRAM IN HISTORIC PRESERVATION

SHEET TITLE:
EAST CABIN
ARCHAEOLOGICAL EXCAVATIONS

SITE RECORDING:
JUNE, 2010

SHEET NO.:
C-2.1



Legend

1989 Hunt Archeology: Removed Cultural Fill

1989 Hunt Archeology: Excavation

WEST CABIN : ARCHAEOLOGICAL EXCAVATIONS

0 2.5 5 7.5 10 Feet

N

Site Plan

PIPE SPRING NATIONAL MONUMENT

NATIONAL PARK SERVICE, FREDONIA, ARIZONA

PROJECT DIRECTOR:
FRANK G. MATERO,
UNIVERSITY OF PENNSYLVANIA

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SCHOOL OF DESIGN

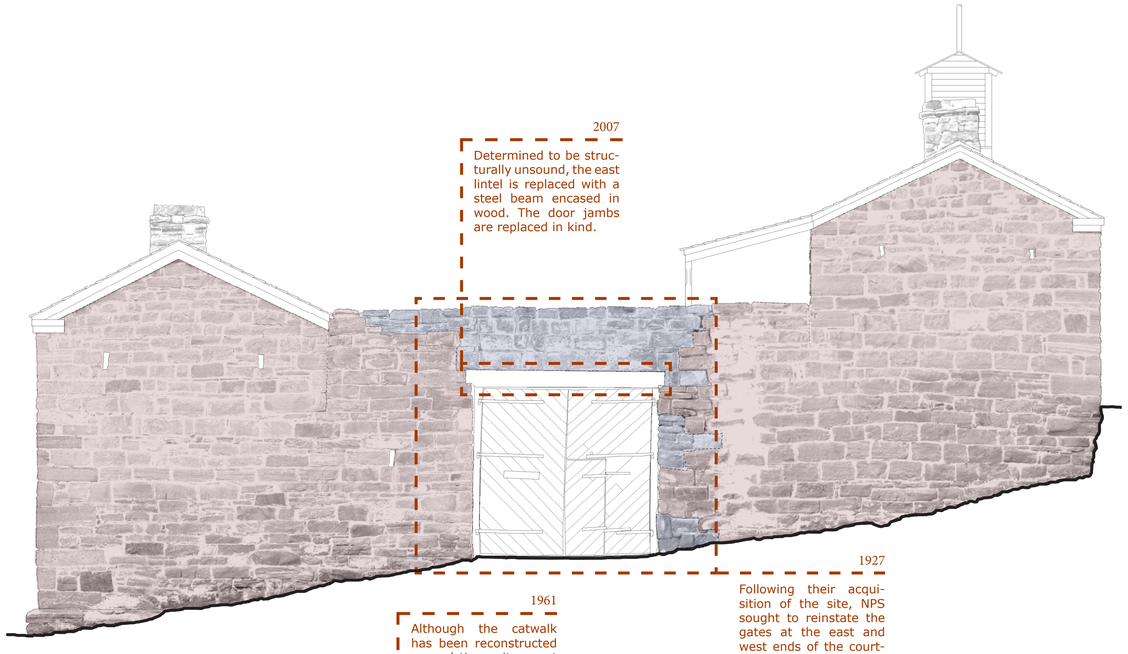
UNIVERSITY OF PENNSYLVANIA

GRADUATE PROGRAM IN HISTORIC PRESERVATION

SHEET TITLE:
WEST CABIN
ARCHAEOLOGICAL EXCAVATIONS

SITE RECORDING:
JUNE, 2010

SHEET NO.:
C-3.1



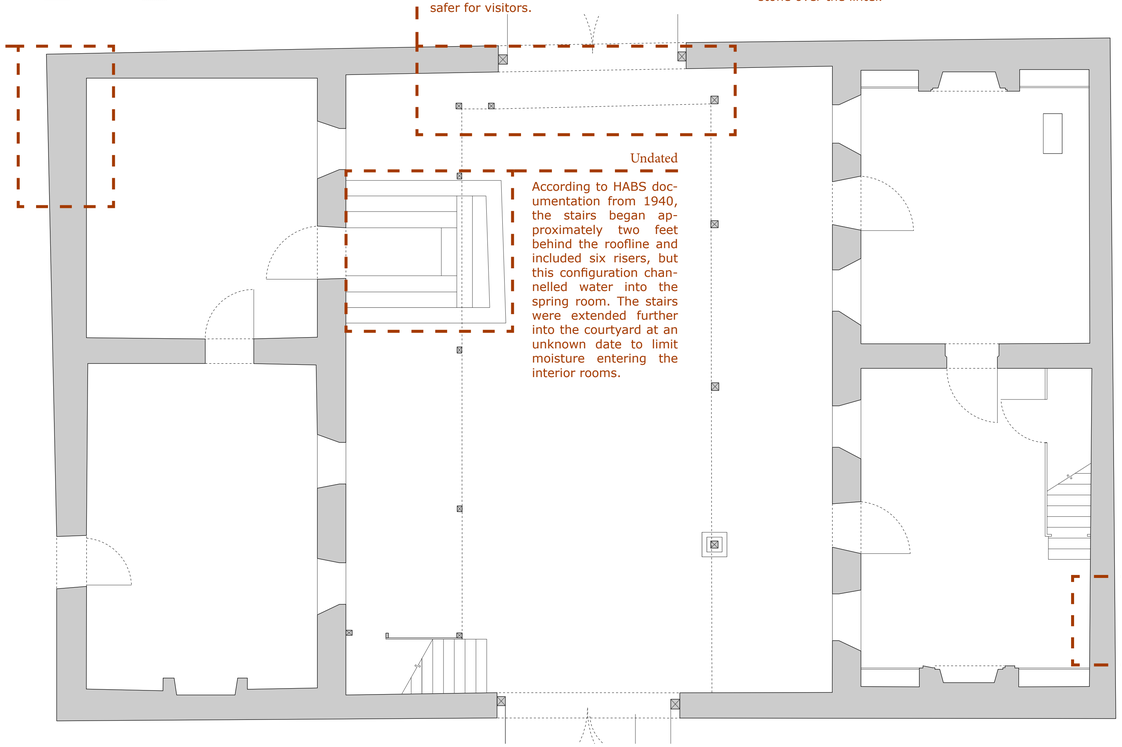
2007
Determined to be structurally unsound, the east lintel is replaced with a steel beam encased in wood. The door jambs are replaced in kind.

1927
Following their acquisition of the site, NPS sought to reinstate the gates at the east and west ends of the courtyard. This required fabricating new gate doors and infilling the missing stone over the lintel.

1961
Although the catwalk has been reconstructed several times, it was at this date that site managers lessened the incline to make the steps safer for visitors.

1930s
Movement detected at the southwest corner in the 1930s; however, stabilization attempts do not begin until 1957.

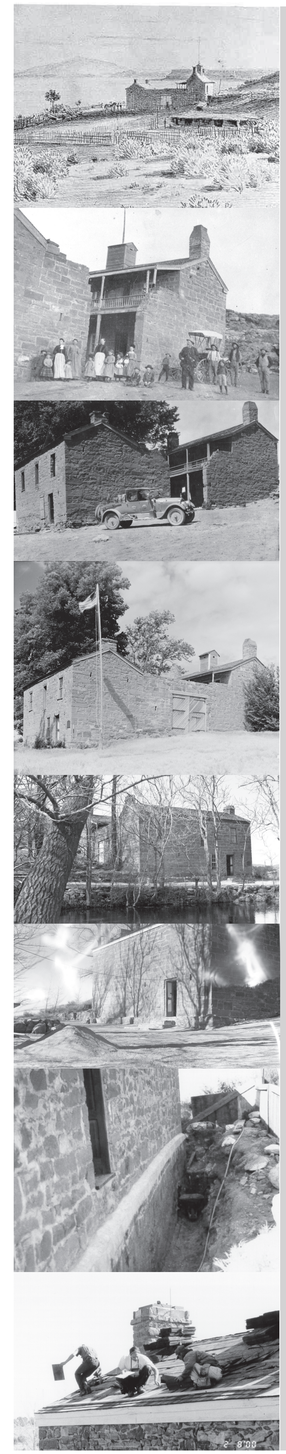
Legend
1923 Original Fabric
2007 Restoration



Undated
According to HABS documentation from 1940, the stairs began approximately two feet behind the roofline and included six risers, but this configuration channelled water into the spring room. The stairs were extended further into the courtyard at an unknown date to limit moisture entering the interior rooms.

Pre-1885
An exterior doorway is added to the second floor of the upper building to allow access north of the structure. Construction details indicate that this entryway was not original to the fort's 1872 construction.

FORT EXTERIOR : MORPHOLOGICAL EVOLUTION



1870-72
Two fortified buildings are constructed around a central courtyard. The enclosed structure, referred to as Winsor Castle or the fort, was built by Bishop A.P Winsor.

1885
Albert Tissandier visits Pipe Spring and draws the fort. The original gates remain in place, but the exterior door on the upper building's north elevation has already been added.

1886
Resident Flora Woolley requests that the large courtyard gates be removed.

1891
By 1891 three windows and a second-story door had been inserted into the lower building's south facade.

1922
After fifty years of private ownership, the fort exhibits extensive deterioration of its wooden elements, including the cedar shake roof and both balconies.

1923
Pipe Spring National Monument is established and maintained by the National Park Service. Superintendent Frank Pinkley and site custodian Leonard Heaton prioritize renovations at the fort, which include installing a new roof, reinstating the gates, and replacing the balconies.

1938
Structural issues develop at the southwest corner of the lower building.

1940
The fort is documented under the Historic American Buildings Survey (HABS). A complete set of measured drawings and photographs are produced.

1948
The courtyard gates are replaced.

1959
The fort's original appearance is reinstated by enclosing the window and door openings created in the lower building's south facade during the 1880s.

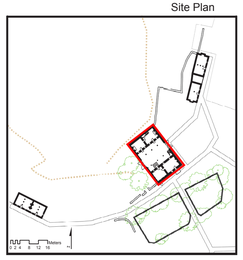
1980
Excavation behind the upper building's north wall is required to mitigate the fort's recurring moisture issues. A new drainage system is installed.

1990s - 2000s
Cyclic maintenance during the 1990s and 2000s includes reroofing both structures, repointing, installing gutters and downspouts, replacing elements of the balconies, and reinforcing the lintel over the east gate.

1885 · 1891 · 1922 · 1940 · 1950 · 1959 · 1980 · 2000

0 1.5 3 6 9 12 Feet

Site Plan



PIPE SPRING NATIONAL MONUMENT
NATIONAL PARK SERVICE, FREDONIA, ARIZONA

LAUREN V. DRAPALA
YARITZA HERNANDEZ
DIGITIZED FROM HABS DRAWINGS, 1940

PROJECT DIRECTOR:
FRANK G. MATERO,
UNIVERSITY OF PENNSYLVANIA

PROJECT SUPERVISORS:
JOHN HINCHMAN
MEREDITH KELLER

SPONSORED BY:
NATIONAL PARK SERVICE
SUPERINTENDENT OF PIPE SPRING:
JOHN HISCOCK

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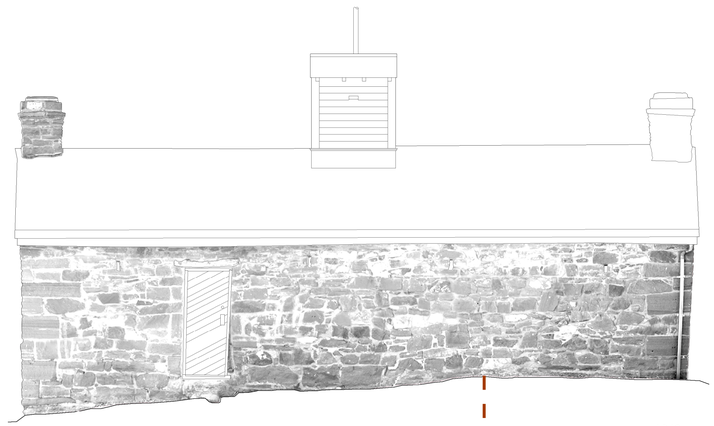
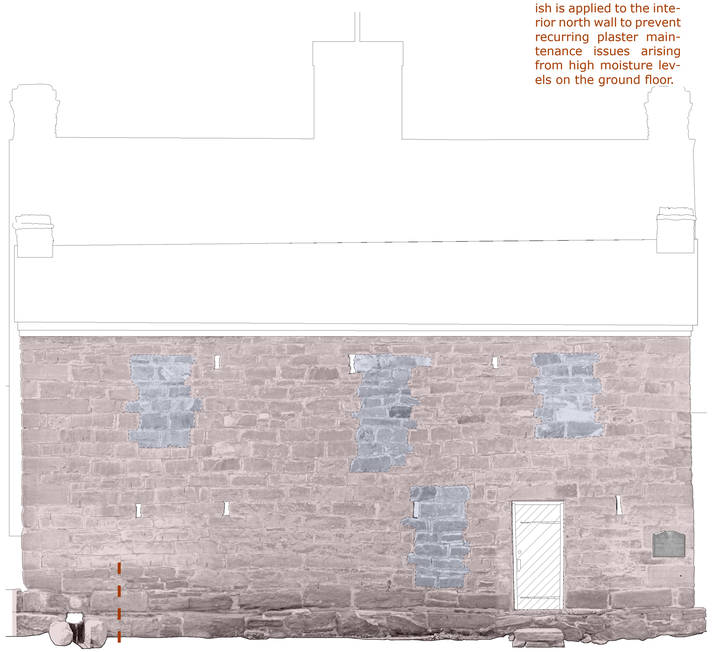


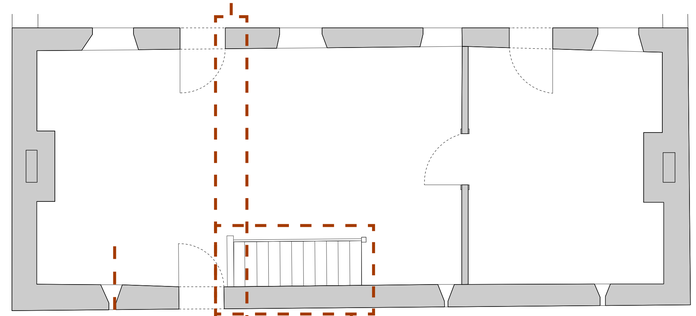
1949

An Embeco concrete finish is applied to the interior north wall to prevent recurring plaster maintenance issues arising from high moisture levels on the ground floor.



1950

An application of a cement-based plaster is applied to the interior walls of the spring room.



1959

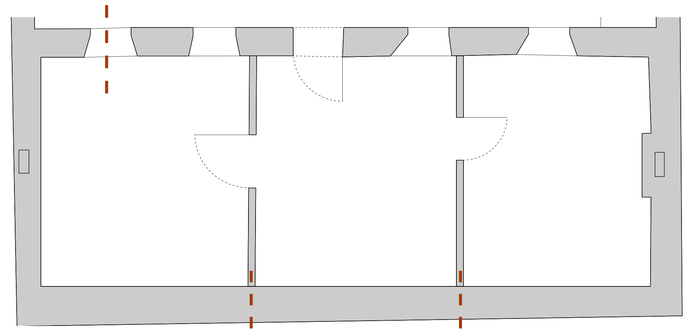
The partition wall in the meeting room was removed during the major renovation in 1959. The stair was also slightly enlarged to accommodate staff and visitors.

2008-2009

The warped and cupped floorboards in the meeting room are repaired by inserting strips of in kind wood to replace heavily deteriorated sections of the boards.

c. 1876 - 1885

Based on construction evidence, the stair in the upper building is a later addition. Its installation likely coincides with the construction of the partition wall and adjacent exterior doorway.



1929

Superintendent Frank Pinkley directs Charles Heaton to double the upper level floorboards in the lower building.

c. 1900

The partition walls are removed to create a large, open space on the second floor.

1930

The partition walls are reinstated in the early NPS renovations to return the fort back to its original appearance.

1870-72

Two fortified buildings are constructed around a central courtyard. The enclosed structure, referred to as Winsor Castle or the fort, was built by Bishop A.P Winsor.

1876

1876

Charles Pulsipher recorded that Mormon leader Brigham Young instructed him to divide the meeting room to make bedrooms for visitors.

1885

Albert Tissandier's drawing shows the exterior doorway installed on the north wall of the upper building.

1927

1927

Frank Pinkley directs Charles Heaton to install a flagstone floor in the cheese and spring rooms.

1948

During the replacement of the floorboards in the kitchen and parlor, the upper building's foundations are modified to help circulate air and prevent moisture accumulation.

1959

1959

New floor joists and floorboards are installed in the kitchen and parlor, and the partition wall in the meeting room is removed.

1959

In the restoration campaign of 1959, many wooden elements are restored. This work includes the fabrication of new picture moldings throughout the lower building's upper level rooms and minor repairs to or replacements of picture moldings, baseboards, and door and window casings.

1976

1976

An emergency inspection is performed to determine damage to the upper building's north masonry wall and lower level rooms; the inspection required the removal of the Embeco concrete finish on the north wall as well as the flooring.

1980

1980

New floors are installed in the upper building's lower level following the completion of an exterior moisture barrier at the north wall to lower humidity levels within these rooms.

1999

1999

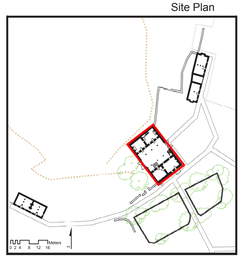
The plasters are stripped from the spring and cheese room walls, and a new zinc lath and lime-based plaster system is installed to prevent constant replacement due to moisture issues.

2009

2009

Repointing of cracking and deteriorated plaster of the interior rooms.

Site Plan



FORT INTERIOR : MORPHOLOGICAL EVOLUTION

0 1.5 3 6 9 12 Feet

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NATIONAL PARK SERVICE, FREDONIA, ARIZONA

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SHEET TITLE:
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SITE RECORDING:
JUNE, 2010

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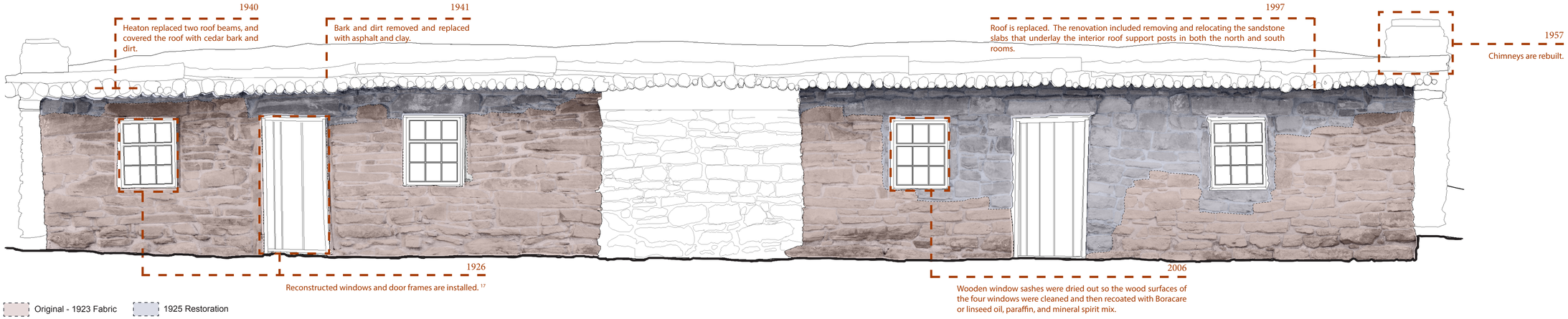
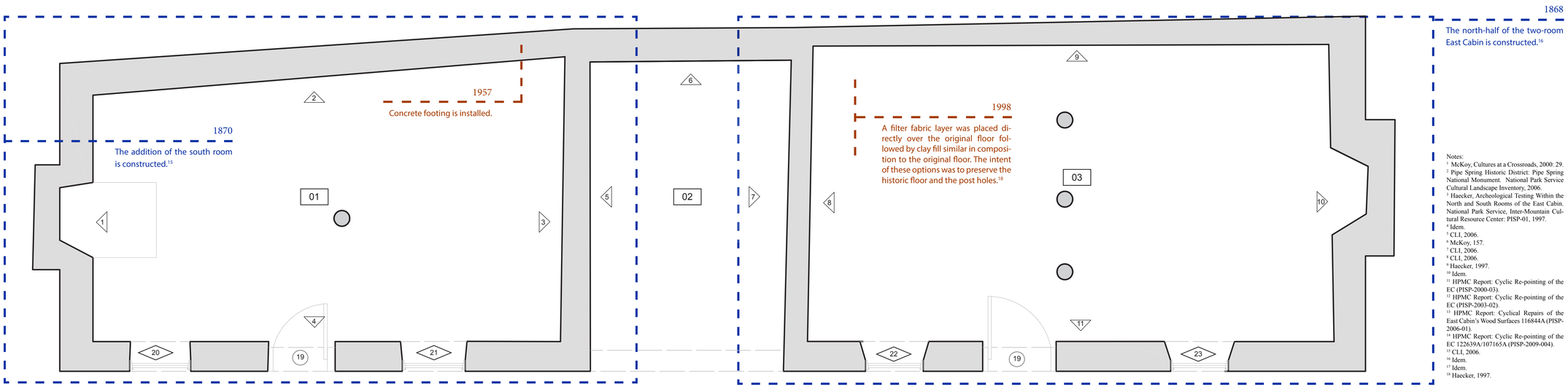
D-1.2





Notes:
[1] McKoy, Cultures at a Crossroads, 2000: 29.
[2] Pipe Spring Historic District: Pipe Spring National Monument. National Park Service Cultural Landscape Inventory, 2006.
[3] Haecker, Archeological Testing Within the North and South Rooms of the East Cabin. National Park Service, Inter-Mountain Cultural Resource Center: PISP-01, 1997.
[4] Idem.
[5] CLI, 2006.
[6] McKoy, 157.
[7] CLI, 2006.
[8] CLI, 2006.
[9] Haecker, 1997.
[10] Idem.
[11] HPMC Report: Cyclic Re-pointing of the EC (PISP-2000-03).
[12] HPMC Report: Cyclic Re-pointing of the EC (PISP-2003-02).
[13] HPMC Report: Cyclical Repairs of the East Cabin's Wood Surfaces 116844A (PISP-2006-01).
[14] HPMC Report: Cyclic Re-pointing of the EC 122639A/107165A (PISP-2009-004).
[15] CLI, 2006.
[16] Idem.
[17] Idem.
[18] Haecker, 1997.

1868 — The north-half of the two-room East Cabin is constructed for use by the Utah Territorial Militia. In November, the cabin is used as part of an encampment of 36 volunteers. [1]

1870 — The addition of the south room is constructed.[2]

1870-72 — The structure was used as a temporary residence for the Anson Winsor and John Young families during the construction of Winsor Castle. [3]

1885 — Frenchman, Albert Tissander, visits Pipe Spring and sketches the site and its buildings. His sketch includes the fort, east cabin, and corrals.

1886-1891 — East Cabin used as chicken house and stable.[4]

1891-1925 — East Cabin is allowed to deteriorate and is reportedly used as a cow and pigpen by those occupying the Fort.[5]

1925 — By this time, the cabin was missing its roof, the back wall and part of the front wall. Under the direction of Boss Pinkley, the roof is replaced with pine stringers, cedar poles, stripped of bark and covered with cedar bark and dirt.[6]

1926 — Reconstruction of the East Cabin is completed, with reconstructed windows and door frames installed.[7]

1937 — The East Cabin is cleaned out and interpreted for the public.

1943 — Foundation strengthened with concrete.

1959 — Stone walls of Fort, cabins, retaining walls, ponds were repointed. Walls pointed with concrete and stained with clay mix.

1969 — A chicken coop is moved to the East Cabin area to be used as a "living ranch."[8]

1986 — The exterior walls were repointed.

1989 — Archeological excavation was undertaken by Hunt.[9]

1997 — Masonry was repointed; and, the non-historic flagstone walkway was removed and reinstalled in front of the structure. Additionally, an archeological excavation was undertaken by Haecker.[10]

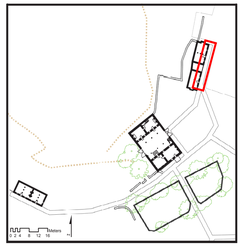
2000 — Masonry is cyclically re-pointed, with a more appropriate and historically accurate mixture and color.[11]

2003 — Masonry is cyclically re-pointed, with 2000 mixture.[12]

2006 — The interior and exterior wood surfaces were repainted, treated and repaired as needed. Boracare was used to treat all the unpainted wood on the East Cabin. Additionally, the hinges and clasps on the East Cabin doors were also fixed.[13]

2009 — Masonry is cyclically re-pointed, with variant of the 2000 mixture.[14]

Site Plan



EAST CABIN: MORPHOLOGICAL EVOLUTION

0 2.5 5 7.5 10 Feet

N

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SHEET TITLE:
EAST CABIN
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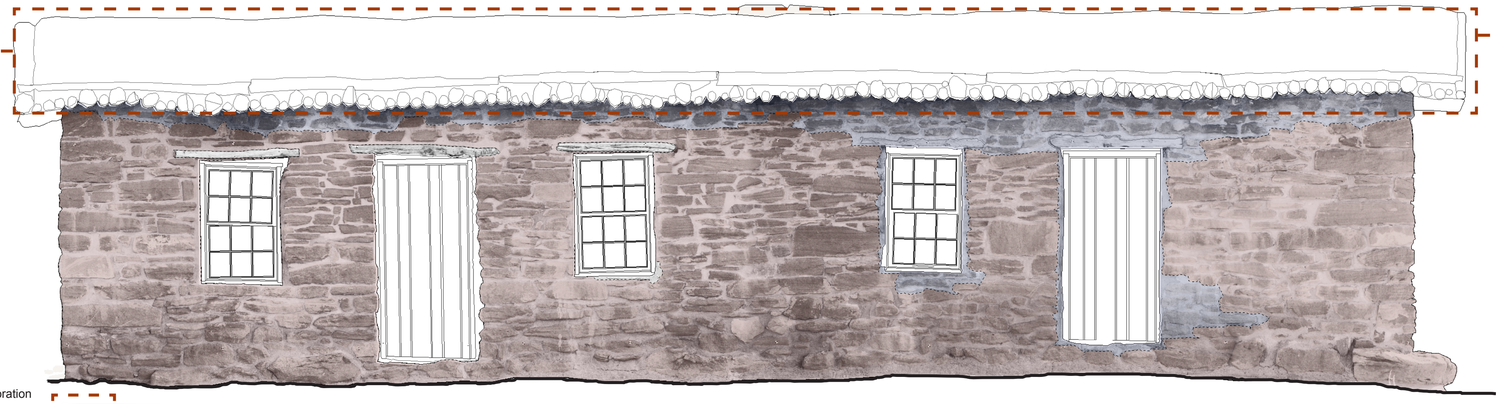
WEST CABIN: MORPHOLOGICAL EVOLUTION



1931
On July 20, 1931, the west cabin roof beam broke and part of the roof caved in, requiring repairs.[13]

1937
Roof was replaced.

1938
Roof was replaced with clay in lieu of dirt.

1941
Existing clay and cedar bark was removed from the roof by the CCC and replaced with asphalt, covered with clay.[14]

1964
Roof was cemented.

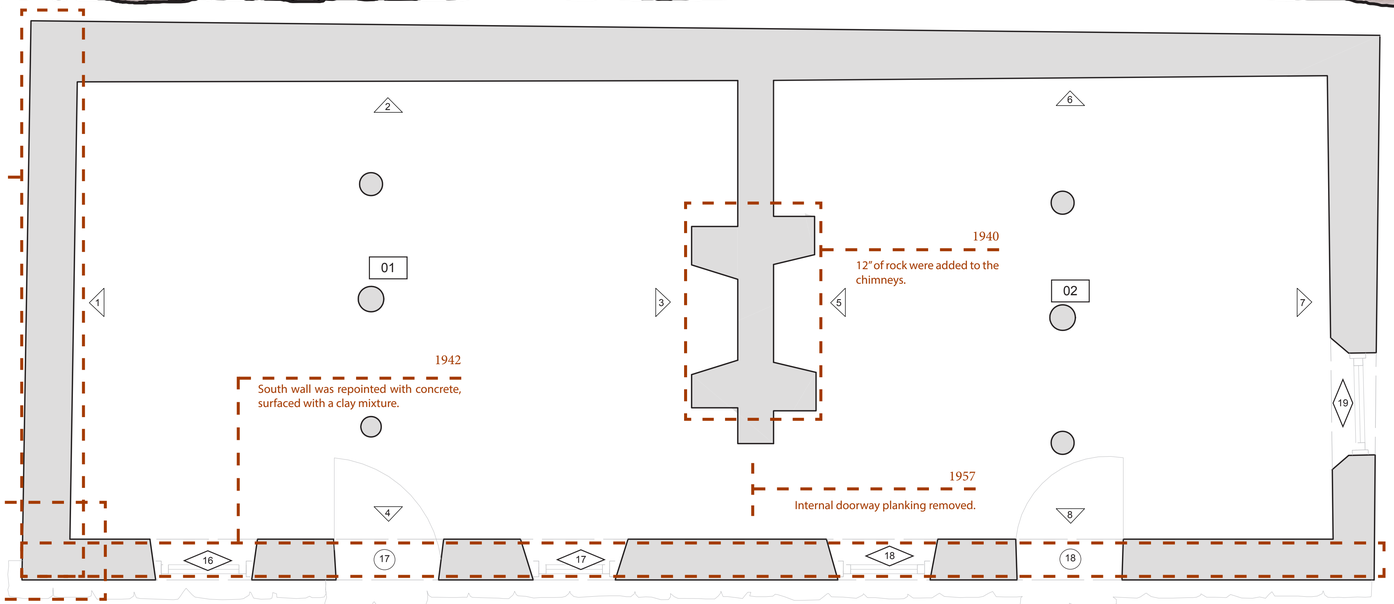
1969
Roof was replaced with new Cedar poles supports, with Plomose Aggregate placed on top of the posts covered by a layer of tar. This was covered by a layer of Chinle clay.[15]

1989
Roof was replaced with a Bentonite roof with built-in drainage system.

1995
Re-roofing campaign.

Original - 1923 Fabric

1925 Restoration



1942
Concrete footings were installed in the west wall.

1940
12" of rock were added to the chimneys.

1942
South wall was repointed with concrete, surfaced with a clay mixture.

1950
A trench was dug to expose internal and exterior foundation surrounding the sinking SW corner. The trench was filled with concrete, and posts were embedded below interior floor level to impede outward bowing of walls).

1957
Internal doorway planking removed.

1870
A two-room stone cabin was erected west of the fort site to house builders during the construction.[1]

1924
Pinkley assigned John White the task of gathering together native building materials for work on the west cabin, along with the removal of dirt and rocks from the shell of the building.

1929
Heaton rebuilt the walls to their original height, repointed, and installed window frames. Pine stringers were used to support the cedar pole roof covered with cedar bark and dirt.[2]

1937
The Grazing Service's range survey crew uses the cabin as a map room and office.

1938
Used as a photography dark room.

1947
Heaton prepared an exhibit of the Bishop Hopkins blacksmith tools in the west cabin.

1959
Stone walls of Fort, cabins, retaining walls, ponds were repointed. Walls pointed with concrete and stained with clay mix.

1971
Flood damage repairs made.

1986
Repointing completed on the exterior walls.[3]

1989
Discovered original floor of bunkhouse during process of removing floor. Covered with sand for protection before laying down new floor.[4]

1995
Masonry work on the bunkhouse by the BRCA historic preservation crew.[5]

1998
Flagstone walkways adjacent to the front side of both the East and West Cabins, which were previously inappropriately canted such that rainwater flowed toward the historic structures rather than away, were replaced with correctly built walkways.[6]

2000
Repointing of masonry.[7]

2002
Masonry is cyclically re-pointed, with a more appropriate and historically accurate mixture and color. Repainting was done with like color, by removing loose, flaking paint from the exterior and the interior by hand, scraping, and sanding.[8]

2005
Masonry is cyclically re-pointed, with variant of the 2002 mixture.[9]

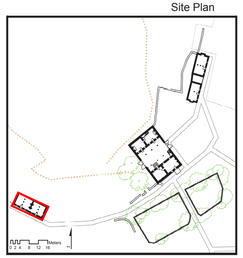
2006
The interior and exterior wood surfaces were repainted, treated and repaired as needed. Boracare was used to treat all the unpainted wood on the West Cabin.[10]

2008
Spot re-pointing was done in areas of the interior walls, especially the north wall due to excessive moisture infiltration.[11]

2009
Boracare was applied to the unpainted wood surfaces. Additional dirt was added to the West Cabin's roof.[12]

Notes:
[1] McKoy, Cultures at a Crossroads, 2000: 33.
[2] Ibid, 166.
[3] Superintendent's Annual Report, 1986.
[4] Log of Daily Events 8/25/1989- 9/14/1989 (Reroof, Stabilize, and Site Drainage Project)
[5] Superintendent's Annual Report, 1995.
[6] Superintendent's Annual Report, 1998.
[7] Superintendent's Annual Report, 2000
[8] HPMC Report: Cyclic repointing of the West Cabin (Work Order: 96444A (PISP-2002-02), 2002.
[9] HPMC Report: Cyclic repointing of the West Cabin (Work Order: 116844A (PISP-2006-01), 2006.
[10] HPMC Report: Cyclical repairs of the West Cabin's wood surfaces (Work Order: 116844A (PISP-2006-01), 2006.
[11] HPMC Report: Cyclic repointing of the West Cabin (Work Order: 855956), 2008.
[12] HPMC Report: Cyclic refinishing and minor repairs to the West Cabin (122639A/107165A (PISP-2009-004)), 2009.
[13] McKoy,166.
[14] Heaton Journal, 1941.
[15] Log of Significant Events for August. Aug. 27, 1969.

Site Plan



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