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HISTORIC STRUCTURE  
REPORT:

PHYSICAL FABRIC SECTION

LEISTER BARN

GETTYSBURG NATIONAL MILITARY  
PARK

GETTYSBURG, PENNSYLVANIA

By  
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Approved: Regional Director  
Mid-Atlantic Region

United States Department of the Interior  
National Park Service  
Office of Cultural Resource Management  
Mid-Atlantic Region

TABLE OF CONTENTS

Acknowledgements

I. Administrative Data Section.....	1
II. Introduction.....	5
III. The Photographic Record.....	9
A. General Observations.....	9
B. Specific Details.....	10
1. Gardner Photograph (1863).....	10
2. Tyson Stereoview (1866-68).....	15
3. Tipton Photograph (1881-c.1900).....	17
IV. The Existing Fabric.....	21
A. General Plan.....	21
B. Exterior.....	21
1. East Elevation.....	21
2. North Elevation.....	29
3. West Elevation.....	32
4. South Elevation.....	36
5. Roofing.....	38
6. Site.....	38
C. Interior.....	39
1. The Log Bay.....	39
2. The Threshing Floor.....	54
3. The Wagon Shed.....	62
D. Additional Evidence For The Original Shed Configuration.....	72
V. Alternatives.....	91
A. No Action.....	91

B. Preservation Maintenance.....	91
C. Partial Restoration - The Recommended Alternative.....	92
VI. Appendices	
A. LCS Form.....	99
B. HABS/HAER Drawings (1984).....	107
C. Correspondence Relating to the Proposed Restoration of the Leister Barn.....	116
D. <u>CRM</u> Article on Biaxial shakes.....	118

List of Photographs

	Page
1. Leister Farmstead (Alexander Gardner, 1863).....	3
2. East and South Elevations, 1985.....	4
3. East and South Elevations, 1863 (Alexander Gardner).....	12
4. West and South Elevations, 1866-68 (Tyson Stereoview).....	14
5. East Elevation, c. 1900 (Tipton).....	18
6. West and South Elevations, 1891 (Tipton).....	19
7. North and West Elevations, c. 1900 (Tipton).....	20
8. East Elevation (1985).....	24
9. Detail of East Elevation (1985).....	24
10. Forebay Window (1985).....	25
11. East Elevation (1985).....	26
12. Detail of Door to Threshing Floor (1985).....	26
13. Detail of East Elevation, South Bay (1985).....	28
14. North Elevation (1985).....	30
15. Detail of North Elevation Door (1985).....	30
16. North Elevation Hay Loft Door (1985).....	31
17. West Elevation (1985).....	33
18. West Elevation, Threshing Floor Doors (1985).....	33
19. West Elevation, North Threshing Floor Jamb (1985).....	34
20. West Elevation, South Threshing Floor Jamb (1985).....	34
21. South Elevation (1985).....	37
22. Western Elevation, Log Bay Exterior Door (1985).....	43

23.	South Elevation, Log Bay Door (1985).....	43
24.	Detail of Logs of West Log Bay Exterior (1985).....	46
25.	Enlargement of William Patterson Barn by Tipton c. 1880.....	47
26.	Interior of Overshoot (1984).....	51
27.	Detail of Exterior South Support Post of Overshoot (1985).....	52
28.	Detail of Interior, North Support Post of Overshoot (1984).....	53
29.	North Elevation of Overshoot, South Tie Beam (1984).....	55
30.	Overshoot Floor Joists, 1985.....	55
31.	Threshing Floor bent and East Girts (1984).....	57
32.	West Elevation of Threshing Floor and Log Bay (1985).....	57
33.	Threshing Floor Bent, West Post at original Rafter Plate (1985).....	59
34.	Threshing Floor Bent, East Primary Post at Level of Original Rafter Plate (1984).....	59
35.	West Elevation of South Bay, Upper Girt (1985).....	66
36.	Threshing Floor Bent, Upper Tie Beam (1985).....	66
37.	Threshing Floor Bent, Upper Tie Beam Brace (1985).....	67
38.	East Elevation, South Bay, Upper Girt (1984).....	69
39.	East Post of Threshing Floor Bent (1984).....	69
40.	Original Hip Rafter Seat, East Primary Post of Threshing Floor Bent (1985).....	73
41.	Culp Barn Hip Rafter Framing (1985).....	73
42.	North Elevation of Threshing Floor Bent, Ladder Detail (1984).....	74
43.	South Bay, South Bent Upper Brace (1985).....	77
44.	South Bay, South Bent, Lower East Extension Tie Beam (1985).....	78

45. Central Overshoot Floor Joist (1984).....80

46. South and East Elevations of Threshing  
Floor Bent, East Primary Post (1985).....85

\*Unless otherwise identified, all photographs were taken by the author. The historic photographs are in the Library of Congress; Gettysburg NMP retains negatives and copies.

List of Illustrations

	<u>Page</u>
PLAN OF BARN.....	22
1. Detail sketch of Forebay window.....	25
2. North and West Elevations without siding (HABS/HAER, 1984).....	40
3. Sketch of Existing Forebay Frame.....	51
4. Detail Sketch of Overshoot Support Post (South).....	52
5. Detail Sketch of Overshoot Support Post (North).....	53
6. North Elevation of Threshing Floor Bent Framing (After HABS/HAER, 1984).....	61
7. South Elevation of South Bent (After HABS/HAER, 1984).....	64
8. Detail Sketch of Original Rafter Tie.....	67
9. Suggested Original Use of Reused Overshoot Joist.....	80
10. Sketch Plan and Elevation of Original South Shed Fabric.....	83
11. Sketch of Proposed Restoration, North Elevation.....	95
12. Sketch of Proposed Restoration, West Elevation.....	96
13. Proposed handscape Restoration.....	97

## ACKNOWLEDGMENTS

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The manuscript has been reviewed by John Bond, ARD, CRM, Regional Architect, Henry Magaziner, Historic Architect John Ingle, and by Historian Georg; their additions and suggestions have been invaluable. Billie Huges has had the responsibility of typing and correcting the various and sundry drafts, a tiring task well done. Although many people have contributed to this document, errors in fact or conjecture remain the responsibility of the author.

I. ADMINISTRATIVE DATA SECTION

A. Vital Structural Data

Title: Leister Barn

Number: SN-74

Location: Gettysburg National Military Park, Adams County,  
Pennsylvania

Treatment

Period: 1863

Order of

Significance: The building was used as a signal station and temporary hospital during the Battle of Gettysburg and the adjacent Leister House was used as Meade's Headquarter's for part of the Battle. Because of this association, the structure is entered on the National Register and considered to be of National significance

B. PROPOSED SCOPE OF WORK ON THE STRUCTURE

It is proposed that the exterior of the barn be restored to its appearance just before the Battle in July, 1863. The interior will not be restored, but continue to be used for Park storage or, possibly, placed on an agricultural special use permit.

All work will be done by the Park Preservation Crew under direction of the Regional Historical Architect. Funding is available from 1985-6 cyclic preservation sources.

C. PROVISION FOR OPERATING THE STRUCTURE

The building will be maintained by the Park's Preservation Crew on a regular basis as outlined in an HSPG in preparation. Interpretation of the structure is on-going.

D. ANNOTATION OF ALL RELATED DOCUMENTS

- u Historic Structure Report, Part I: Leister Barn and House, November 1959
- o Historic Structure Report, Part I: Leister House Bake Oven, August, 1960.
- e Furnishing Plan for Leister House: April 1974
- s Cultural Resources Management Plan: October 1981
- f Draft General Management Plan and Environmental Assessment: June 1982
- d General Management Plan: December 1982
- Interpretive Prospectus: November 1983
- A Resource Management Plan: June 1984



PHOTOGRAPH 1

Leister farmstead from the southeast taken by Alexander Gardner shortly after the Battle.



PHOTOGRAPH 2

Leister Barn, south and east elevations today. The photograph is taken from the same position as Alexander Gardner's in 1863.

## II. INTRODUCTION

### A. Historic Overview

The Leister farm, situated on Taneytown Road in Cumberland Township, was the wartime home of Lydia Leister, a widowed mother. The land was first owned by Thomas Noland who sold it to Henry Bishop, Sr., around the year 1840. Bishop's farm, small even by 1800s standards, encompassed 10 acres of land, a 1 1/2-story log house, small log barn, and several small outbuildings. Bishop lived on the farm until 1861 when he sold it to Mrs. Leister for \$900.00. She resided on the farm during the Battle of Gettysburg and her home was used by General George Meade, commander of the Union Army of the Potomac, as his headquarters. The location of the buildings was ideal for quick communications and was therefore used as a signal station. The house was the scene of the council of war on July 2 when the Union commanders decided to stay on the field and fight out the battle. Doubtless, the buildings were also used as a temporary field hospital during the battle. Mrs. Leister had left the farm on the evening of July 1 and when she returned several days later, she found the farm in literal ruins. Dead horses littered the yard, the crops were trampled, and both the barn and house damaged by shell fire and troops who scrounged the siding for firewood and grave markers. Despite the devastation, she was able to salvage her home and

later recoup her losses. The house was repaired within a few weeks and the barn was also repaired with new siding. After the war, in 1868, Mrs. Leister expanded the farm with the purchase of an adjoining tract of land. This tract bordered the southern portion of her boundary and was purchased from Peter Frey for \$900.00. In 1874, a two-story addition was put on the east gable of the house; the barn was also added onto during this period, in that the roof was raised and the lean-to wagon shed incorporated into the barn.

Lydia Leister continued living on the farm until 1888 when age and failing health forced her to move into Gettysburg with a family member. The farm was purchased in May of the same year for \$3,000.00 by the Gettysburg Battlefield Memorial Association who removed the two-story gable addition on the house and turned over the farm to tenant farmers or leasees. The house was continually lived in until the 1920s and regular maintenance performed by the farmers.

During the War Department administration of the farm 1895-1933), the house and barn were both reroofed (1913). Around this time, a loft and interior flooring also were added to the interior of the barn to accommodate storage. The National Park Service took over administration of the farm in 1933 and immediately closed the buildings to tenant farmers. The house was used as an exhibit and the barn was used for storage of

park equipment. In 1961, the foundation of the house required extensive stabilization work and it was excavated, repointed, and reinforced with concrete. The house was fully restored in 1966 by the National Park Service.

B. Discussion

It has been the intent of the government since acquisition of the Leister property in 1895 to restore and interpret the house, barn, and grounds to their 1863 appearance. Their restoration and interpretation has changed since that time as new archival material and research has been made available. As a case-in-point, Frederick Tilberg's 1961 Study (Historic Structures Report, Leister House & Farm Buildings) called for the "preservation of the barn to its war time appearance and was based on the assumption that the south lean-to shed had been an addition to the existing three bay barn. Subsequently, it has been ascertained that the Civil War barn was, in fact, two bays with the appended shed addition and a roof of lower and different configuration. If the previous restoration efforts concerning the house and immediate grounds are to retain historic validity they should be viewed within the context of the properly restored, and therefore significantly smaller, barn.

From the architectural standpoint the public also deserves a more realistically restored barn. People have accepted the concept of the Pennsylvania barn overshadowing the house because of its grand scale and fine construction; the Leister structure, as built, stands as testimony to the more simple vernacular barns of the period of settlement. Contrasted with the grand buildings of the second half of the 19th century as demonstrated so well by the Trostle and Bushman barns, Lydia Leister's small structures are mute testimony to a rural lifestyle that was blown away by the Industrial Revolution and the winds of war. We owe the future this glimpse of the past.

The following document is based on the premise consistent with the LCS designation and the GMP decision that Leister Barn should be restored. As the restoration will entail the removal and reuse of much fabric, it has been necessary to examine and record the structure, as it now stands, in elaborate detail. If this documentation is tedious, and the reading difficult, the author apologizes.

### III. THE PHOTOGRAPHIC RECORD

#### A. GENERAL OBSERVATIONS

The Leister Barn is adjacent to Meade's Headquarters, the Leister Farm House, and thus was photographed many times in the years following the Battle of Gettysburg, in 1863. Study of the barn's physical fabric has been aided by several of the photographs: mainly, the Alexander Gardner views of 1863 (Photographs 1 and 3), the Tyson Stereoview of 1866-68 (Photograph 4), and the Tipton photographs of the farmstead of 1882 (south and west elevation), and c.1900 (east elevation).

The Gardner photographs were taken shortly after the battle, as attested to by the still unburied carcasses of horses in his farmstead view. The close-up of the barn and chicken house reveals the full extent of the damage to the large structure -- although most of the siding had been removed during the fighting, the structural framing was intact. Tyson's view of several years later reveals a reroofed and reclad building, but the configuration is the same as that recorded by Gardner: two bays to the north with a south lean-to shed. Tipton's records indicate that by April 1882 the shed had been removed and replaced by a full height addition with a ridge roof. Careful study of the Tipton photograph also reveals that the roof of the older bays had been raised and the pitch steepened as part of the construction of the new south bay.

## B. SPECIFIC DETAILS

### 1. GARDNER PHOTOGRAPHS

#### a. Roofing

The roofing on the higher barn bays is shown as drawn shakes, +12" exposure, lapped both vertically and horizontally across the course. (see Appendix D). The shed roof, however, appears to have been covered with drawn shakes laid in the "normal" manner -- i.e., side edges butted and with +12" vertical exposure. The ridge was combed toward the east, although the roofing adjacent to the hip rafter between the shed roof and main roof appears to have been combed toward the southwest. Photograph 3 also reveals that the roof pitch was flatter than that which exists today.

#### b. Siding

Less than two dozen siding boards (excluding the gable) were left on the two elevations recorded by Gardner. Study of these reveals the following:

1. They were white-washed or painted;
2. They had no battens; and,
3. They were not uniform in width and several did not have parallel edges, i.e., were wedge-form. Several siding boards on the west elevation, north bay, and north gable still retain this characteristic.

c. Openings

The visible exposed structural framing of the shed addition reveals that there was but a single exterior opening on the south and east elevations, a door at the southeast corner. The clearly visible continuous horizontal nailer on the south bent, as well as the five posts and two full-height diagonal braces, precluded openings to the south. The east wall of the shed had a framed door opening formed by the south corner post and a jamb post to the north which was let into the girt above. The door is missing in Gardner's view, but the upper drive pintle is possibly seen.

A narrow opening on the east elevation, center bay, is also visible, more so because the adjacent siding remains. Both jamb posts are visible, as is the girt which headed the doorway.

The plank jamb of the east elevation log stalls doorway is just visible. No framing for an adjacent window is seen, although the partial absence of logs at that level suggests that an opening was present originally. The door on the north end of the forebay, in place after the battle, retained two battens and three of its vertical boards, one quite wide and with a square-cut



PHOTOGRAPH 3

Leister Barn viewed from the south and east shortly after the Battle, July, 1863.  
Photographed by Alexander Gardner,

top, the other two narrower and with V-notched top edges.

d. Log Walls

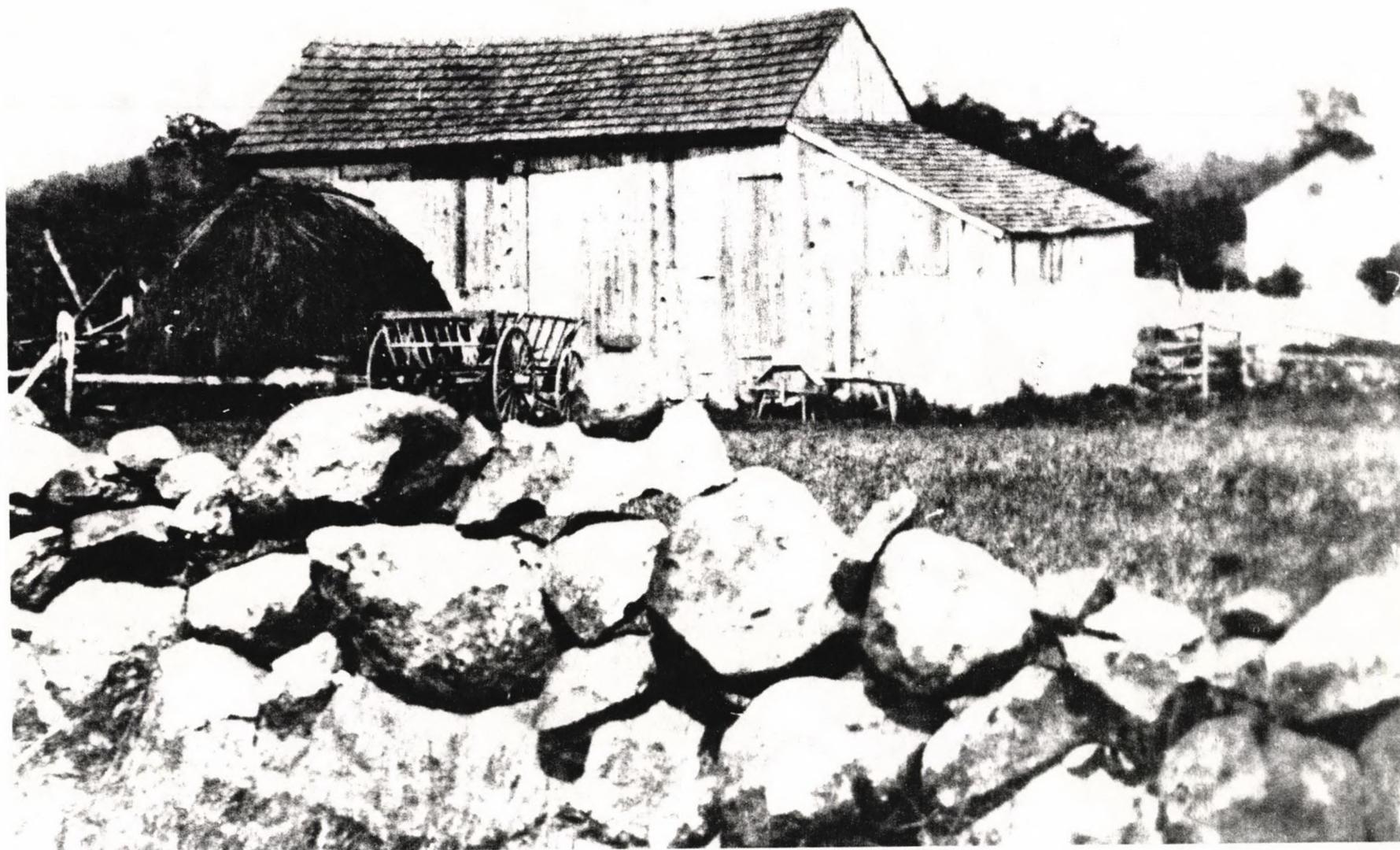
The log walls of the east elevation, north bay, retained only part of their chinking at the time of the Gardner view. What is evident is white-washed. The north elevation logs visible through the east doorway have no chinking.

e. Fencing

The post-war view indicates that the barn had an eastern barnyard formed by both post and rail and wall and rider fences. The stone wall continued south of the barn, interrupted by a section of post and rail fence, possibly serving as a gate, which was intersected by another post and rail fence extending westward. There was no gate adjacent to the forebay; the north forebay door served in that function.

f. Trees

East of the barnyard many fruit trees with white-washed trunks are visible. Surely an orchard, they were laid out in two groupings: those nearest the



14

PHOTOGRAPH 4

Leister Barn, west and south elevations, taken shortly after the barn was re-clad, restoring the Battle damage. Photograph by Tyson c. 1866-68.

barn appear not to have been apples, but possibly pears or cherries.

2. TYSON STEREOVIEW: 1866-68

This photograph is useful because it shows the west and south elevations in sharp focus with a new covering of siding, but reveals that the barn's original overall appearance had not been altered. Several general observations can be made:

a. Roofing:

The roof had not been raised in this view, and still retains a flatter pitch than that of the existing roof. The original biaxially tapered shakes on the ridge roof remain, although the shed roof appears to have been recovered.

b. Siding:

Although some of the original white-washed boards remain (particularly on the south gable, west elevation of the shed adjacent to the south leaf of the threshing floor doors, several on the west elevation of the shed, and on the threshing floor doors), the rest of the siding has been replaced. It is interesting to note that the new siding is tight, battenless, and unpainted, perhaps allowing for a season or two of

shrinkage and weathering before paint was to be applied.

The visible continuous jointing of the south and west elevation siding on the shed, midway up the vertical face, is important because it locates the horizontal tie beam and girt serving as nailers. A nailer was seen in the south elevation framing in the Gardner View, and one of the bevelled mortises for the west elevation member still remains in the threshing floor corner post adjacent to the threshing floor doors, although the nailer was removed by 1882 along with the shed (Photograph 4). The presence of the unseen nailers in this view indicates that these elements and the adjacent posts of the shed framing were not changed after the war, but remained until the shed was removed c. 1880. Such was probably the case with the remainder of the frame.

c. Openings:

The Tyson view, like Gardner's, shows no openings on the south elevation and only the threshing floor doors on the west. Note the quichet (personnel door) in the south leaf of the larger doors. Hung from strap hinges, it appears to have been made from only two boards, one of which (as the adjacent jamb board) is

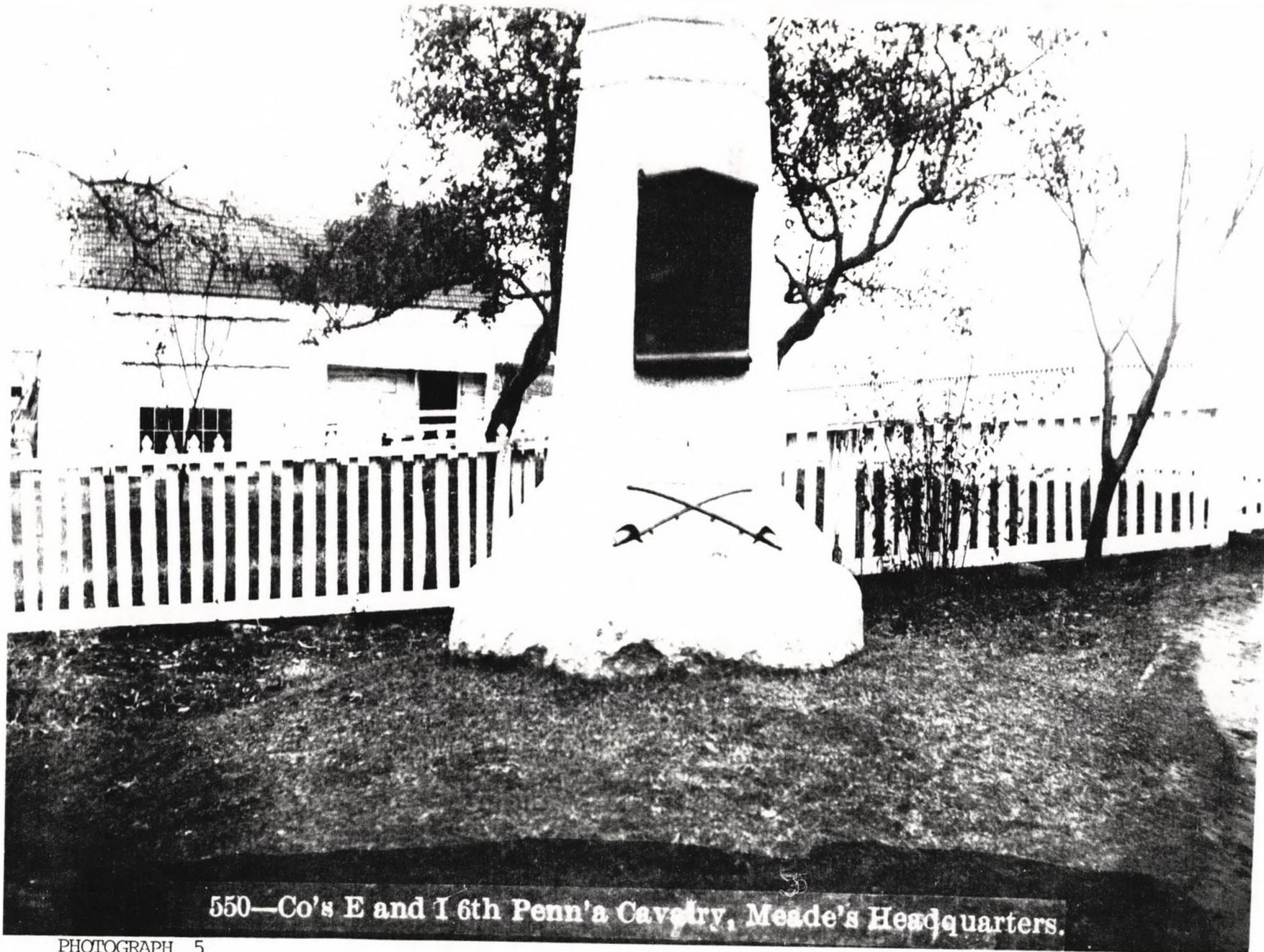
white-washed indicating that it and the quichet survived the battle.

d. Fencing:

The fencing pattern adjacent to the barn appears not to have changed: two units of post and rail fence extend outward (east) from the SE corner of the shed to meet a north/south wall and rider fence. Together, they enclosed an eastern barnyard.

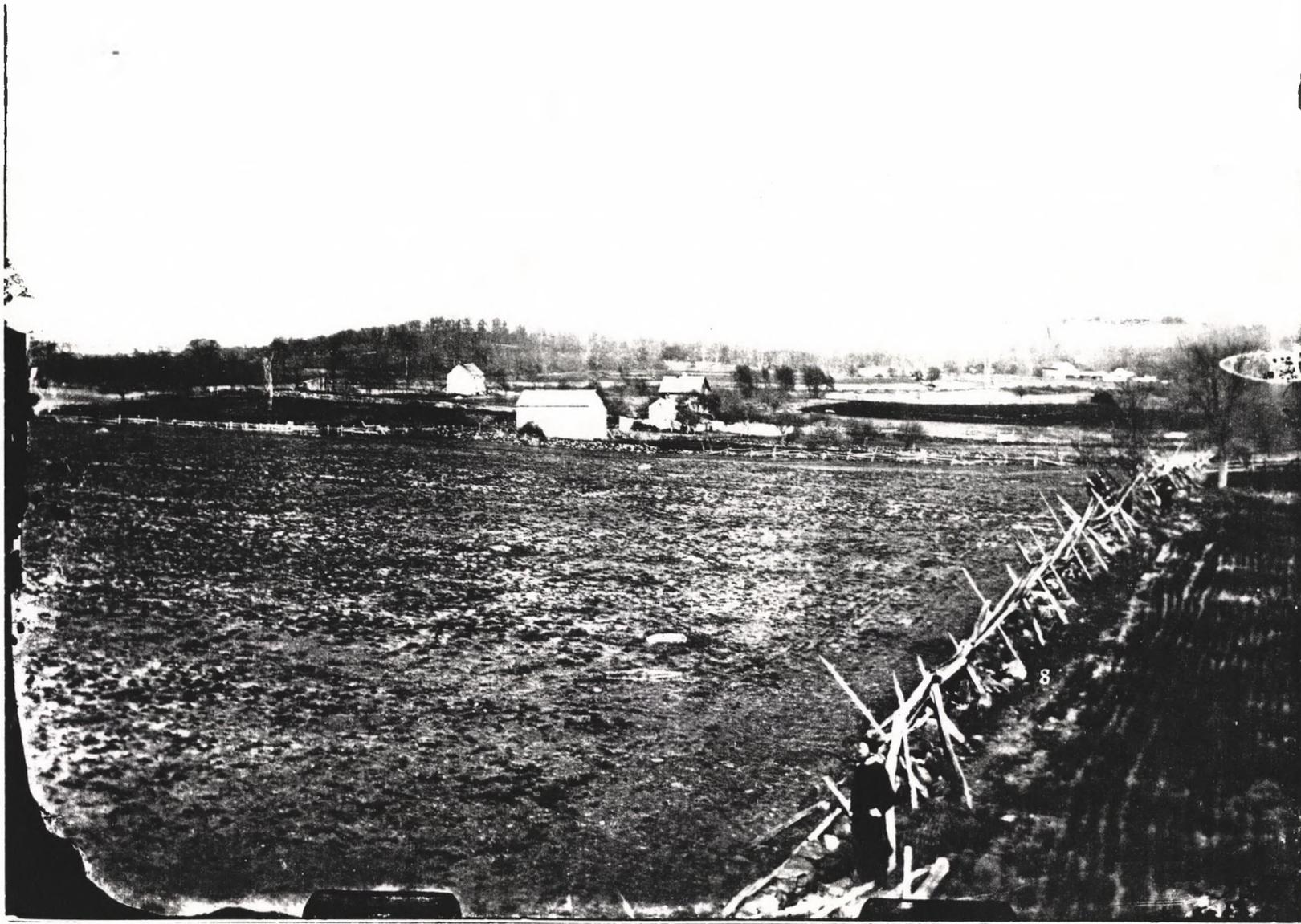
3. TIPTON PHOTOGRAPHS: 1882 and c.1900

The Tipton views are important for they reveal the barn essentially as it stands today. The shed addition had been removed and replaced with an addition of equal area, but with a gable end and ridge roof. The roof of the original full-height barn had also been raised, but higher at the ridge than at the eaves, thereby giving the roof the steeper pitch it retains to this day. The roofing material remained biaxially tapered shakes. The plant growth along the visible stone foundation on the west and south sides of the southern addition (1882) and the stacked lumber and boxes on the south indicate that no doors were added initially to those sides. The Tipton photograph of c.1900 reveals that the sash adjacent to the door under the



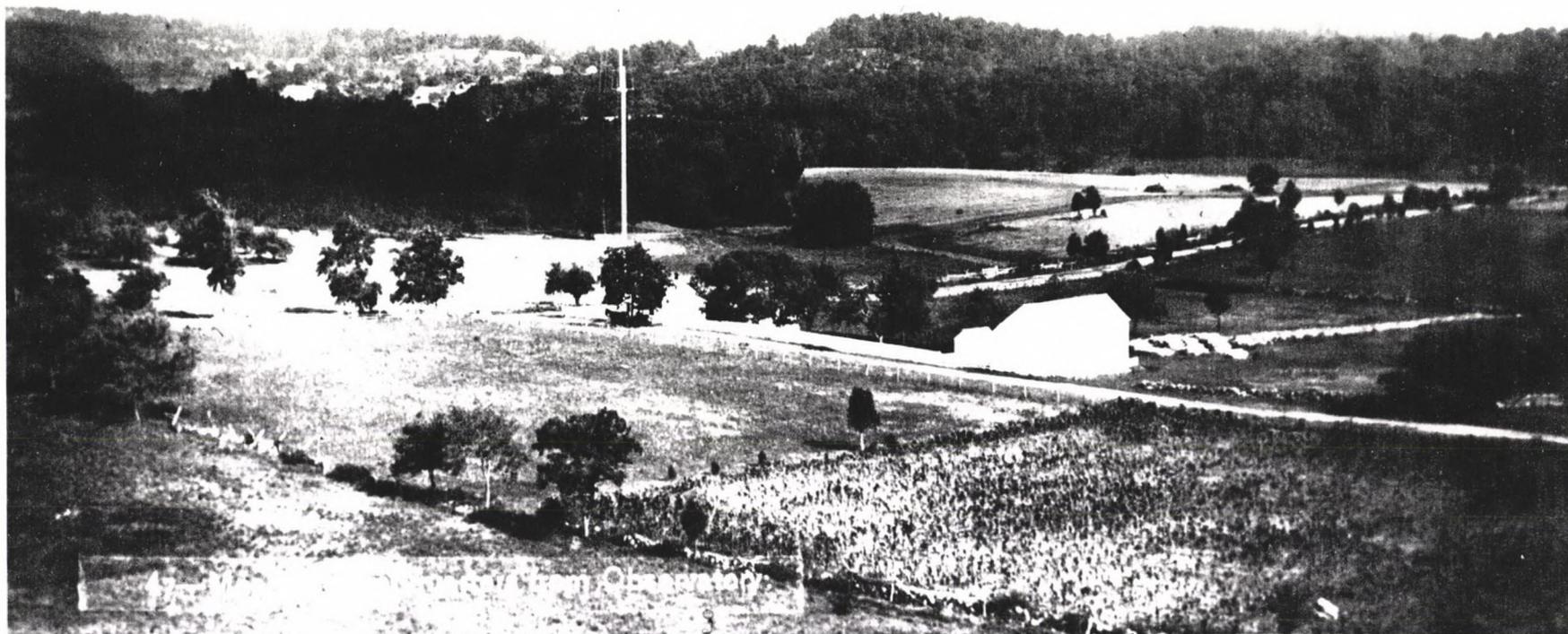
PHOTOGRAPH 5

Leister Barn ,East Elevation. Photograph by Tipton c. 1900.



PHOTOGRAPH 6

Leister Farm from the west. Tipton photograph of April 1882.



PHOTOGRAPH 7

Leister House and Barn from Zeigler's Grove Observatory. Photo by Tipton, C.1900.

forebay had not yet been installed and that the smaller opening was shuttered. The fencing and wall pattern remains the same as that shown in the earlier photographs, and the ragged orchard first viewed in the Gardner document appears reestablished to its original extent.

#### IV. EXISTING FABRIC

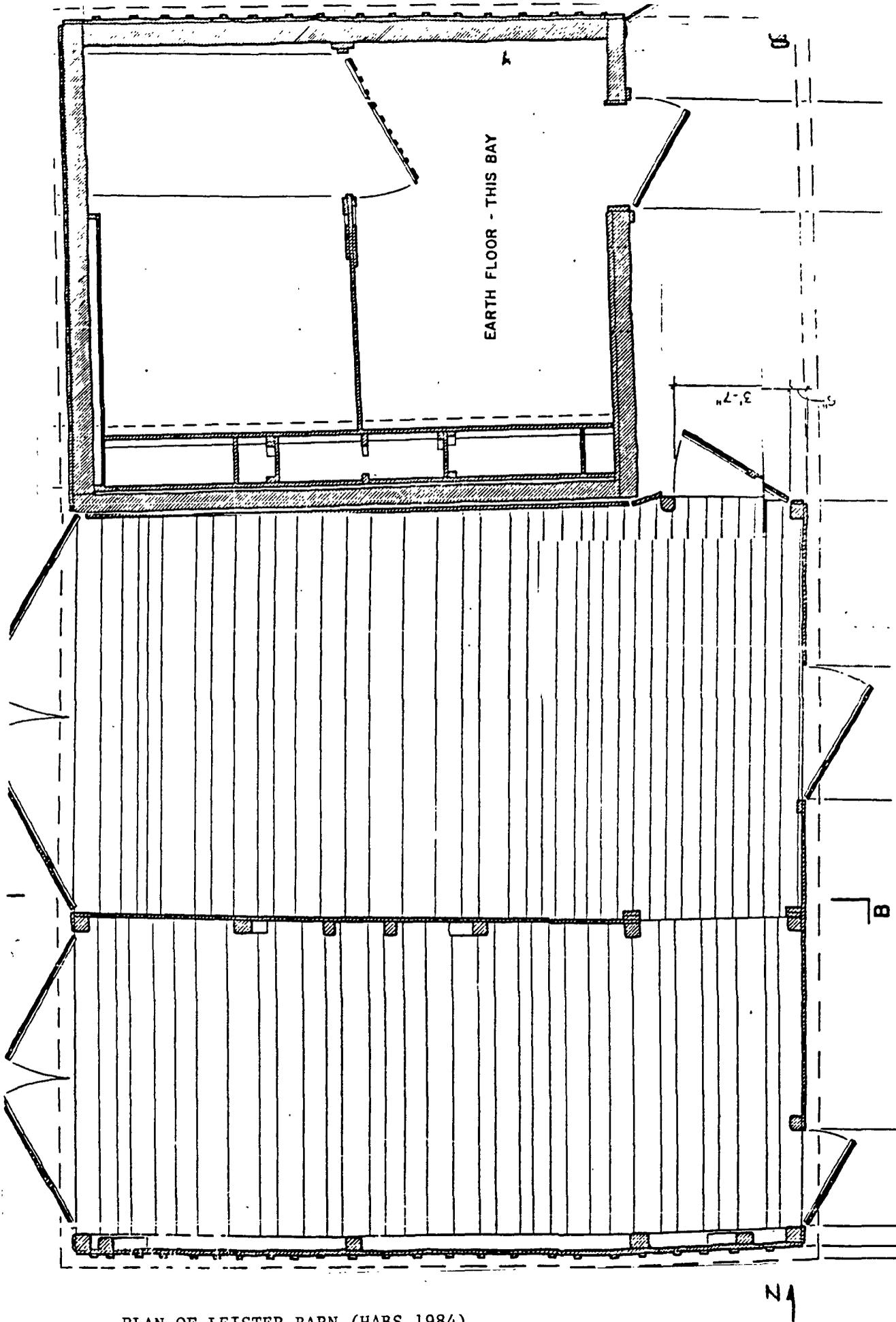
##### A. GENERAL PLAN

The Leister Barn is sited some 60 yards west of the Leister House and oriented with its long axis north/south and perpendicular to the house. Its overall dimensions are 37'8"x22'11", divided into three asymmetrical bays by a northern log portion with superimposed frame overshoot and by two post and frame bents to the south. The end bays have frame storage lofts, and the northern log bay has stalls and mangers. Based on their present appearance and for this discussion, the bays from south to north shall be considered the wagon shed, threshing floor, and stalls.

##### B. EXISTING FABRIC: EXTERIOR

###### 1. EAST ELEVATION

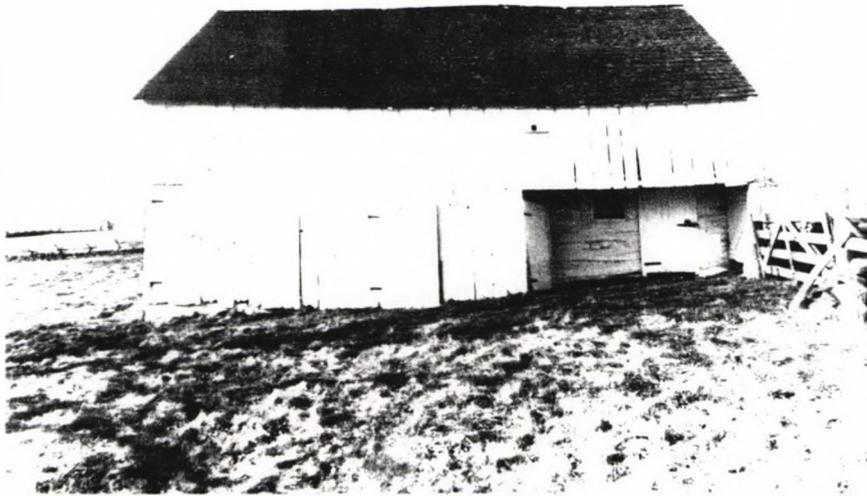
A major feature of the east elevation is the 5'5" high (at the eave) overshoot forming a protected 5' deep, 6' 1/2" high, and 14' long forebay at the north end of the barn. The east wall of the log bay of the barn is protected by



PLAN OF LEISTER BARN (HABS, 1984)

the overshoot and penetrated by a modern board and batten door (circular sawn matched boards, wire nailed, and hung from 1/4" bar steel, strap hinges on the circular sawn cut-nailed jambs). A 6 light, non-functional sash was installed in the logwall after original construction, having replaced the narrowed shutter seen in the Tipton view (Photographs 5 and 10 and Illustration 1). The north end of the forebay has a door (four 1"X12", circular sawn boards, cut-nailed) hung from machine made strap hinges; the door, a poor substitute for that seen in the Gardner photograph, makes no sense when located adjacent to a fence gate which provides equal access to the barnyard. A door opening to the threshing floor is located at the south end of the forebay. Constructed of vertically sawn boards, clinched to the battens with wrought nails, the door is hung on wrought drive pintles with wrought strap hinges and has all the characteristics expected of an original (Photograph 12).

The central portion of the east elevation of the threshing floor has a single door, 4'0" wide, and although 6'5" above existing exterior grade it is but 5'2" above the existing interior floor. The door is made of four 1"X12", circular sawn boards, cut-nailed, and hung by two 1/4" modern bar-stock strap hinges, bolted to the battens and to a single jamb to the south. The door is clearly of 20th



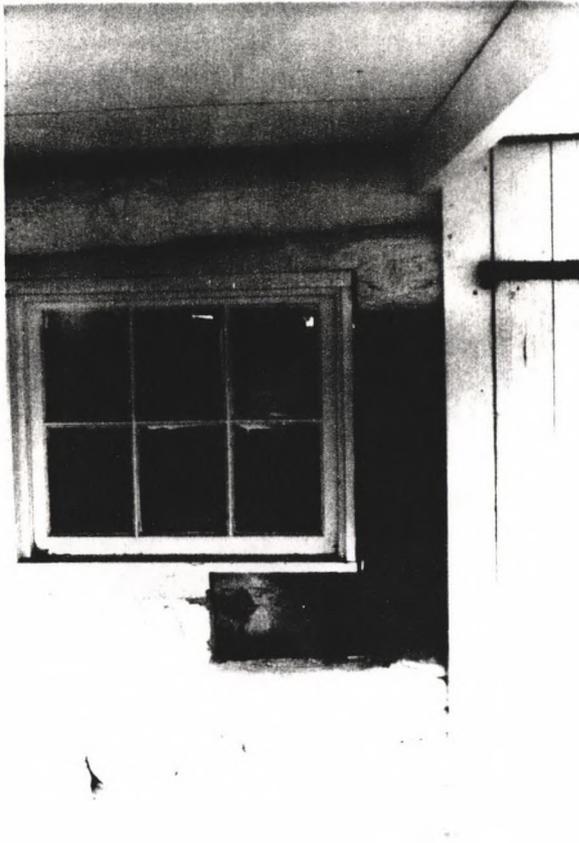
PHOTOGRAPH 8

Leister Barn, Existing East Elevation



PHOTOGRAPH 9

Leister Barn: Detail of east elevation, north end



PHOTOGRAPH 10

LEISTER BARN, EAST ELEVATION, FOREBAY  
WINDOW AND DOOR TO STALLS.

NOTE AREA REVEALED WHEN PLANKS WERE  
REMOVED BETWEEN EXISTING WINDOW AND DOOR.

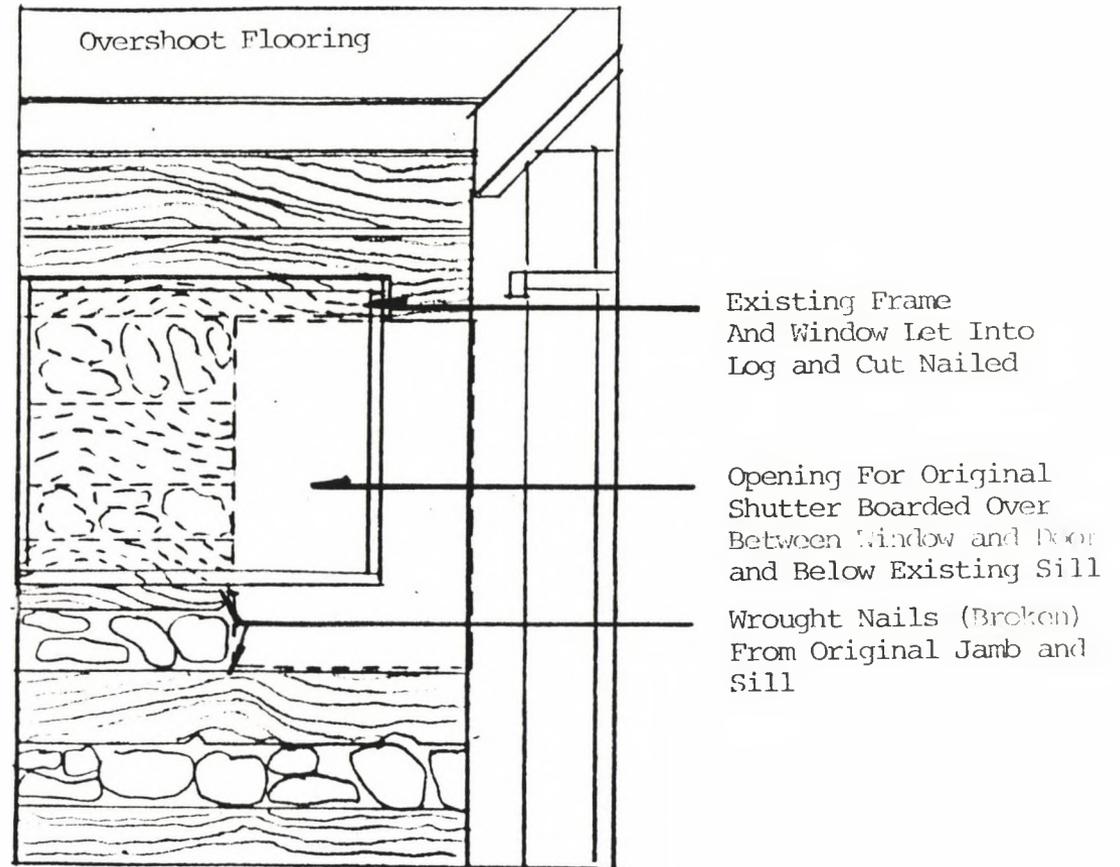
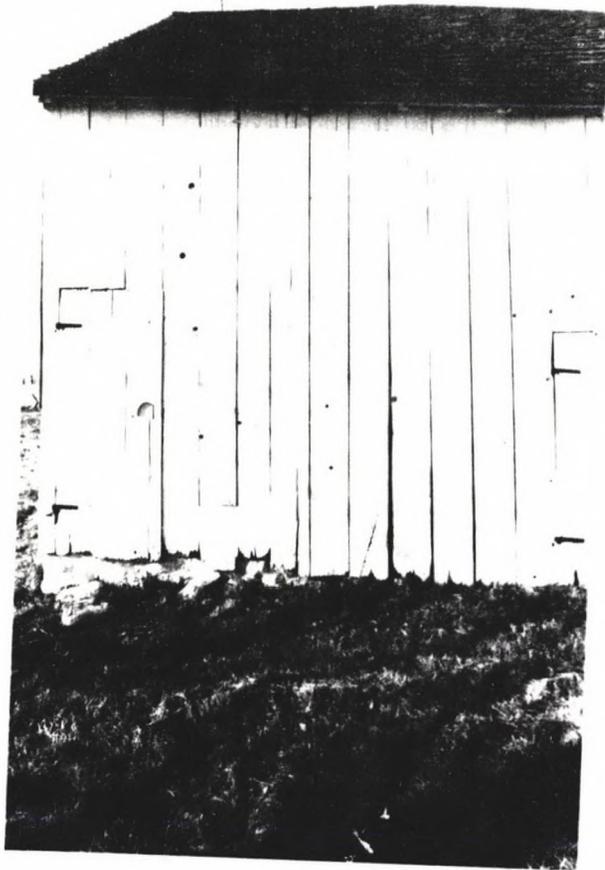


ILLUSTRATION 1

DETAIL SKETCH OF PHOTOGRAPH AT LEFT.  
THE EXISTING WINDOW AND FRAME WERE  
LET INTO THE LOG SILL AND HEAD AFTER  
1900, REPLACING THE ORIGINAL SHUTTER.



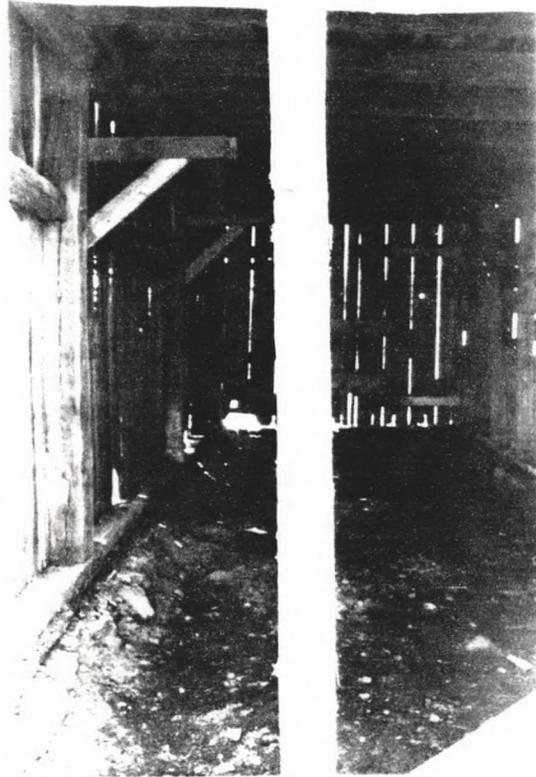
PHOTOGRAPH 11

LEISTER BARN, EAST ELEVATION, SOUTH END.



PHOTOGRAPH 12

DETAIL OF THE INTERIOR OF THE DOOR FROM  
THE FOREBAY TO THE THRESHING FLOOR. ALL  
THE CLINCHED NAILS ARE WROUGHT.



PHOTOGRAPH 13

EAST ELEVATION OF SOUTH BAY AFTER REMOVAL OF SIDING. THE CENTER STUD SUPPORTS THE GIRT ABOVE AND HAS THREE VESTIGIAL RABBETS. THE UPPER IS AT THE SAME HEIGHT AS ONE ON THE THRESHING FLOOR BENT, EAST POST, EXTERIOR AND APPEARS TO HAVE HELD A NAILER FOR ORIGINAL SIDING. THE TWO LOWER CUTS ON THE EAST APPEAR TO HAVE BEEN TO HOUSE DOOR BATTENS, BUT WERE NEVER USED AS THE DOOR WAS MOUNTED ON THE POST TO THE SOUTH.

century construction and placement; the Gardner photograph showed the original door to have been more narrow than this and to have had jambs on both sides. The bevelled laps which received the upper ends of the original jambs have cut off wrought nails still in place, and are evident over and adjacent to the existing door head and define the placement and width of the original door.

The door opening in the south bay is directly adjacent, and tied, to the southeast cornerpost. The door is 7'0" high and 2'11" wide, opening just above the stone foundation. Constructed of three 5/4"x12" boards, vertically sawn and cut-nailed to the battens, it is hung also on modern 1/4" bar stock hinges. The exterior surface of the door does, however, reveal the raised and uneroded profiles of earlier wrought hinges. This suggests that this door, if not original, is early (1866-68) and has been subsequently rehung on modern hinges. The opening, framed by the corner post and a stud to the north, appears to be the same as revealed by Gardner (Photograph 3).

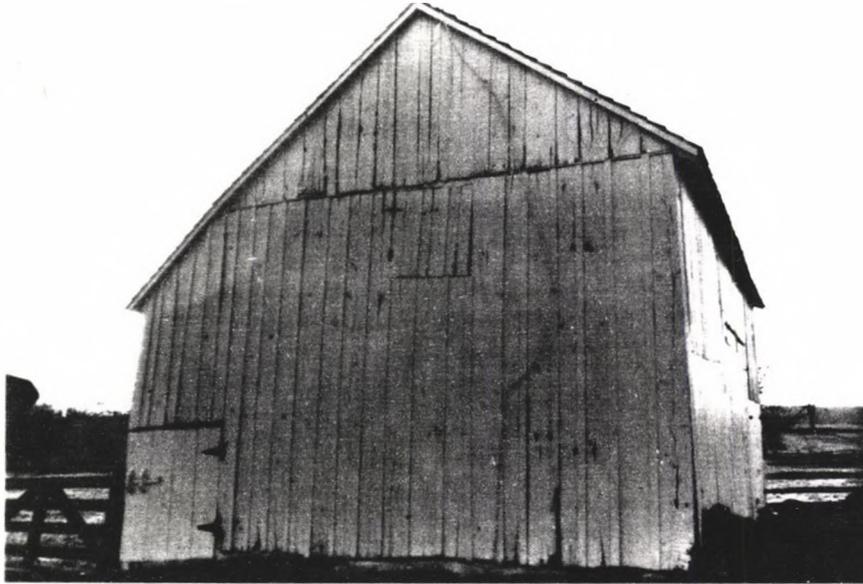
The siding on the east elevation is quite variable indicating long-term replacement and repair. The southernmost siding and that covering the overshoot is mostly circular sawn; that adjacent to the threshing floor is vertically

sawn and slightly thicker: 15/16"-1 1/8" as opposed to 7/8" for the circular sawn planks. All the siding is oak, mostly red oak (Quercus rubra), battenless, and secured with cut nails. Most of the sawn siding cannot predate the rehabilitation of the barn c.1880 as it extends from grade to eave, and the eave was raised some 2' in that time period. Several of the vertically sawn boards are, however, pieced and appear to date to the 1866-68 re-siding of the structure as seen in the Tyson stereoview.

The rough stone, mortared foundation supporting the sill plates is exposed for only approximately 10 lineal feet at the southern end. This is due to an apparent increase in grade since construction; grade is, in fact, above the level of the sill plates of the south bay, probably the cause of most of the deterioration of existing fabric.

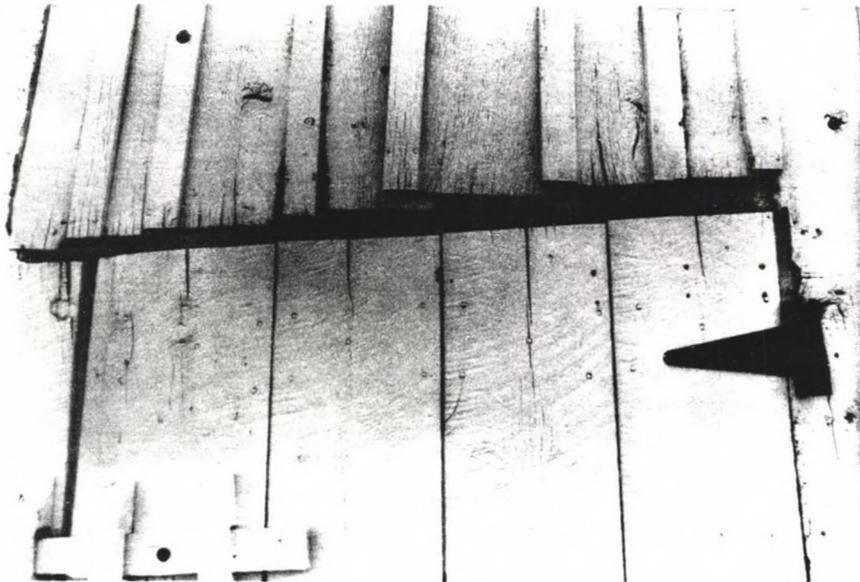
## 2. NORTH ELEVATION

The north elevation has but two exterior openings: the door to the forebay previously discussed, and a shuttered loft door centered on the ridge just below the horizontal line defined by the eaves. The loft shutter is made of three 1"x12", circular-sawn boards, cut nailed to the battens and hung from a machine-made strap hinge and an apparently reused wrought, H-form cabinet hinge. Because



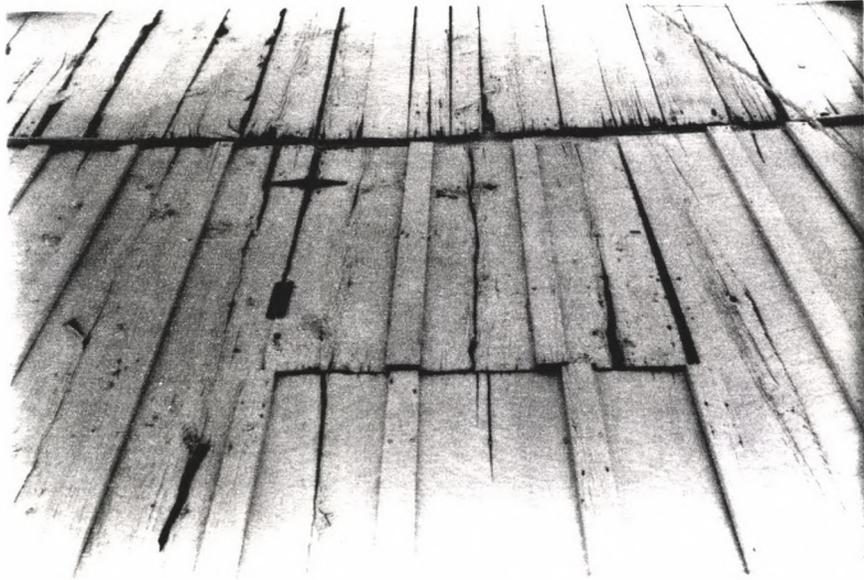
PHOTOGRAPH 14

Leister Barn Existing North Elevation



PHOTOGRAPH 15

Leister Barn, North Elevation: Detail of Door To Forebay



PHOTOGRAPH 16

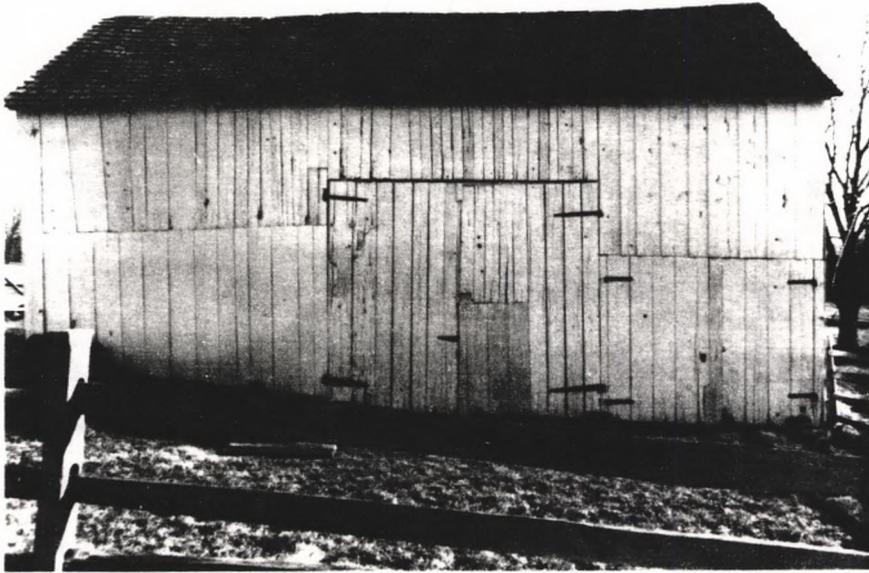
Leister Barn, North Elevation: Detail of hay loft door.

of its placement providing access to a permanent loft which was not constructed until this century, and because it is cut into siding installed after the roof was raised c.1880, it is doubtful that this opening is original. All of the north elevation boards below the line projected between the eaves have circular sawn, cut-nailed battens, and appear to date to the 1880 alterations. Those on the gable are random and wedge shaped (i.e. the boards taper longitudinally) and have earlier nails and nailholes, indicating that they are reused original siding or date to the 1866-68 rehabilitation of the barn.

The boards covering the log walls are cut and wire nailed to 1"x4"-6" nailers cut-nailed to the logs, an attempt dating to the 1880 alterations to provide a more even nailing surface. Many broken nails in the log exteriors indicate that siding was originally applied directly to the logs.

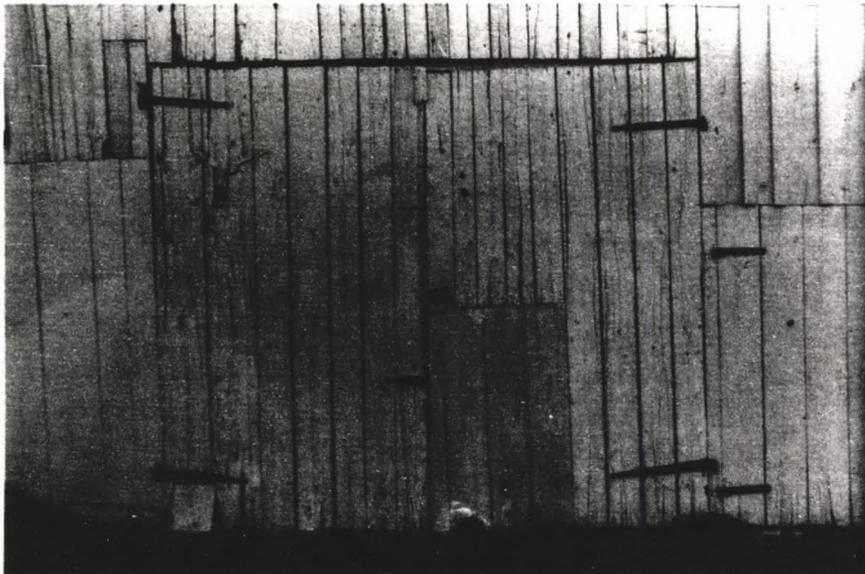
### 3. WEST ELEVATION

The west elevation exterior is divided into three bays: the northern bay siding covers the internal log frame and now has no existing exterior openings; the central bay is defined by the large (10'3" high X 12' 3 1/2" wide) threshing floor door pair that extend from grade to within four feet of the eave; the southernmost bay has a pair of



PHOTOGRAPH 17

Leister Barn, Existing West Elevation



PHOTOGRAPH 18

Leister Barn, West Elevation: Detail of threshing floor doors



PHOTOGRAPH 19

Leister Barn, West Elevation: Detail  
of west jamb of threshing floor doors



PHOTOGRAPH 20

Leister Barn, West Elevation: Detail of  
East Jamb of threshing floor doors and  
west jamb of carriage shed doors.

smaller wagon doors (7'7 1/2" high by 9'1" wide). The central doors show evidence of long use: wrought strap hinges hung from wrought drive pintles; vertically sawn boards deeply eroded by exposure to the elements; and a lack of battens. Without question, these doors predate or were part of the rehabilitation of the barn shortly after the Battle and are those seen in the 1866-68 Tyson Stereoview (Photograph 4). They probably replicate and incorporate part of the originals. The hinges and pintles appear to be in their original locations; only one earlier pintle hole adjacent to the upper north hinge exists in the framing. The one alteration to the doors appears in the quichet, or human-scale, door. Let into the larger right-hand leaf, it has been rebuilt, widened, and the wrought strap hinges seen in the Tyson view eliminated.

The wagon shed doors in the south bay date to the 20th century Army alterations. Neither the Tyson nor Tipton view shows openings into this bay. The circular sawn, 1"X12" boards without battens, cut nailed and with stock 1/4" bar steel strap, machine made, hinges suggest that the doors were added at the same time that the interior lofts were constructed, the floor paved, and the southern stalls removed, i.e., c.1915.

The west elevation siding is a melange of periods. That directly over the threshing floor door appears old and weathered, is battenless, and although it could not have been installed until c.1880 when the roof was raised, the old nailholes and broken nails indicate that it was reused material from the 1866-68 rehabilitation. The upper portion on the northern bay is equally old, or older, and much is wedge-form and might be original fabric reused. That below appears to be Park Service replacement, circular sawn and showing little weathering, and applied to 3" deep nailing strips, although the logs indicate it was originally applied directly to them (Photograph 17 and 19). All the siding on the southern bay has battens, shows little weathering, and much appears to date to the late 19th century construction of the two story bay after removal of the one story shed.

D. SOUTH ELEVATION

Dating to the c.1880 construction of the two story south bay, the elevation has only a single opening: a hay loft door.

The door does not show in the Tipton photographs, and apparently was cut into the siding and hung with machine made steel strap hinges as part of the Army alterations to the building after 1900. The siding on this elevation is



PHOTOGRAPH 21

Leister Barn, Existing South Elevation

typically 1"x12" oak, battened below the line projected between the eaves, and secured with cut nails. The siding above the eave line is more random, and weathered, and might be either original or 1866 siding, reused in the 1880 construction.

5. Roofing

The existing roofing is 24" cedar shakes installed on 5X4" X3" shingle lath, spaced 7"-8" on center. As previously discussed, until after 1900 the barn had biaxially and regular drawn shakes installed with a 11"-12" exposure.

6. The Site

The existing site bears little resemblance to the historic photographs. The orchards are gone - an unfortunate occurrence since they would have helped screen the intrusive cyclorama and administrative structures nearby. Part of the earlier stone walls remain, running north, southeast of the barn, and to the east from the north end of the forebay. The east barnyard and fencing, however, have been removed and a barnyard constructed on the west side of the barn, the Civil War period hay wagon approach and hay storage area.

An 18" storm drain line and catch basin are located to the west, fifteen feet from the barn, with an outlet close to

the southwest corner of the structure. They were installed sometime within the last three decades. The resultant outflow south of the barn has rendered the area swampy, formed a small stream, and produced high soil moisture conditions destructive to the fabric of the barn.

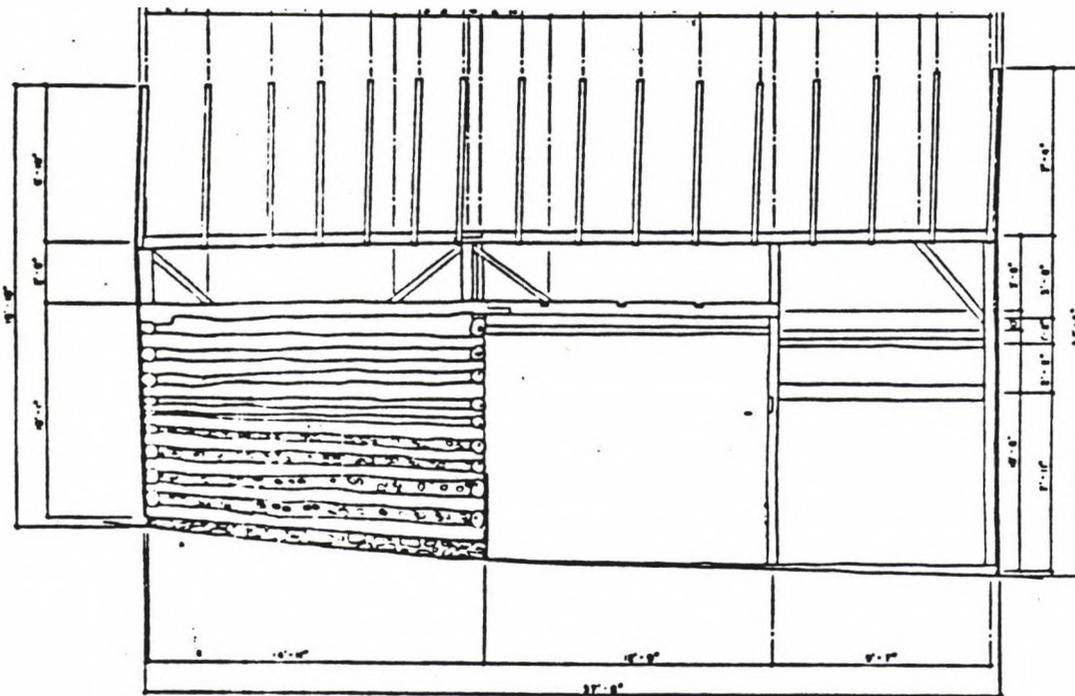
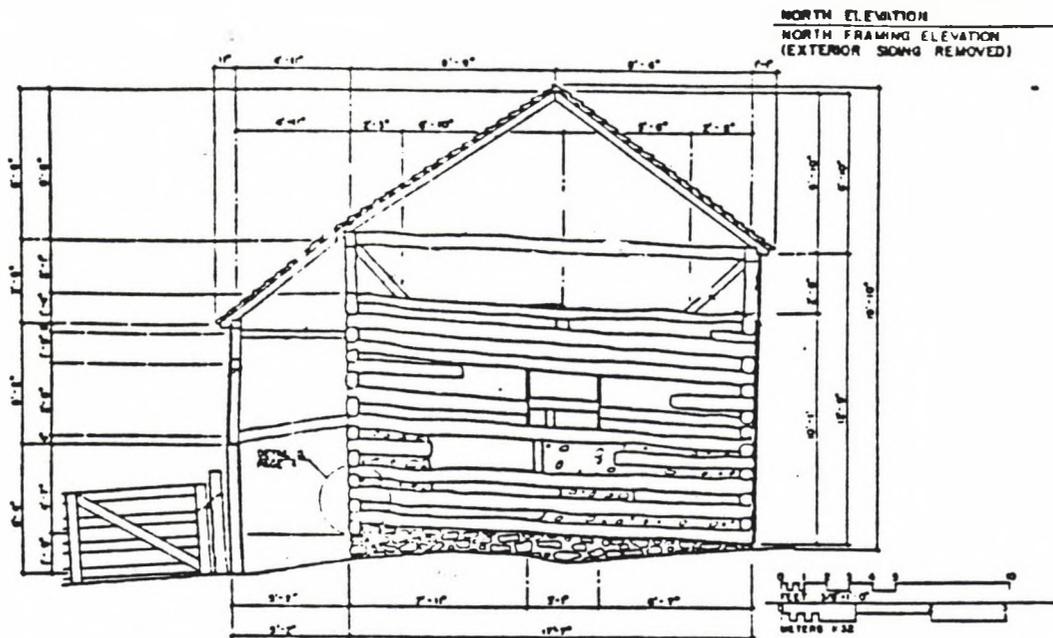
C. EXISTING FABRIC: INTERIOR

1. The Log Bay

The log portion of the barn is 14'2" deep and 17'8" wide, the logs extending above the rough field stone foundation to a height of approximately 12 feet. The oak logs are barked, rough hewn, and joined at V-notched corners. The chinking between the logs is typical of that found in Adams County, a combination of diagonally laid flat stones and small diameter logs in a matrix of lime, clay, sand, and hair mortar. Twentieth century patches in the chinking and extensive foundation repairs on the north and west elevations are readily apparent because of their dark gray Portland cement.

The chinking is not universal, however. It stops 6 1/2'-7' above the interior floor level approximately on line with the overshoot flooring, but some 18" below the level of the existing hay loft (Illustration 2).

The interior 9'6" of the east and west log walls, and both sides of the south wall, are sheathed in wide, random



WEST FRAMING ELEVATION  
(EXTERIOR SIDING REMOVED)



ILLUSTRATION 2

NORTH AND WEST ELEVATIONS OF THE LEISTER BARN DRAWN WITH THE SIDING REMOVED BY HABS/HAER SUMMER OF 1984.

NOTE THAT THE CHINKING STOPS  $7\frac{1}{2}'$  ABOVE INTERIOR FLOOR LEVEL, ESSENTIALLY ON LINE WITH THE EXISTING OVERSHOOT FLOORING. THE LOGS ABOVE THE CHINKING WERE NOT COVERED WITH SIDING BEFORE 1863.

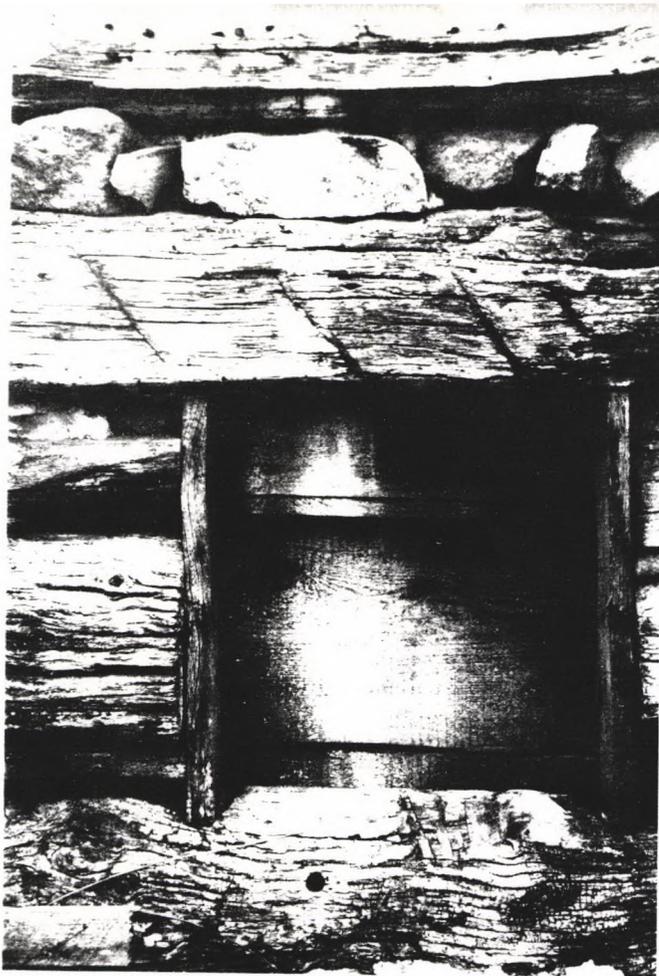
width, 5/4" circular sawn pine planks to a height of approximately four feet above the floor. The sheathing is secured with cut nails and forms the sides and back wall of a manger and grain boxes that span the full width of the south elevation. The sheathing extends north from the manger center, supported by several plank studs to complete the construction of two dirt floored box stalls, each slightly more than 8 feet wide.

The existing hay loft is failing. Eleven 2X8 circular sawn joists, averaging 15" on center, span east/west, and bear on circular sawn ledger plates nailed to the log walls and onto the central stall divider. The west ledger has dropped over 12" at the north corner because the nails have failed.

The existing stalls and loft surely date to the 20th century and probably to the army rehabilitation of the barn after 1915. This is known because examination of the sheathing on the east (forebay) elevation indicates that it was originally installed in conjunction with the adjacent window, window frame, door and door jambs, all of which are known from the photographic record to postdate 1900. Furthermore, the regularity of the loft joists and flooring in itself suggests that the framing is not of the same period as the log structure.

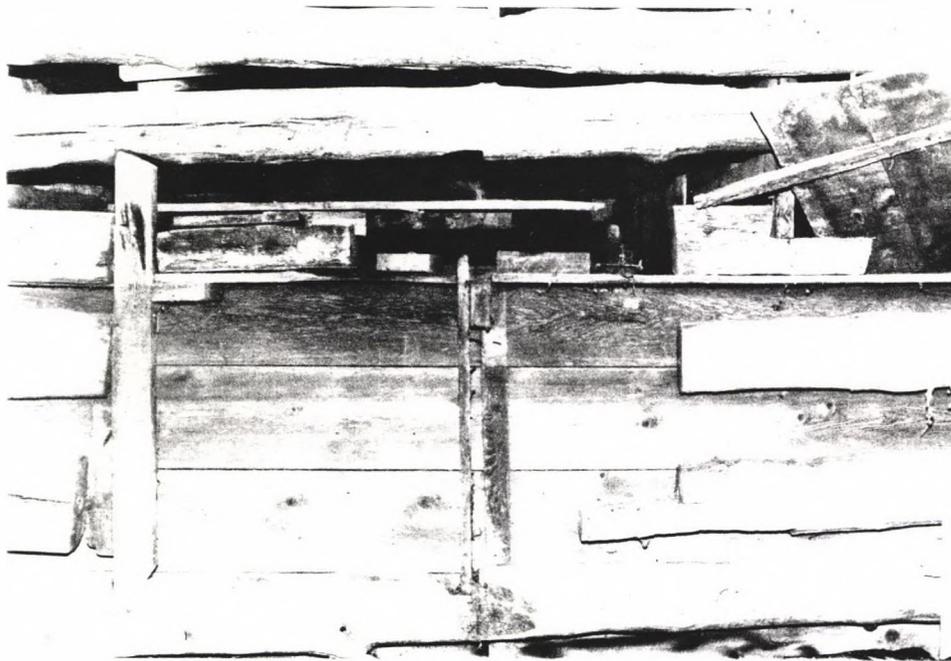
Some additional evidence bearing on the original configuration of the log bay is found in the fabric. Removal of Wainscot on the threshing floor side of the south log wall revealed the existence of an earlier door opening, approximately 3 feet wide and 4 feet high. One of the original jambs, vertically sawn oak and 4"x5", remains in place as let into notches in the sill and head logs and secured with wrought spikes (Photograph 23). The original east jamb is now missing and a 1"x6 1/2" plank inserted in the much wider notches as a replacement. The existing original jamb shows no traces of hinges or pintles; thus if the opening originally had a door it must have hung on the eastern, and now missing, jamb.

Removal of some of the siding on the west elevation log exterior revealed another small opening (Photograph 22) covered by the installation of the existing siding and the interior wainscot after 1880. The 20" wide and 19" high opening was notched into the logs forming the head and sill indicating that the aperture was part of original construction. The sides of the opening are now faced with 1 1/8" boards. These served as nailing surfaces for earlier siding as indicated by the broken nails on the exterior edges of the boards. Large nail holes in the cut log ends indicate, however, that the existing boards are replacements of earlier heavier members. The purpose of



PHOTOGRAPH 22

WEST ELEVATION OF LOG BAY EXTERIOR AFTER REMOVAL OF SIDING. NOTE THE SMALL DOOR OPENING WHICH HAD BEEN HIDDEN BY THE EXISTING SIDING.



PHOTOGRAPH 23

LOG BAY SOUTH ELEVATION VIEWED FROM THE THRESHING FLOOR AFTER REMOVAL OF THE RANDOM BOARD WAINSCOT. NOTE THE ORIGINAL DOOR OPENING. THE WEST (LEFT) JAMB IS ORIGINAL: THE EAST A LATER REPLACEMENT.

the small opening is uncertain. It is too small and too above grade to have been a door for livestock, and is too low to have been a window. The historic photographs possibly provide a clue to its use. Knowing that the west side of the barn was traditionally used for hay storage and probably for the delivery of grain, it is possible that the opening was installed to allow for easier feeding of stalled animals. Another alternative is that the opening was used when the interior space was "mucked out," i.e., it served as an easy way to remove the accumulation of manure and straw. If the log bay was first a granary, not a stable, the opening possibly expedited the storage of the crops within.

Examination of the west log exterior after removal of additional siding revealed information not visible on the interior:

- a. The log bay was first unsided - - as attested to by evidence of exposure in the weathering of the log faces. This would not have occurred if siding had been applied initially. Although it is possible that the logs were reused from an earlier structure, evidence cited below indicates that they were not fully covered after installation on the Leister Barn and continued to suffer from exposure;

2. Photographic evidence suggests that the log bay had some siding by 1863, specifically on the north gable and the overshoot. The fabric indicates that the siding on the west elevation covered only the logs on the lower 7'6". The siding today is tied to nailing blocks and lath strips applied when the roof was raised c.1880, apparently to provide a more regular surface. Abundant nail holes and bent cut nails in and on the logs (Photograph 24) indicate that the earlier siding was applied directly to the log faces. No early whitewash is evident on the logs having nailholes. Starting 7'6" up the exterior, however, nails and nailholes are absent and the logs retain several layers of whitewash which must predate the 1866-68 photograph taken after these logs were covered with siding. The gable end of the log bay does not show such differentiation and appears to always have been covered in siding.

The reason for the lack of original siding on the upper portion of the western logs is apparent when the logs just below the whitewashed section are examined: spaced along both logs, on the upper surface of the lower and the lower surface of the upper, is a series of aligned shallow notches appearing to have been seats for original hay loft joists. The logs above this original hay loft floor were both unchinked and unsided to provide ventilation for the



PHOTOGRAPH 24

WEST ELEVATION OF LEISTER BARN, NORTH LOG BAY EXTERIOR

NOTE THAT THE LOWER LOG HAS MANY BROKEN OR BENT WROUGHT AND CUT NAILS INDICATIVE OF EARLIER SIDING APPLIED DIRECTLY TO THE LOGS. THE UPPER LOG HAS NO EARLIER NAILS OR NAIL HOLES. THE PURPOSE OF THE HOLES AUGERED IN THE LOGS IS UNKNOWN, ALTHOUGH THEY MIGHT HAVE SECURED AN EARLIER LEDGER PLATE FOR A SMALL SHED ADDITION OR WERE REUSED FROM AN EARLIER STRUCTURE.

PHOTOGRAPH 25 (FOLLOWING)

THE WILLIAM PATTERSON BARN AS PHOTOGRAPHED BY TIPTON, c.1830. NOTE THAT THE CHINKING AND SIDING EXTENDS ONLY UP TO THE LEVEL OF THE HAY LOFT: THIS APPEARS TO HAVE BEEN SIMILAR TO THE EXTERIOR TREATMENT OF THE LOG BAY AT LEISTER BEFORE THE WAR. (PHOTOGRAPH ENLARGED BY THOMAS DAVIES, I.N.H.P.)



stored hay. A similar treatment of log hay lofts and the sided and chinked walls below is seen in Photograph 25, a view of the William Patterson Barn at Gettysburg taken by Tipton after 1880.

The north elevation logs reveal what appears to have been an original hay loft door opening approximately 3' square, opening just above the level of the original loft, and centered on the ridge. Now blocked in and with plank jambs to stabilize the adjacent logs, the opening must have been closed c.1880 when the ridge was raised. As previously noted, the existing higher loft door was installed before 1900 and probably was part of the 1880 construction, suggesting that the existing north hay loft dates to 1880-1900.

The overshoot appears in the 1863 photograph and is an integral part of the existing original roof structure and threshing floor framing. There is no question that an overshoot was part of the building that stood during the Battle. The overshoot is now supported by:

1. The northeast corner post;
2. The northern post of the threshing floor east elevation; and,

3. Five joists, two of which are let into the above-mentioned posts and nailed to the log wall, and three bearing on the logs and the north/south girt which ties the two posts together and to which the lower edge of the overshoot siding is nailed. All of the members have been modified or are not original.

As seen in Photograph 26, and Illustration 3, the original units of the east elevation forebay frame consist of the upper section of the north post, the central girt, the southern post, the diagonal braces, and the lower girt. The central girt is, in fact, the original rafter plate as indicated by the bird's mouth mortises on its upper and outer faces. The posts supporting the existing functional rafter plate are toe-nailed to the earlier rafter plate and to the plate they support; these posts and upper plate were added c.1880 when the roof was raised to its present height. Both the original and 1880 members are hewn oak.

The lower girt which supports the bottom of the siding is not original. Removal of siding over the southern post revealed a mortise, cut tenon, and peg from the earlier and 6" lower original, horizontal girt (Photographs 27 and 28).

The Gardner photograph shows this girt and indicates that the siding then extended 3"-4" below the lower edge of that

member. The cut tenon, post stains and wear, and adjacent threshing floor girt indicate that the earlier member was a 4"x5" of hewn oak.

The southern post is original, but the 5 1/2"x5 1/2" hewn oak post to the north has been spliced just below the mortise and cut tenon of the original lower girt. A 3 1/2" X6" member has been substituted for the original post. Enough of both posts remains to ascertain that the existing end ties are original (Photographs 27 and 29). Both are hewn oak, approximately 4 1/2"x5", mortised into the posts and nailed to the exterior faces of the log walls with wrought spikes. The three intermediate joists, two 2"x4"'s, and a section of reused early framing (Photograph 30) are not original. They are half-lapped over and nailed to the replacement lower girt and against the log wall face. Because of their method of connection they do not function in tension as the original end ties, and it is apparent that they serve only one purpose - support of the 1"x12" circular sawn overshoot flooring which also forms a ceiling to the forebay. Examination of the top surfaces of the original ties and the later lower girt revealed no evidence of earlier floor nails leading to the conclusion that the overshoot was not floored originally and that the existing boards and joists were added in 1880 or later. This view is further supported by the presence of the



PHOTOGRAPH 26

INTERIOR OF OVERSHOOT LOOKING NORTH. THE LOWER HORIZONTAL GIRT AT RIGHT IS THE ORIGINAL EAST RAFTER PLATE SUPPORTING THE OVERSHOOT AND EAST EXTENSION RAFTERS. THE EXISTING FUNCTIONAL PLATE IS ABOVE IT.

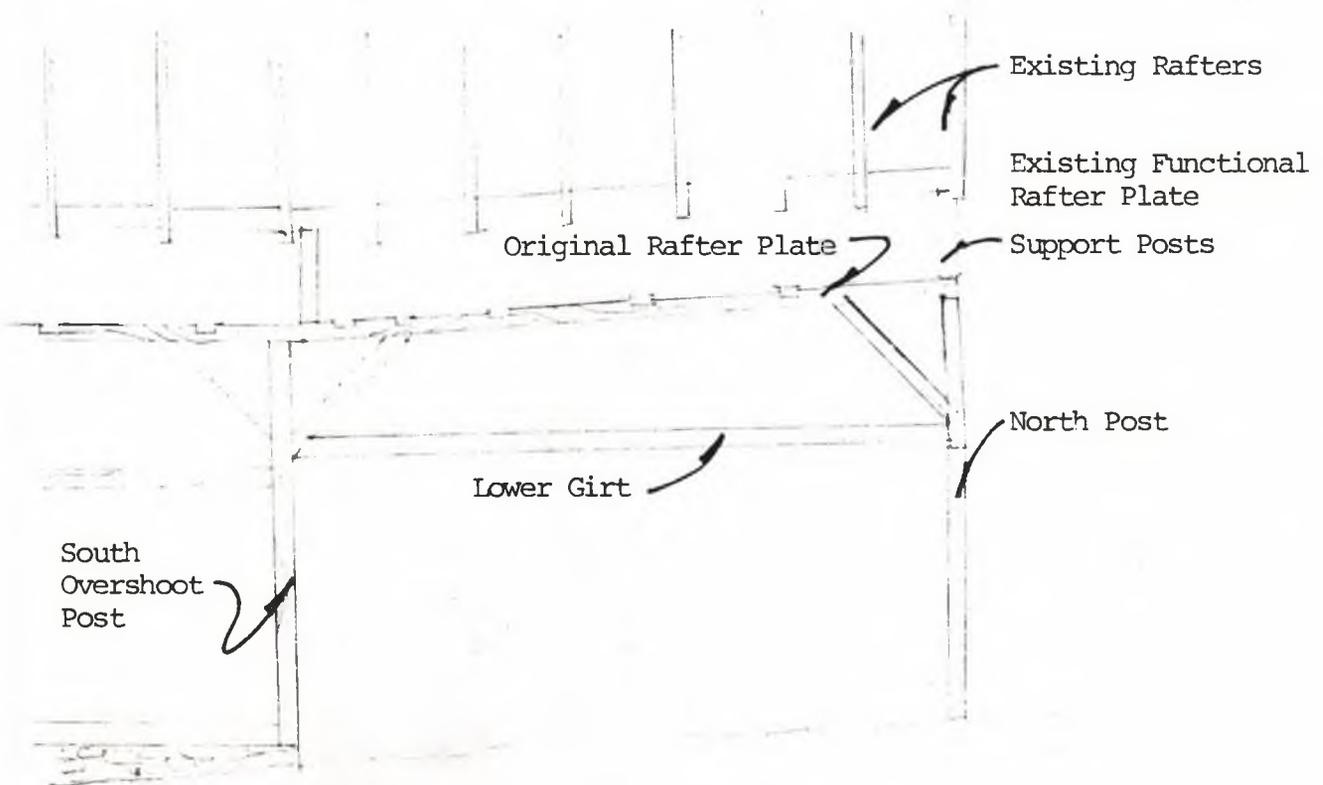
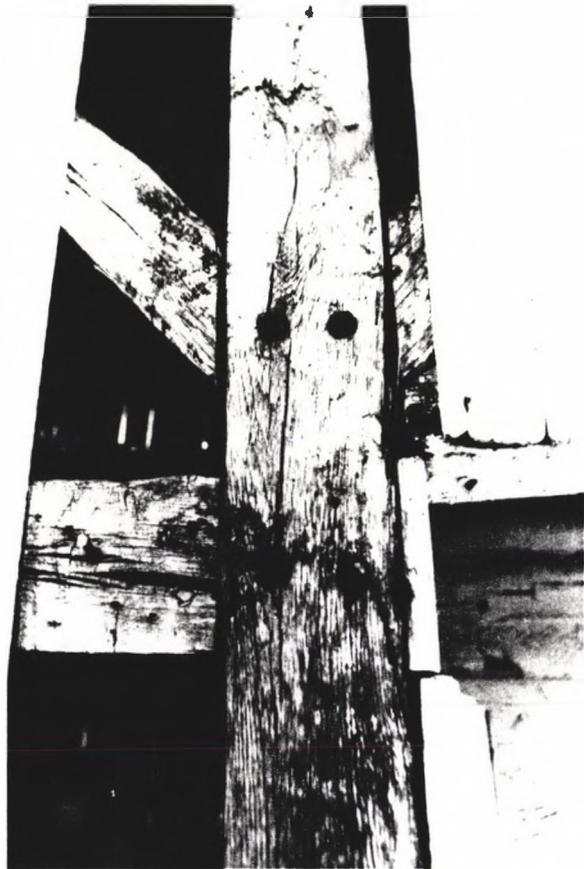


ILLUSTRATION 3

SKETCH ELEVATION OF EXISTING FOREBAY FRAMING. ORIGINAL FABRIC IS SHADED.



PHOTOGRAPH 27

DETAIL OF EAST EXTERIOR ELEVATION OF THE SOUTH SUPPORT POST OF THE OVERSHOOT AT THE LEVEL OF THE LOWER GIRTS. SIDING HAS BEEN REMOVED FOR INVESTIGATION.

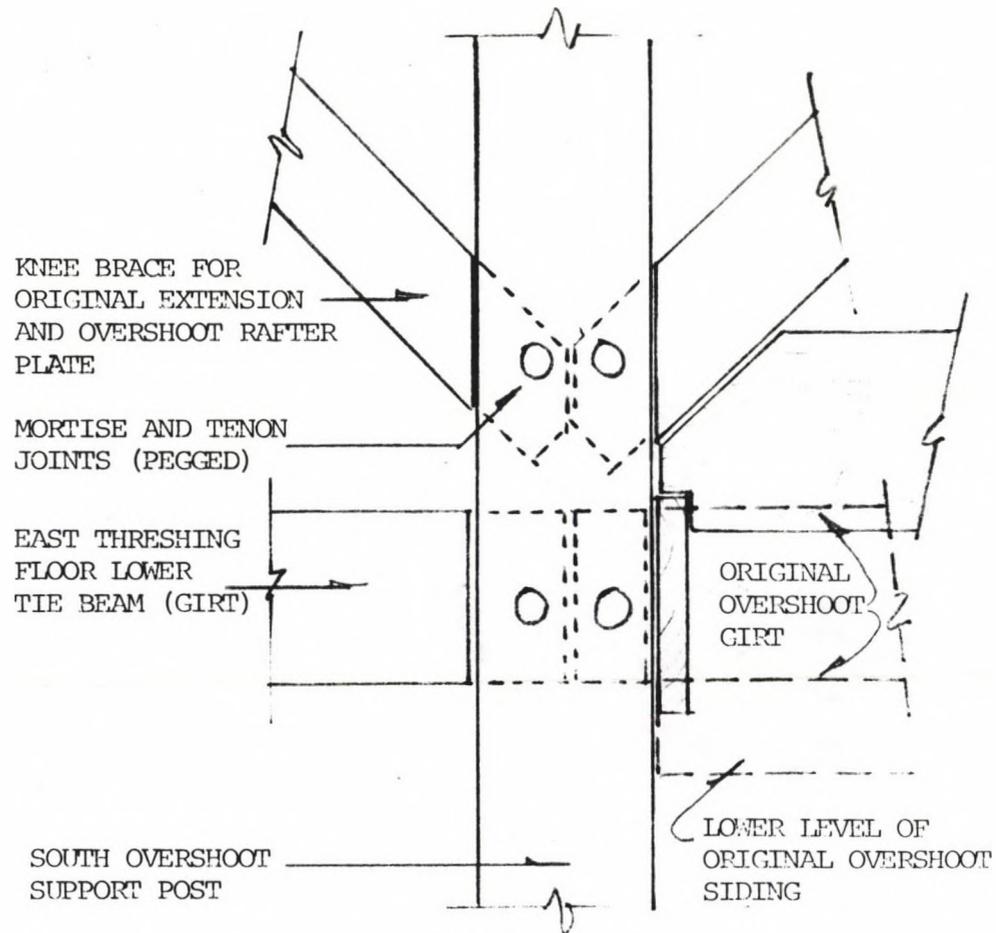
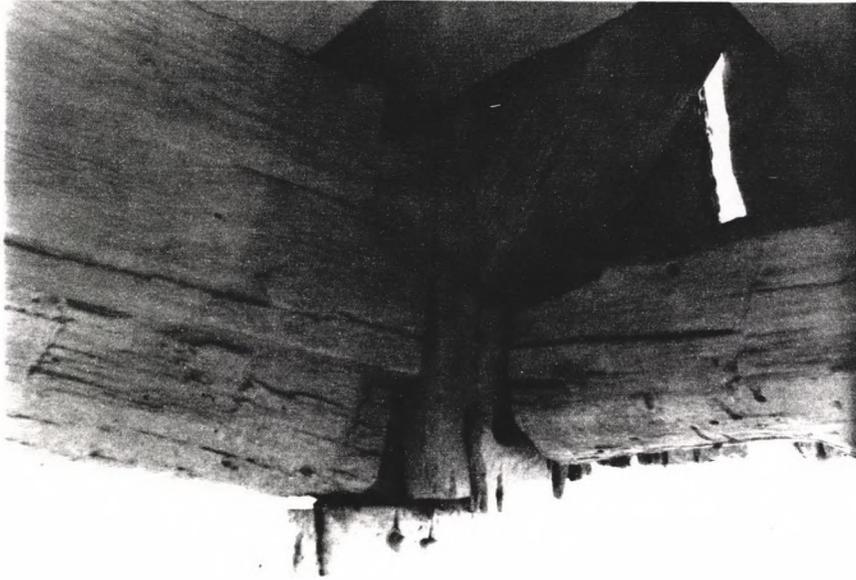


ILLUSTRATION 4

DETAIL SKETCH OF PHOTOGRAPH AT LEFT SHOWING THE MORTISES AND TENONS OF THE ORIGINAL FRAMING. THE EXISTING OVERSHOOT GIRT (SHADED) IS SUPPORTED BY A 4"x6" LEDGER (SHADED) NAILED OVER THE ORIGINAL GIRT TENON.



PHOTOGRAPH 28

DETAIL VIEW OF INTERIOR ELEVATION OF OVERSHOOT, NORTH CORNER  
POST, GIRTS, AND BRACES.

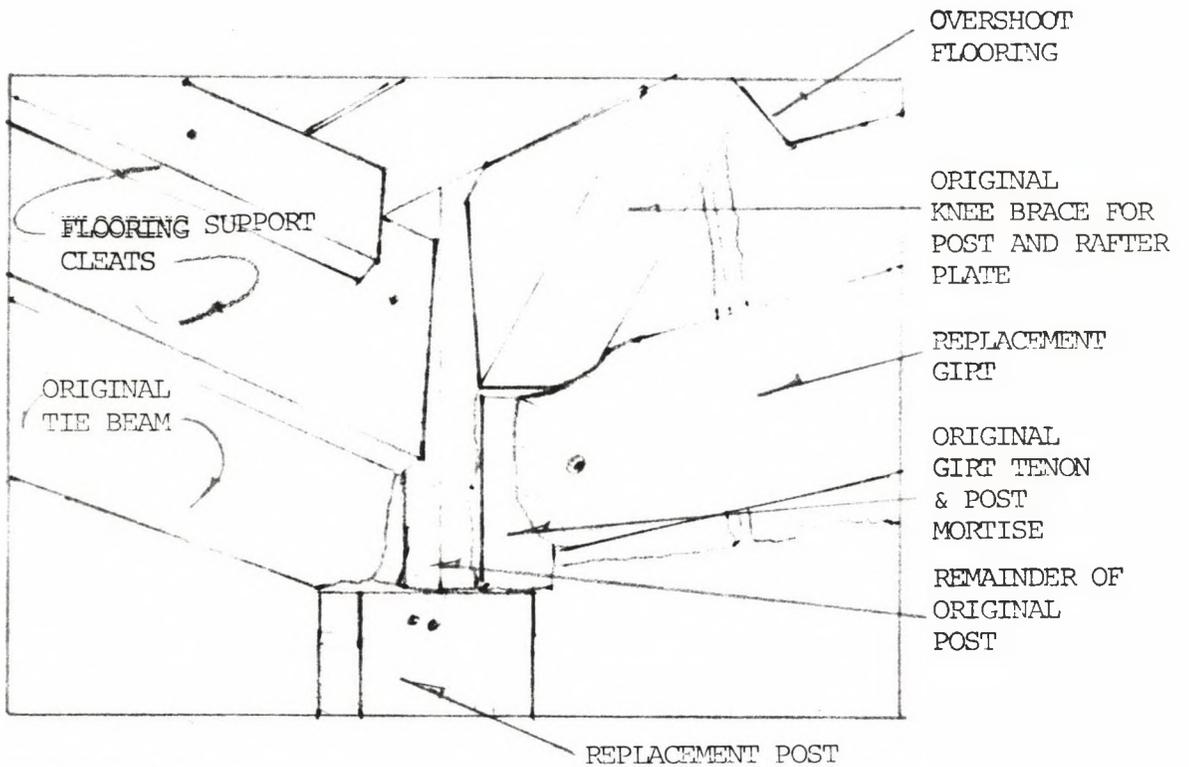


ILLUSTRATION 5

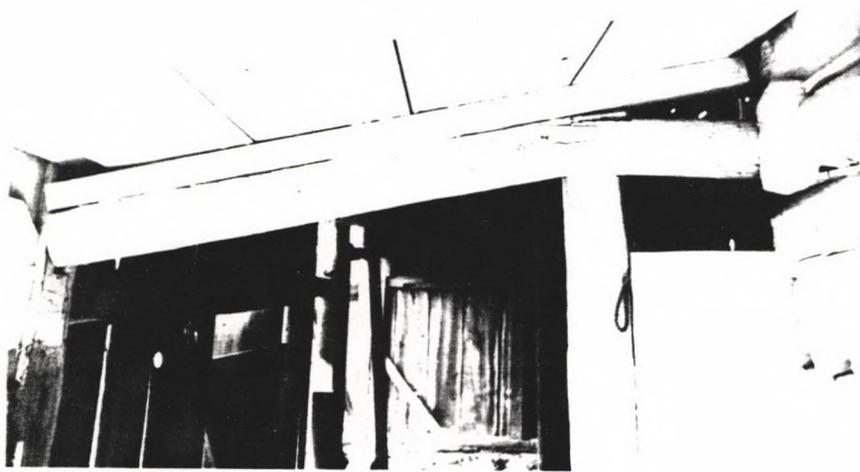
DETAIL SKETCH OF PHOTOGRAPH OF NORTH FOREBAY SUPPORT POST  
(NON-ORIGINAL MEMBERS ARE SHADED)

reused hewn 4 1/2"x5" oak joist. As will be discussed below, that member has been identified as part of the frame of the original south shed bay of the barn which was removed by 1882. As such, its installation as a floor joist could not have occurred until that date. It should also be noted that cross ventilation of the loft was obviously desired and accommodated in the original construction, but was hindered by the addition of flooring to the overshoot.

The overshoot is now in extremely poor condition. The southern end has dropped nearly 5" lower than its original height, and the north end has fallen to the extent that the stall door cannot be opened because of contact with the overshoot floor boards. The failure has been hastened by the rot at the base of both posts and the sill plate on the east side of the threshing floor.

## 2. The Threshing Floor Bay

The central or threshing floor bay is 13'3" deep and 22'11" wide, the primary frame is 17'9" wide, and the eastern extension adds an additional 5'2". It is defined on the north by the log stall bay, on the south by a post and frame bent, on the west by a large pair of doors spanning from grade to just 4'6" below the eave, and on the east by a sided frame wall incorporating a 5 1/2'x4' door. The



PHOTOGRAPH 29

EAST ELEVATION OF LEISTER BARN, SOUTH EXTERIOR ELEVATION OF  
OVERSHOOT SHOWING CONDITION OF ORIGINAL TIE BEAM TO LOG BAY.



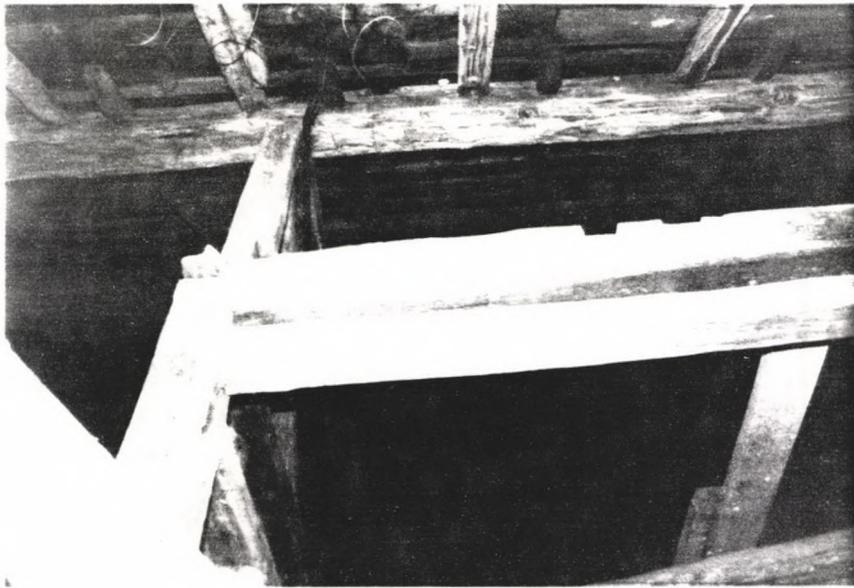
PHOTOGRAPH 30

EAST ELEVATION OF THE BARN SHOWING LOG BAY OVERSHOOT JOISTS.

flooring is 2" thick, random pine planks laid on prefabricated concrete pavers (2'X4'). Both were installed by the Army in the second decade of this century to facilitate the storage of heavy machinery.

As previously discussed, the south elevation of the stall logs are partially covered with random board wainscot. Above the wainscot at the level of the original loft, two logs have been cut to form an opening 4'7" wide centered on the ridge. The opening has been partially filled with blocking and the addition of a horizontal member. It originally served as threshing floor access to the hay stored in the loft.

The c.1880 roof raising is readily apparent in examination of the threshing floor framing. The north/south horizontal connecting girts, installed after the south threshing floor bent was raised, provide specific proof of the earlier roof configuration. The central girt on the east has bird's mouth mortises, typically used to seat rafter ends (Photograph 31). Furthermore, both 4"X4" hewn oak girts extending south from the top logs of the stall bay contain similar mortises. Although the mortises could have been an original construction error, the facts that several rafter ends remain lodged in the jointing (Photograph 32), and



PHOTOGRAPH 31

LEISTER BARN INTERIOR. EAST ELEVATION OF THRESHING FLOOR BENT, EAST PRIMARY POST, AND PAIRED GIRTS CONNECTING THE THRESHING FLOOR BENT TO THE SOUTHEAST CORNER OF THE LOG BAY.

NOTE THE BIRD'S MOUTH MORTISES ON THE UPPER GIRT. ONE ORIGINALLY SEATED A PRIMARY RAFTER, THE OTHER AN EXTENSION RAFTER.

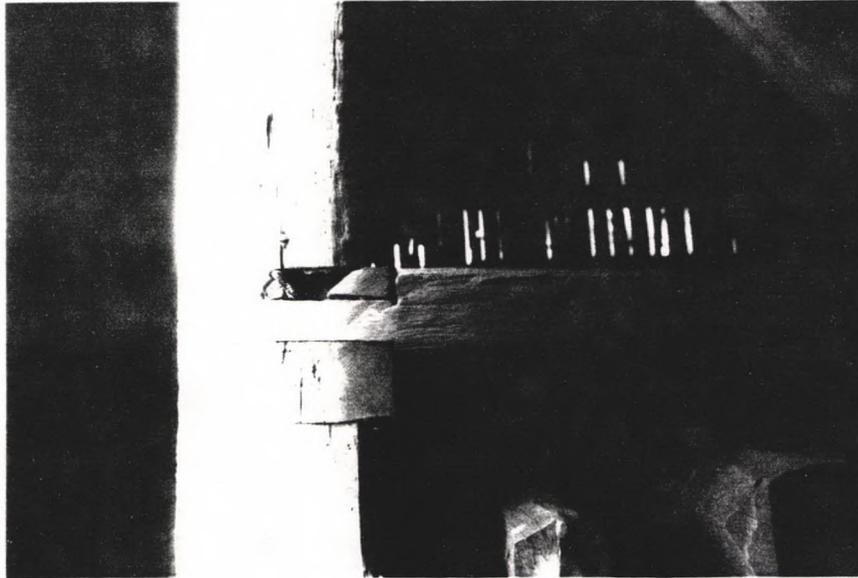


PHOTOGRAPH 32

WEST ELEVATION OF THE BARN, LOG BAY ADJACENT TO THE THRESHING FLOOR DOORS. WHERE SIDING HAS BEEN REMOVED ADJACENT AND ABOVE THE DOORS, AN ORIGINAL RAFTER PLATE WITH A BIRD'S MOUTH MORTISE STILL HOLDING A RAFTER END IS VISIBLE.

retain others broken wrought nails argues against this theory and indicate that the mortises were once used.

The alteration of the roof pitch after the 1863 Gardner photograph, but before the 1882 Tipton view is substantiated by the existing framing. The roof alteration was accomplished by the installation of new + 6"x6" rafter plates above the older plates and supported by 5"x5"-6"x6" posts seated on, and toenailed to, the original plate. The posts were given lateral stability by the addition of 3"x4" knee braces which were also not let into the new or original frame, but spiked to both. Although it will be discussed in more detail below, all of these braces and posts appear to have been made from original rafters or south shed structural frame members. The added posts changed the pitch of the roof because those above the original west and primary east plate were 33" high, those mounted on the eastern plate carrying the overshoot and extension roof were only 26" high. The result of this height differential was that the eastern rafters were canted upward at a higher angle, raising the ridge more than it would have been if all three plates were raised by an equal value. Photograph 33 shows the south face of the west post of the threshing floor bent at the level of the original west rafter plate. Photograph 34 shows the main frame east rafter plate and bird's mouth mortises



PHOTOGRAPH 33

LEISTER BARN THRESHING FLOOR BENT, WEST POST AT LEVEL OF ORIGINAL RAFTER PLATE. THE POST SUPPORTING THE EXISTING FUNCTIONAL RAFTER PLATE IS TOE-NAILED TO THE UPPER SURFACE OF AN ORIGINAL RAFTER SEAT, A BIRD'S MOUTH MORTISE.



PHOTOGRAPH 34

LEISTER BARN THRESHING FLOOR BENT, EAST PRIMARY POST AT LEVEL OF ORIGINAL RAFTER PLATE. NOTE THAT THIS RAFTER PLATE CONNECTION IS SIMILAR TO THAT SEEN ABOVE, BUT THAT IT ALSO INCLUDES AN EXTENSION OF THE TIE BEAM WHICH ORIGINALLY WAS A SEAT FOR THE EASTERN HIP RAFTER.

which originally carried the primary eastern rafters and the secondary rafters of the eastern overshoot and eastern extension.

Most of the existing functional rafters are circular sawn, 2 1/2"x4" oak. Some, particularly the shorter eastern extension rafters, are unbarked oak, faced only on the upper side for application of the lath and shingles. Old nail holes suggest that these cruder members are reused original or early rafters dating to the 1880 work. The sawn members appear to date to the 20th century.

Of interest are the large diagonal members in the south threshing floor bent. Extending from the sill plate to the lower of the two transverse tie beams between the principal posts (Illustration 6), they are somewhat of a structural enigma. Hewn from oak, these 5"x5" members are tenoned to the sill plate and tie beams and additionally mortised to receive 4 1/2"x4" hewn ties tenoned into the principal posts and ladder studs. Similar construction has been noted in the McClean, Brian, Culp, and Codori Barns at Gettysburg, suggesting a common builder or a local vernacular tradition. They are of interest because they serve structurally as neither post nor brace, not being vertical and yet too close to vertical to act as effective bracing. The Gardner photograph reveals that the end (south) frame

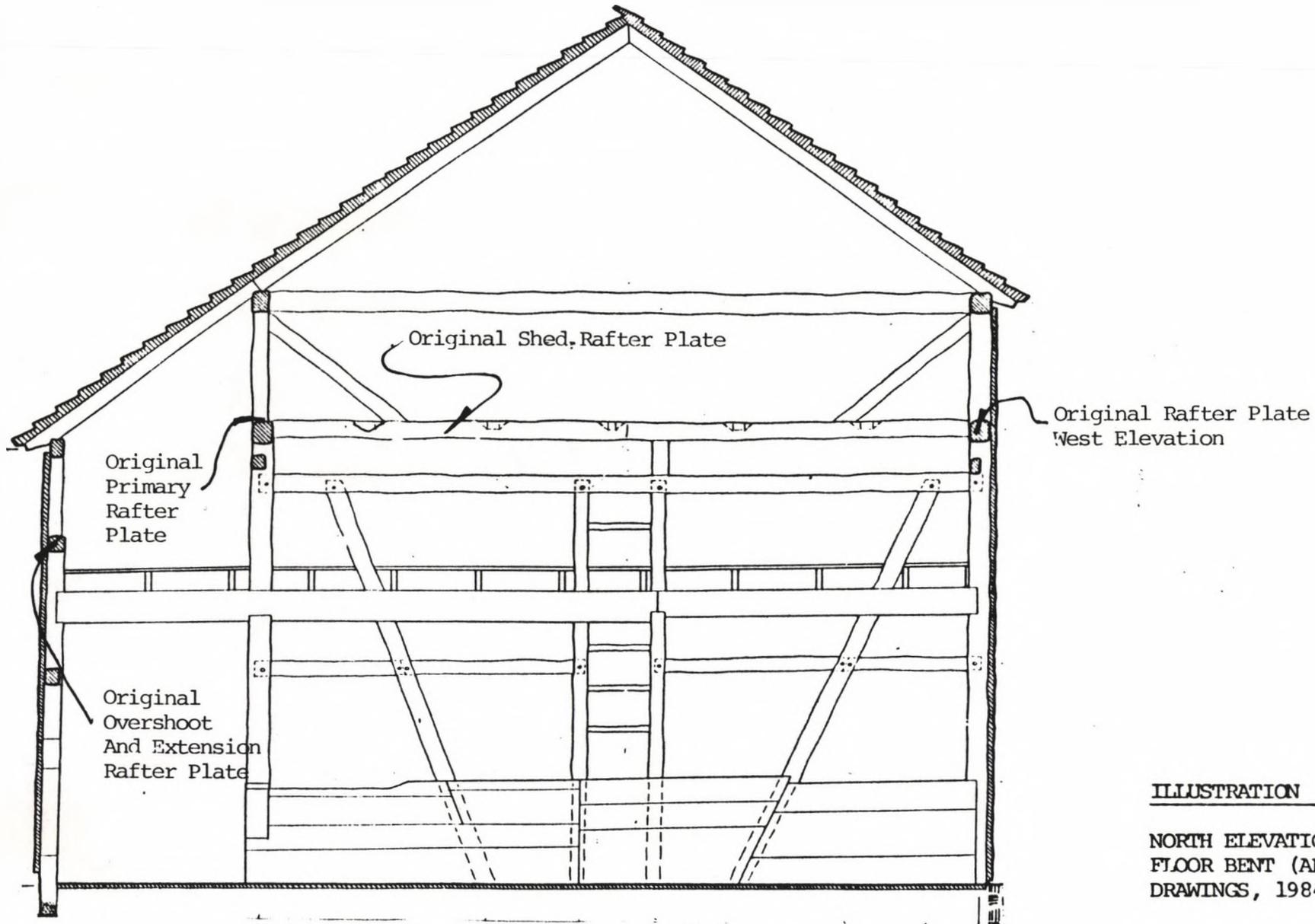


ILLUSTRATION 6

NORTH ELEVATION OF THRESHING  
FLOOR BENT (AFTER HABS/HAER  
DRAWINGS, 1984)

of the original shed bay also had similar members. The 1880 construction includes no such bracing, and it is possible that by that time barnwrights had come to the conclusion that these members served no useful function.

Unattached logs still remain spanning the threshing floor at the level of the rafter plate tie beams. They were used, as necessary, to form a temporary loft for additional storage. A ladder in the south bent provided access to this makeshift loft when needed.

### 3. The Wagon Shed

As the photographic record makes clear, the existing south bay dates to c.1880, although examination reveals that some of the original one story shed framing was incorporated into the later east elevation and that a considerable amount of vestigial material remains in the south elevation of the threshing floor bent.

The existing south bay is 10'0" deep and 22'11" wide. It is defined on the north by the original threshing floor bent, on the east by siding clad horizontal girts joined to the post and frame south bent, and on the west by two horizontal girts above the carriage doors previously identified as dating to the post 1915 alterations.

The existing south bent (Illustration 7) has four hewn oak posts. The three western ones are 6"x6" and extend from the sill plate (5 1/2"x5 1/2" and circular sawn) into which they are nailed up to the level of the existing functional 6"x6" east and west elevation rafter plates. The outer posts are let into the rafter plates, the center post let into a 6"x6" hewn tie beam that, in turn, is half-lapped onto the rafter plates. The easternmost post supports the functional rafter plate for the extension and is therefore shorter and lighter (5 1/2"x5 1/2"). The tie beams and knee braces in the bent are either machine planed or hewn; the hewn members are not joined to the frame, but nailed, and all show clear evidence of being reused.

Excluding the modern 2"x8" joist supporting the south hay loft, the west frame consists only of a 4 1/2"x4 1/2" horizontal girt, a knee brace, and the existing functional rafter plate. Both the girt and the brace are reused fabric. The girt has four bird's mouth mortises (Photograph 35) and three rectangular blind mortises on opposing sides. This arrangement could have served only one original function - as a rafter plate. The brace is 4 1/2"x4", hewn on four sides, and with aligned broken nails on one face suggesting that it was originally covered with siding.

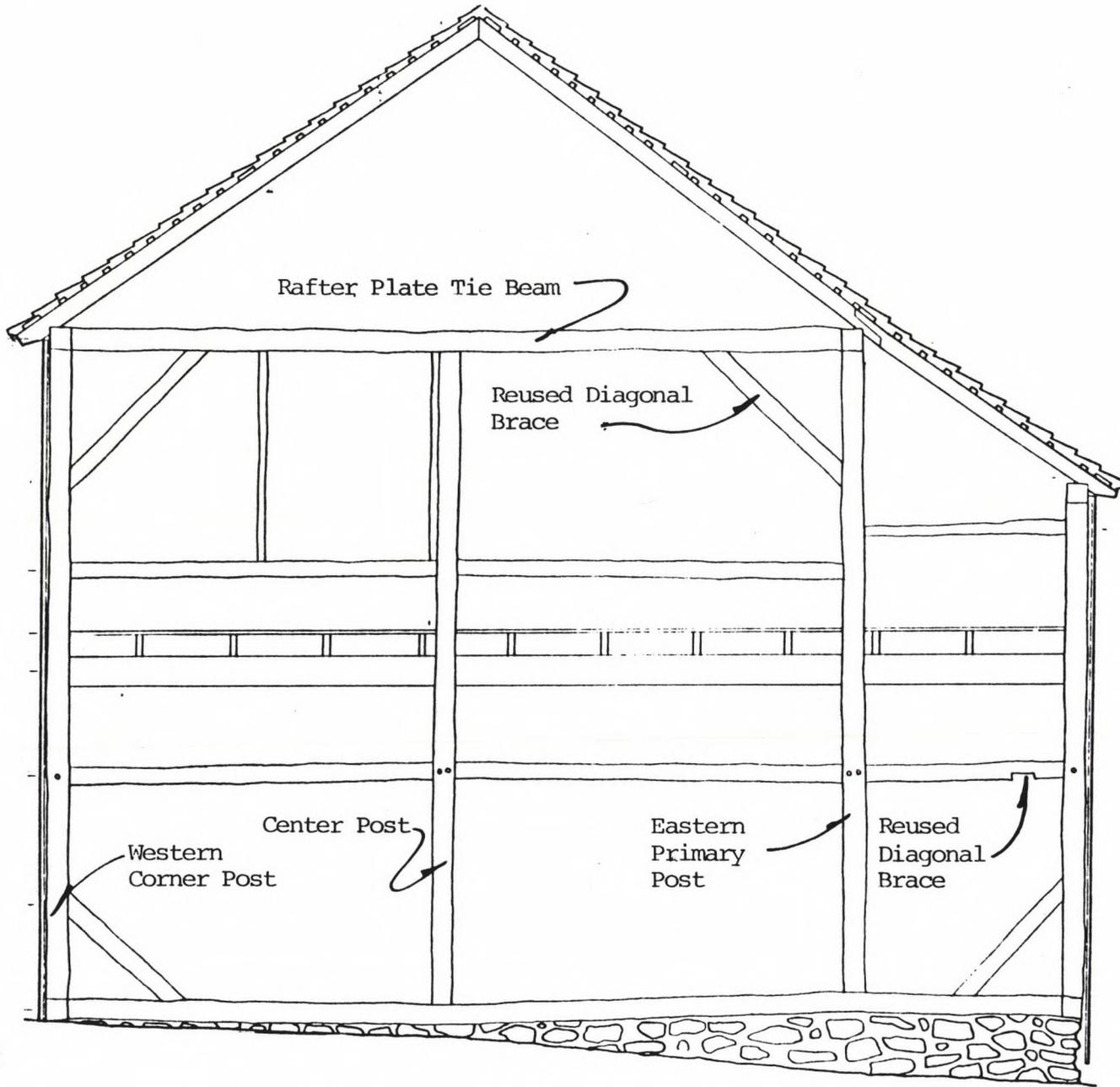


ILLUSTRATION 7  
 SOUTH ELEVATION OF SOUTH  
 BENT DRAWN WITH SIDING  
 REMOVED (AFTER HABS/HAER  
 DRAWINGS, 1984)

The original and 1880 fabric in the south elevation of the threshing floor bent reveals information concerning the original one story shed. The upper tie beam of the bent, hewn 4 1/2"x4 1/2" oak, is lapped over and pinned to the top surface of the original rafter plates. (Photographs 33 and 34). Onto it the later rafter plate posts and braces are nailed. As seen in the Gardner and Tyson photographs, this tie beam was the upper termination of the shed roof and, if original, should reveal evidence of that earlier construction. It does. As seen in Photograph 36, the tie has seven notched seats for the earlier shed rafters. The two above the end posts are fairly complicated since they also incorporate bird's mouth mortises for the south gable main rafters (Photographs 33 and 34). The five central seats average 30" apart, are 5"-6" wide (with a flatter central area 3 3/4" wide), and all are 1"-1 1/2" deep. Each retains at least one broken wrought nail.

The braces toenailed to the top of the original threshing floor bent shed rafter plate support the newer rafter plate posts. They were both made from reused earlier rafters. The western one (seen in Photograph 37) reveals broken wrought nails 12"-13" on center situated in discolored rectangular areas presumably formed by the original shingle



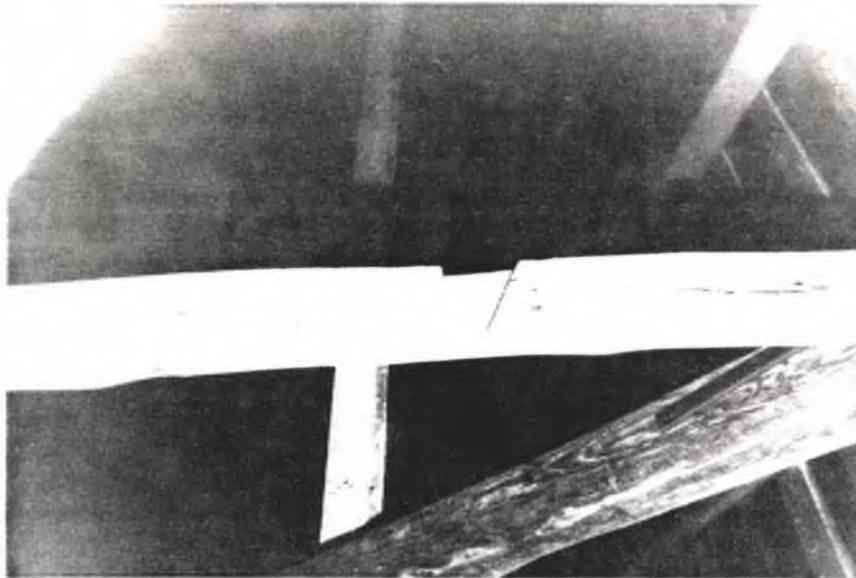
PHOTOGRAPH 35

WEST ELEVATION, SOUTH BAY INTERIOR ABOVE HAY LOFT. THE SOUTH BAY WEST CORNER POST IS SEEN AT PHOTO LEFT. THE HORIZONTAL GIRT HAS FOUR UNUSED BIRD'S MOUTH MORTISES ON ONE FACE AND THREE BLIND MORTISES ON THE OPPOSITE.



PHOTOGRAPH 36

THRASHING FLOOR BENT UPPER TIE BEAM, WEST SIDE ADJACENT TO WEST POST. THE NOTCH INCLUDES A BROKEN WROUGHT SPIKE; IT ORIGINALLY HOUSED ONE OF THE SOUTH SHED RAFTERS.



PHOTOGRAPH 37

DETAIL OF UPPER BRACE FOR WEST NON-ORIGINAL RAFTER PLATE SUPPORT POST MOUNTED ON THRESHING FLOOR BENT. POST IS TOENAILLED TO ORIGINAL RAFTER PLATE AND THRESHING FLOOR BENT UPPER TIE BEAM.

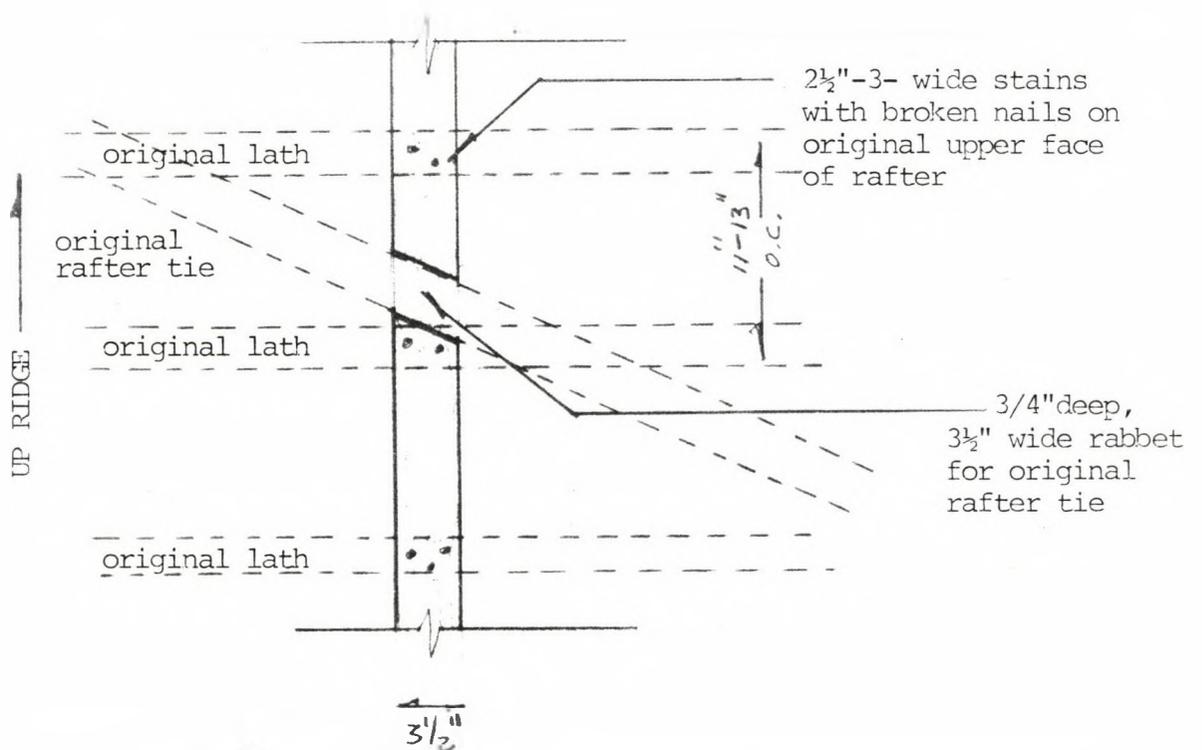


ILLUSTRATION 8

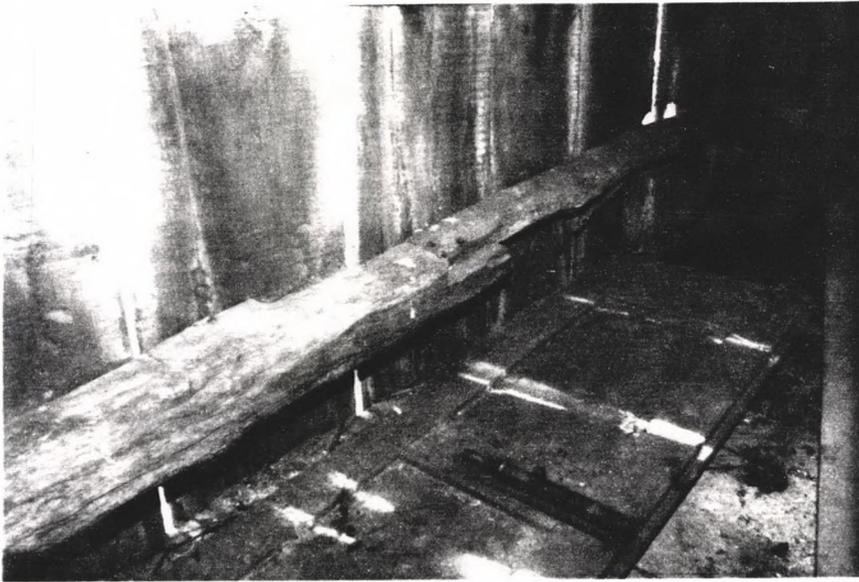
DETAIL SKETCH OF ORIGINAL USE OF BRACE SHOWN IN ABOVE PHOTOGRAPH

lath. A rabbet (3 1/2" wide and 3/4" deep) on the same face as the lath stains is believed to be the former seat of a rafter tie. Such ties were commonly found in Pennsylvania barns and cabins and extended from the eave diagonally up the roof. Let into the upper surface of the rafters, they terminated near the gable and helped to "stiffen" the roof structure.

Another unit of reused material is found in the threshing floor bent. The top 33" of the east post, supporting the 1 3/4" chestnut rung ladder which provided access to the log threshing floor hay loft, is a 4"X3 7/8" hewn oak splice incorporating a bird's mouth mortise. The member and mortise appear to have been cut from the same piece of reused framing that provided the girt in the west elevation of the south bay.

The east elevation framing contains a great deal of in situ original fabric. As the rest of the barn, it has a c.1880 rafter plate supported on short posts toenailed to the original lower plate.

The Gardner photograph reveals, however, that the east elevation first incorporated a hip rafter which expedited the transition from the plane of the shed roof to that of the main roof. Thus the east elevation rafter plate did



PHOTOGRAPH 38 (ABOVE)

EAST ELEVATION OF SOUTH BAY ABOVE HAY LOFT FLOOR. NOTE THAT THE EXISTING HORIZONTAL GIRT IS HALF-LAPPED; THAT TO THE LEFT (NORTH) IS PART OF THE ORIGINAL SOUTH SHED FRAME.



PHOTOGRAPH 39 (LEFT)

EAST POST OF THE THRESHING FLOOR BENT. NOTE THE BEVEL MORTISE AND MORTISE BELOW; THE BEVELLED CUT ORIGINALLY SECURED A NAILER FOR SIDING, THE LOWER MORTISE A KNEE BRACE TIED TO THE SILL PLATE.

not extend to the southeast corner post, but stopped at the hip rafter. The historic photograph shows that the joint of the rafter plate and hip rafter was supported by a stud or post which was seated on a girt joined to the north and south bent posts and additionally supported by the heavy door jamb below. Examination of the existing fabric indicates that the door jamb, horizontal girt, and post are original shed fabric. The original 4"x4" hewn rafter plate was cut north of the hip rafter post in 1880 and a half-lap splice added to provide a tie to the new southeast corner-post (Photograph 38). Evidence for the originality of these members is as follows:

- a. They are all hewn oak, tenoned and mortised together and none shows evidence of reuse; all of the secondary fabric identified as being from 1880 or later shows evidence of reuse, is toenailed, or is sawn.
  
- b. The door jamb and the east post of the threshing floor bent have nonfunctional rabbets with broken nails on their exterior faces. Both are indicative of earlier in situ use (Photograph 39). A similar rabbet in the west face of the west post in the threshing floor bent is believed to have supported the girt implied by the Tyson Photograph.

c. Many broken wrought and cut nails and nail holes in or on the exteriors of these members attest to long use during several cycles of siding. Reused material in the barn generally has the original exterior and weathered face turned inward; these members do not.

Although the jointing of the plate and hip rafter is unknown because the plate was cut and spliced c.1880, the upper hip rafter seat remains (Photograph 40). The Culp Barn roof, dating to the same period, has a similar joining of shed roof to gable; its hip rafter detail is shown in Photograph 41.

The existing hay loft is not believed to have been part of the 1880 construction. The joists are circular sawn 2"x6"'s bearing on 2"x7" ledgers let into the south bay and threshing floor bents. The ledgers are nailed to the bents with large machine-made spikes (Photograph 42). Although it is possible that the loft was added in 1880, the absence of a hay loft door in the 1891 Tipton view suggests that this loft might date to the Army alterations after 1915. The flooring of the south bay, like that of the threshing floor, is 2" planks laid over concrete pavers by the Army after 1915.

D. ADDITIONAL EVIDENCE OF THE ORIGINAL SHED CONFIGURATION

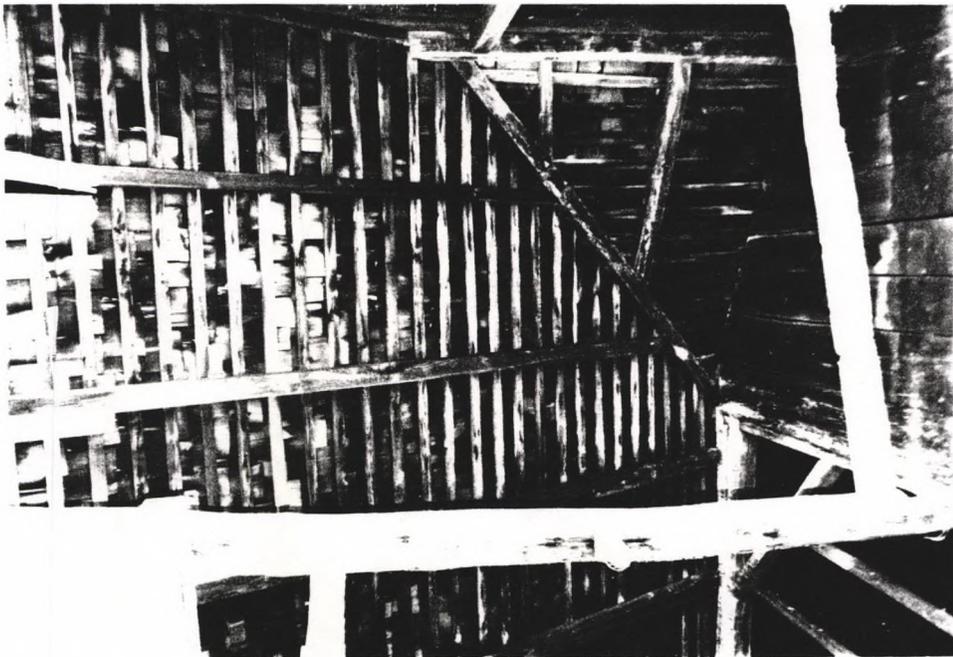
From the existing in-situ original fabric and from the photographic record, it has been ascertained that:

1. The original west elevation of the shed had no openings and was covered with random siding nailed to the end rafter, the intermediate horizontal girt, and the sill plate. The location of all of these members is defined by the existing in situ original fabric;
2. The east elevation of the shed had a single door opening adjacent to the south corner post. The elevation was covered with random siding attached to the higher bay rafter plate, the end rafter of the shed bay, to a ~~the end rafter of the shed bay, to a~~ girt let into the shed door jamb and east post of the threshing floor bent, to the sill plate, and to a diagonal brace, now missing, but to which the mortise remains. This configuration is attested to by the photographic record and the remaining in situ fabric;
3. The south elevation of the shed had no openings. It was framed with corner posts and two central posts, one flanked by two diagonal, full height braces similar to those in the threshing floor bent. A horizontal tie spanning these members midway up the eleva-



PHOTOGRAPH 40

LOWER SURFACE OF ORIGINAL PRIMARY (EASTERN) RAFTER PLATE AND THRESHING FLOOR BENT CORNER POST SHOWING DETAIL OF ORIGINAL HIP RAFTER SEAT.



PHOTOGRAPH 41

CULP BARN (GETTYSBURG N.M.P.) HIP RAFTER FRAMING.



PHOTOGRAPH 42

NORTH ELEVATION OF THRESHING FLOOR BENT. DETAIL VIEW OF ORIGINAL LOFT LADDER.

THE ORIGINAL TIE BEAMS ARE SEEN ON BOTH SIDES OF THE LADDER POST AND ARE MORTISED INTO THEM. THE UPPER HORIZONTAL TIE, LET INTO THE POSTS AND SPIKED TO THEM WITH CUT NAILS, SUPPORTS THE HAY LOFT JOISTS. THE LOFT IS NOT ORIGINAL AND WAS INSTALLED AFTER 1900.

tion was let into, and flush with, their exterior faces. The tie stiffened the frame and provided an intermediate nailing surface for the siding. Although none of the south elevation frame remains in situ, portions of these members exist as reused in the 1880 construction. These allow accurate identification of their original size.

a. Diagonal Braces:

Three features are required for identification of sections of the original diagonal braces:

1. The units should retain broken nails on their original exterior faces indicating the first siding attachment;
2. The original exterior face should have a rabbet with broken nails indicating the location and size of the former horizontal tie beam; and,
3. The rabbet should not be perpendicular to the long axis of the beam, but at an angle, for the original tie was horizontal and the brace slanted at an angle of approximately 65°.

Two members of the existing south bay frame meet these requirements: the east knee brace in the south bent (Photograph 43) and the horizontal tie between the south bent east primary and eastern

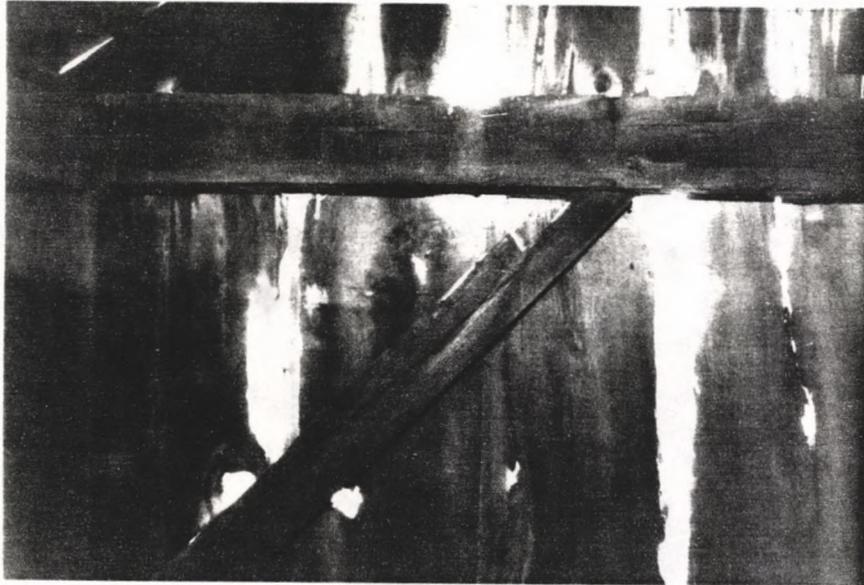
extension posts (Photograph 44). The lower member is 4 1/2"x4 1/2" hewn oak, the upper 4 1/2"x4 1/2" and also of oak hewn on four faces. Both have rabbets, 1 1/2" deep and 4 1/2" wide and the cuts are not perpendicular to the long axis of the member. Nail holes are evident in the rabbet and on the adjacent face.

b. Western Corner Post

One reused piece of structural fabric appears to meet the criteria established to identify the original shed western corner post: i.e., a fragment of that post should retain a mortise similar to that found on the west post of the threshing floor bent and which held the original west elevation knee brace.

Furthermore, it should incorporate a rabbet or bevel cut on one of the mortised faces into which the south elevation central tie beam would have been placed. A similar cut on an adjacent face would have held the west elevation girt. A reused member also should have broken nails on two adjacent faces, those with the rabbets.

One unit of reused framing in the barn meets these criteria - the central and reused joist supporting



PHOTOGRAPH 43

SOUTH BENT OF SOUTH BAY AT THE LEVEL OF THE EXISTING FUNCTIONAL  
RAFTER PLATE.

THE HORIZONTAL TIE BEAM IS PARTIALLY SUPPORTED BY THE KNEE BRACE  
SEEN IN THE CENTER OF THE PHOTOGRAPH. THE RABBET IN THE UPPER  
FACE OF THE BEAM, AND THE MANY BROKEN NAILS, INDICATE THAT THE  
MEMBER IS A REUSED PORTION OF AN ORIGINAL SOUTH SHED DIAGONAL  
BRACE.



PHOTOGRAPH 44

INTERIOR FACE OF TIE BEAM BETWEEN SOUTH BENT  
EAST CORNER AND PRIMARY POSTS, LOWER LEVEL.  
THE RABBET VISIBLE ON THE LOWER SURFACE OF  
THE BEAM INDICATES THAT THIS MEMBER WAS  
ORIGINALLY PART OF A DIAGONAL BRACE FOR THE  
SOUTH BENT OF THE SHED.

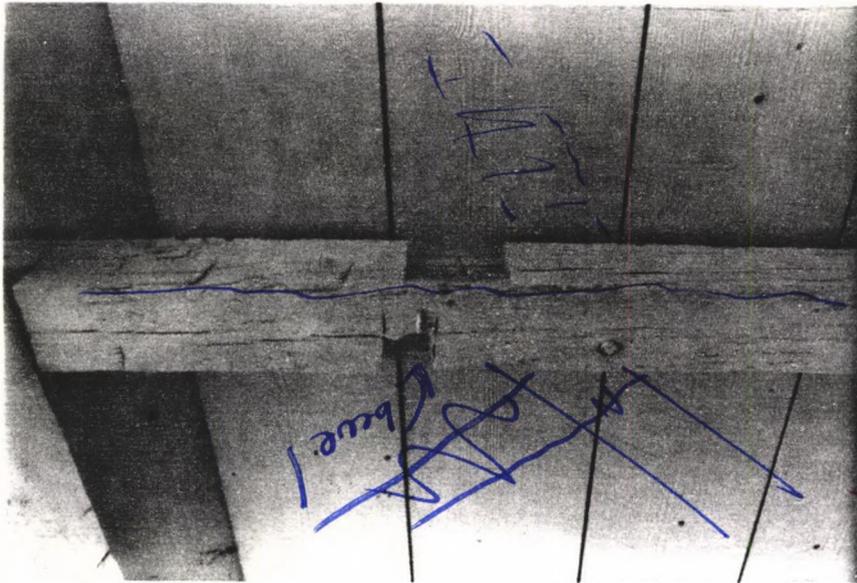
the overshoot flooring (Photograph 45 and Illustration 9). Hewn from oak, the 4 1/2"x5" beam has a 2"x6" mortise. That on the south face of the existing west post of the threshing floor bent is 2"x6 1/4" and that on the east post, 2 1/4"x6 1/4". One of the mortised faces also has a rabbet, 5" wide and 1 1/2" deep, containing five broken nails.

The rabbeted side and the adjacent face reveal a number of broken and bent nails. The second nailed face has a beveled lap mortise, 2 1/4" high and 1 1/4" deep. The locations of the mortise, beveled lap, and rabbet pinpoint the location of the original south and west elevation ties and brace.

c. Central Posts

A center post fragment should be of hewn oak, have a 4 1/2"-5" rabbet, and have broken siding nails on the original exterior face.

The post added above the east principal post in the threshing floor bent to support the 1880 principal rafter plate is 4 1/2"x4 3/4" hewn oak and retains a 1 1/2" deep, 4 1/2" wide rabbet containing four broken nails. It appears to have been a part of one of the original south shed center posts.



PHOTOGRAPH 45

BOTTOM AND SOUTH ELEVATION OF CENTRAL OVERSHOOT FLOOR JOIST. BEVEL LAP MORTISE AND RABBET ARE VISIBLE AS IS PEG HOLDING CUT TENON IN MORTISE.

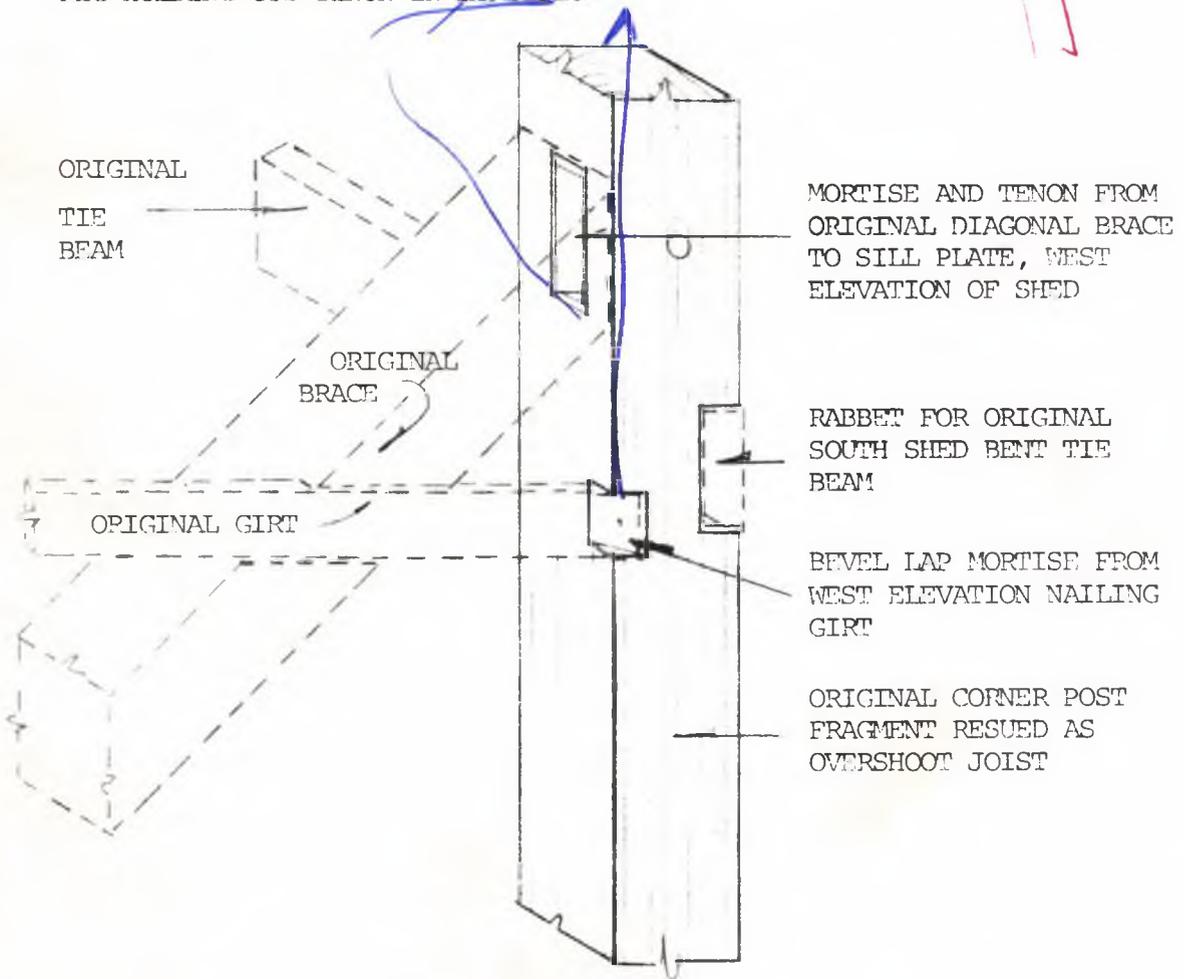


ILLUSTRATION 9

SUGGESTED ORIGINAL USE OF OVERSHOOT JOIST SEEN IN PHOTOGRAPH ABOVE.

d. Shed End Rafter

The west knee brace buttressing the 1880 post discussed above appears to have been cut from an original shed end rafter. Unlike the other reused rafters which are hewn only on one face, this fragment is hewn on four sides.

The member is 3 1/2"x3" and has shingle lath stains and broken nails 12"-13" on center on one face. The evidence for its position as an end rafter, however, is the fact that the face adjacent to the original top surface has a continuous row of broken nails, 4"-6" apart; these indicate the original points of siding attachment.

e. Shed Eave Rafter Plate

As previously noted, a portion of the threshing floor ladder and the entire south bay west elevation tie beam have nonfunctional bird's mouth mortises and/or blind mortises. As shown in illustration 10, these joints correspond with both the rafter seats remaining on the threshing floor bent and with the Gardner photograph. Furthermore, the dimensions of the blind mortises agree with the sizes of the reused members herein identified as having been part of the original shed south bent.

There is little question that these two units represent almost 12' of the original 17'6" rafter plate. The balance of the plate possibly exists in the barn fabric, but without telltail joints it is not identifiable.

The Gardner photograph makes clear that the south bent rafter plate was tied to the top of the east and west elevation tie beams and that they were supported on the south by corner posts. The original east tie remains in situ and thus, when leveled, determines the original rafter plate height. The west tie was removed when the wagon doors were installed after 1915, but its 2"x5 1/2" tenon remains in the west post of the threshing floor bent. It is 80" above existing interior floor level; the existing original beam on the east is 82". The height of these ties and the known thickness of the reused rafter plate indicate that the eave of the south shed was approximately 92" above the interior floor. Based on preliminary archeological data, the location of the the eave was approximately 8'6" above the original exterior grade.

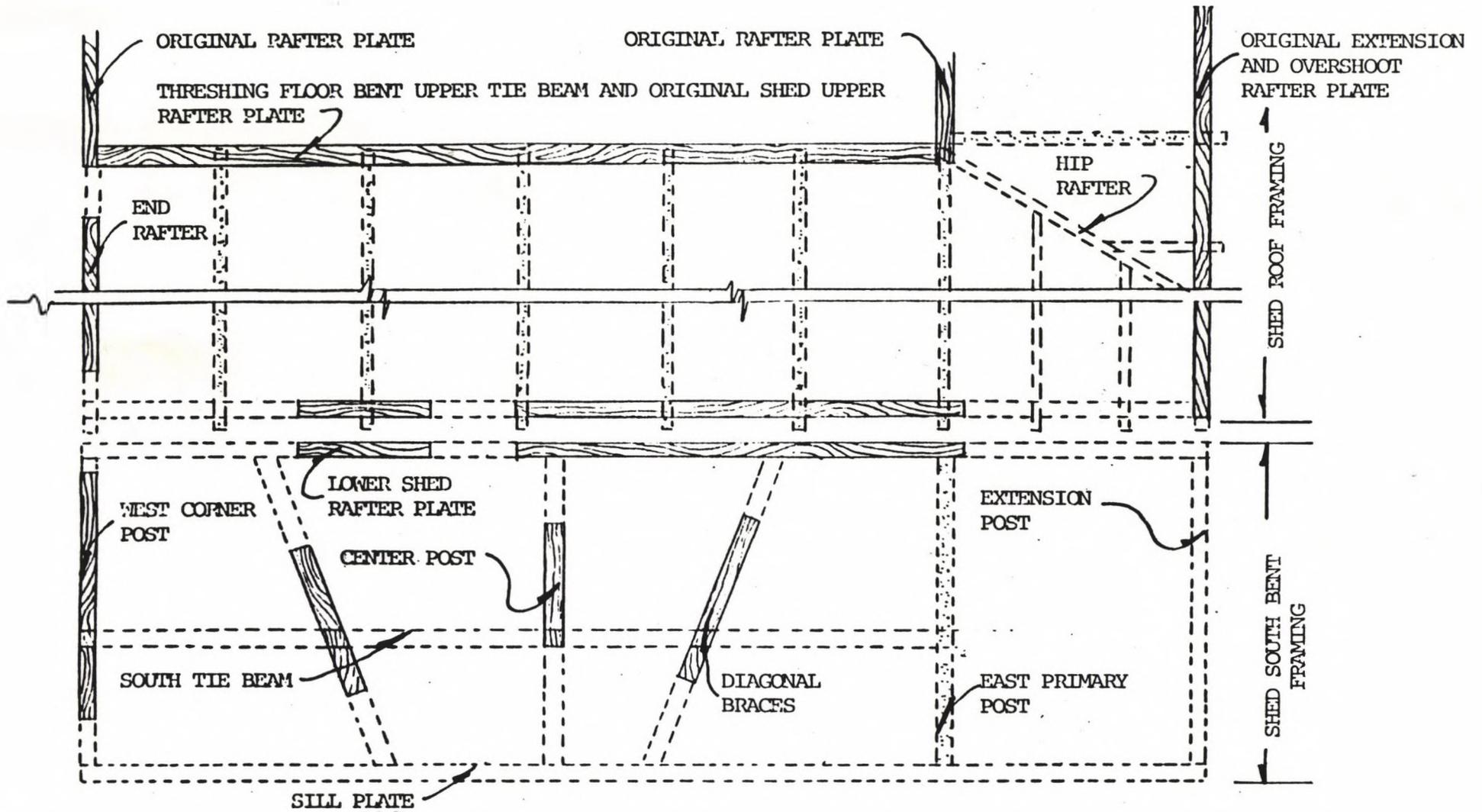


ILLUSTRATION 10

SKETCH PLAN AND ELEVATION OF SHED BAY ROOF PLAN AND SOUTH ELEVATION FRAMING. IN SITU OR IDENTIFIED REUSED FABRIC IS SHADED; REUSED FABRIC OF UNKNOWN SPECIFIC LOCATION IS STIPPLED.

f. Interior Framing

Examination of the eastern posts of the threshing floor bent reveals that two horizontal ties are missing. One, parallel to the bent, joined the eastern primary and extension posts on level with the existing ties let into the ladder, diagonal braces, and primary posts. The mortises and pegged and cut tenons for this member remain on both posts (Photograph 46) and indicate that it was approximately a 4 1/2"x4" hewn oak beam. Another cut tenon, 2"x5 1/4", remaining on the adjacent south face of the primary post, 78" above the interior floor level, originally held a girt which extended south and was joined to the post in the south shed bent. This establishes the south post location. Nailholes on the east face of the east primary post extending 5' above the level of the dirt floor indicate that a board wainscot extended south, possibly dividing a stall area in the west portion of the shed from a walkway to the east.

Table I summarizes the identified original shed fabric found reused as part of the c.1880 or later alterations to the Leister Barn.



TABLE I

FRAMING MEMBERS OF THE ORIGINAL SOUTH SHED

<u>LOCATION</u>	<u>MEMBER</u>	<u>EXISTING IN SITU?</u>	<u>EXISTING REUSED?</u>	<u>LOCATION WHERE REUSED</u>	<u>IDENTIFY FEATURES OR EVIDENCE</u>
West Elevation	Sill plate	No	Not located		
"	South corner post	No	Yes	Center over- shoot joist	Bevel lap mortise, rab- bet, mortise & numerous broken nails
"	North corner post	Yes	No	West post of threshing floor bent	
"	Eave rafter	No	Yes	Knee brace in upper threshing floor bent, east primary post	Hewn four sides, broken shingle lath nails, stains and siding nails

"	Lower shed rafter plate	No	Yes	Upper tie beam of the existing south bay west elevation and upper 33" of threshing floor bent west ladder post.	Bird's mouth mortises with rafter ends cut off and blind mortises for support posts on opposite face.
East Elevation	North post	Yes	No	East post of the threshing floor bent.	Mortises for existing original fabric mortised for two missing members.
"	South post	No	Not located		
"	Lower tie beam	Yes	No	Existing lower tie beam	Mortised for upper support post and tenoned into north post. Gardner photograph.
"	Door jamb	Yes	No	Existing north door jamb	Gardner photograph and existing fabric

"	Tie beam for posts	Partially	Not located		Tenon Remains in north post mortise
South Elevation	Center posts (2)	No	Yes	Post supporting 1880 rafter above east primary post, threshing floor bent. possibly all other posts as well.	Broken nails on one face as well as 1 1/2" deep 4 1/2"-5" wide rabbet on same face.
"	Diagonal braces (2)			The tie beam between the east extension and east primary posts, south elevation, and the west knee brace, west side of south bent, east elevation primary post	Rabbet 1 1/2" deep, 4 1/2"-5" wide, set at an angle to the long axis of the beam. Broken nails. Gardner photograph.
	Upper shed rafter plate	Yes	No	Upper tie beam of threshing floor bent.	Seven rafter seat notches with broken nails.

"	Rafter plate support post	Yes	No	Existing upper girt support	Gardner photo- graph and existing condi- tion.
"	Rafter plate	Yes (Partially)	No	Part of exist- ing upper west elevation girt.	Gardner photo- graph
"	Roof Rafters	No	Yes	Reused entirely or used as knee braces and ties.	Broken nails 12"-13" on center and stains from the original shingle lath.

V. ALTERNATIVES

Three alternatives are possible for the treatment of the Leister Barn: No Action, i.e., benign neglect; Preservation Maintenance; or, Partial Restoration to the year 1863.

A. NO ACTION

Selection of a "no action" alternative would be equivalent to the demolition of the structure. The sill plates and posts of the east elevation have decayed to such an extent that the overshoot and east extension threaten collapse. Because of this, installation of interior shoring was required in early 1985 to allow for safe archeological excavation. Because the Leister Barn is entered on the National Register and is considered of national significance, as the LCS category is "A" (must be preserved), and as its ultimate treatment has been designated as "restoration," the "no action" alternative is not considered a viable option.

B. PRESERVATION MAINTENANCE

A course of action preserving, but not restoring, the barn would not be a violation of the intent of the LCS designation, yet would postpone the recommended ultimate restoration of the structure. On-going maintenance would not preclude such eventual treatment, but considering the existing condition of the building, it does not seem to be the desired alternative. Gettysburg NMP has spent a considerable amount of time, money,

and effort restoring and interpreting the adjacent Leister House. Part of that restoration included the removal of the large, late 19th century addition to the house and the resultant reduction of the house to its smaller 1863 plan and elevation. The barn still incorporates its late 19th century addition and misleads the public as to its Civil War usefulness as a shelter and hospital. It overpowers the nearby, much smaller, residence.

A great deal of the original shed fabric remains, reused in the 1880 alterations. Restoration now will allow its reuse in its original location. Preservation maintenance would entail such extensive foundation repair, sill plate replacement, post and tie repair, and residing, that additional work on the barn in the next few decades would appear unnecessary. After such a lapse in time, much of the original fabric would probably be unusable in any restoration effort.

C. PARTIAL RESTORATION:

The recommended course of action for Leister Barn is partial restoration, i.e., the restoration of the exterior to its pre-Civil War appearance; the interior would not be restored. This is in accord with its LCS category, designated ultimate intended treatment, and with the Gettysburg General Management Plan. (Restoration should also include reestablishment of the missing orchards and restoration of the barnyard walls and fencing.) It is stated that restoration should be expedited

now because extensive structural repairs, reroofing, and residing are required, and restoration would not only lessen the necessary work because the existing south bay would be removed, but allow many original, reused, south shed members to be reincorporated into the restored shed.

Restoration of the exterior will entail:

1. Repair of the masonry foundations and the lowering of grade to an approximation of its Civil War level as determined by archeological research;
2. Removal of the west elevation subsurface drainage lines and/or extension of these southward to correct the moisture problems west and south of the barn;
3. Repair or replacement of rotted sill plates and the scabbing of new tenons and splices to existing rotted posts;
4. Repair of the original overshoot tie beams, restoration of the lower girt, and removal of the later overshoot joists and flooring;
5. Removal of the forebay window, log repair, and restoration of the shutter shown in the historic photograph;
6. Removal of the existing roof, rafters, 1880 posts and rafter plates, and reinstallation of the higher roof on

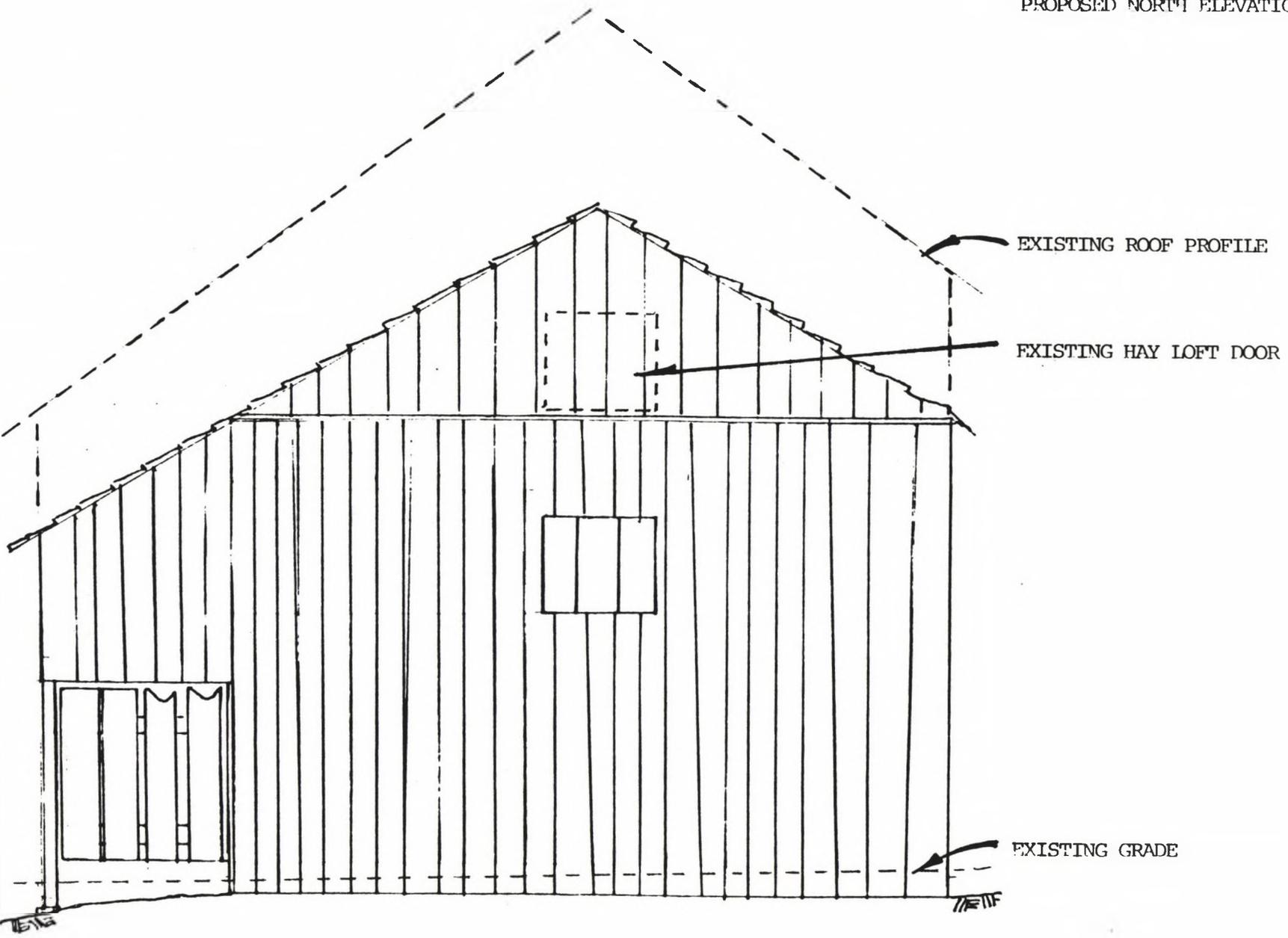
the existing, original rafter plates. This work should incorporate, where possible, all salvagable original rafters. The new roof should be of biaxially drawn shakes;

7. Removal of the existing south bay and restoration of the original shed on the existing foundation. All reused original material should be reincorporated in the restored shed or used as a template for new material;
8. The siding on the log bay should be reinstalled against the logs with the area above the original loft left unsided. All surface of the exposed logs should be treated to repel moisture and the log painted as appropriate;
9. All doors should be repaired or, if not original, replaced using the three remaining early doors as prototypes; and,
10. The battens installed after 1900 should not be replaced.

This course of action is desirable to give the Park visitor an accurate appearance of the barn at the time of the battle. Were it not for an extensive photographic record and the reuse of most of the original south shed fabric, this restoration would be highly conjectural. Fortunately, photographs were taken and much of the original fabric exists. Thus, restoration is possible with a minimum of conjecture and should be encouraged.

ILLUSTRATION 11

PROPOSED NORTH ELEVATION



Existing Roof Profile

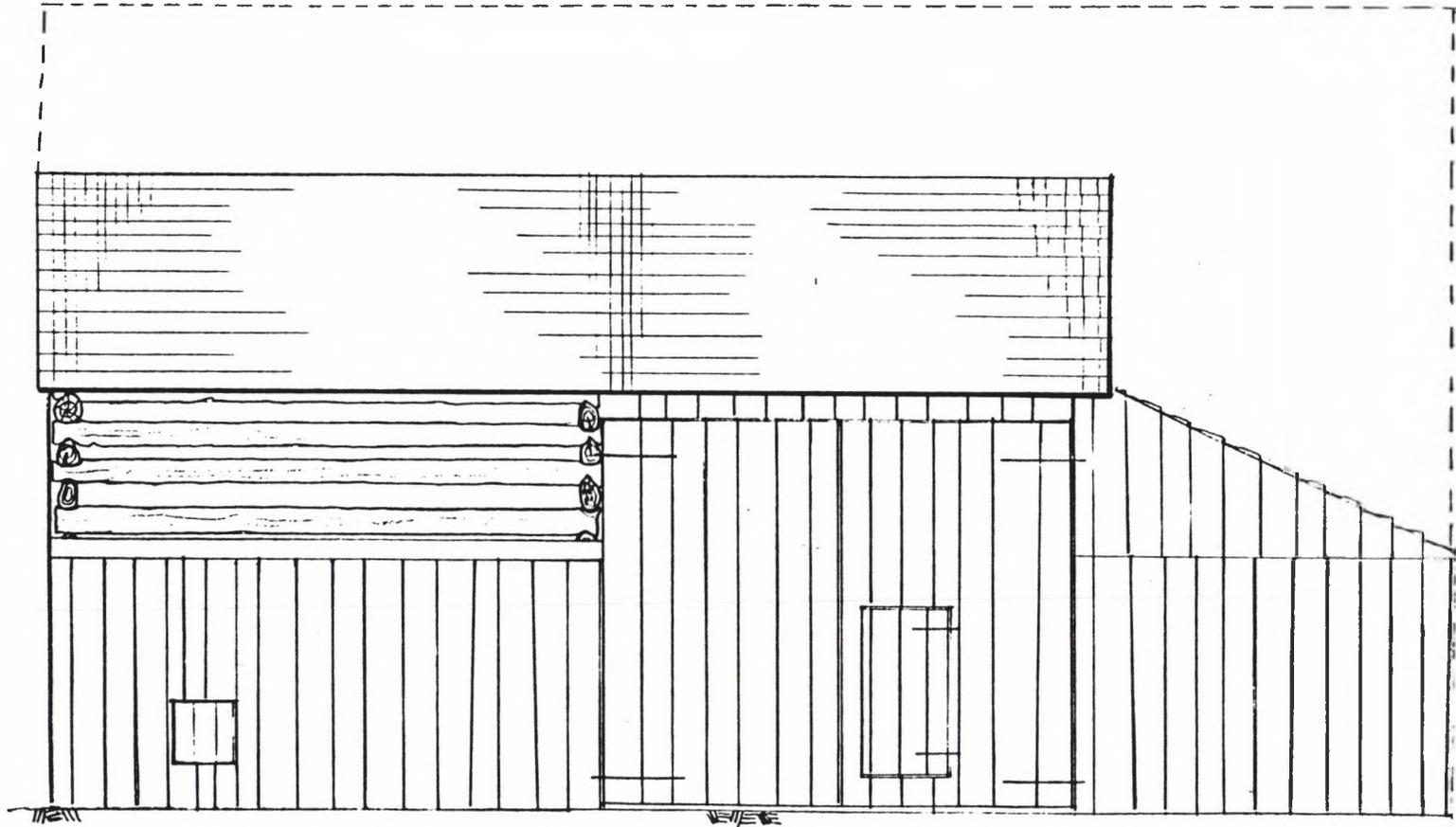


ILLUSTRATION 12

LEISTER BARN, WEST ELEVATION, PROPOSED RESTORATION

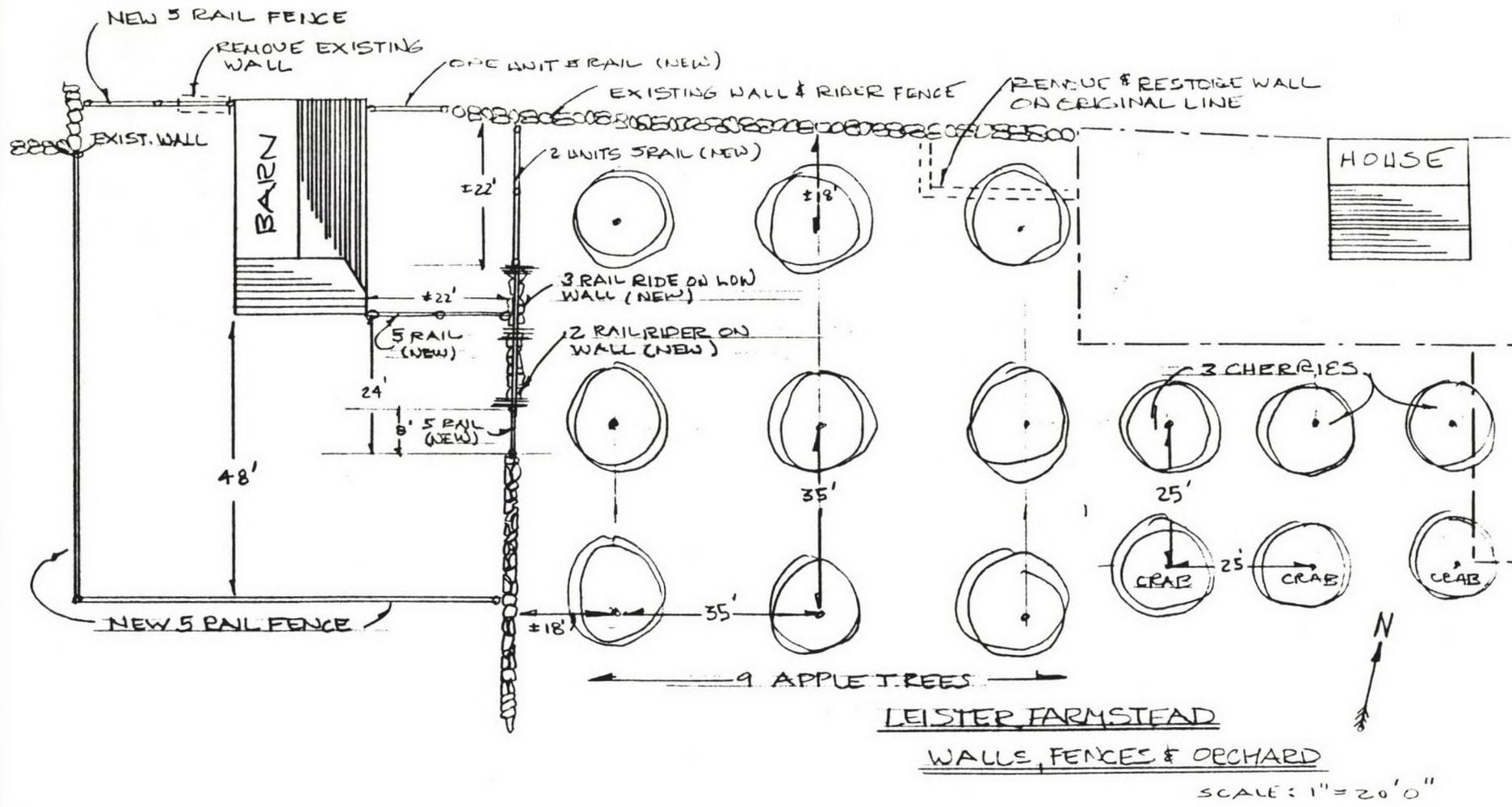


ILLUSTRATION 13 : PROPOSED LANDSCAPE RESTORATION

APPENDIX A - LCS FORMS

CLASSIFIED STRUCTURE FIELD INVENTORY REPORT  
(Attach 4"x5" B&W Photo)

NPS ORGANIZATION

REGION Mid-Atlantic PARK/AREA NAME Gettysburg Nat'l Military CODE NO. 4100

STRUCTURE NAME Leister Barn (pre Civil War) STRUCTURE NO. 74

ORDER OF SIGNIFICANCE: National  State  Local

TREATMENT RECOMMENDED: Est. Cost of Treatment Recommended: \$ 73,000

<input type="checkbox"/>	Preservation	Date of this Estimate: <u>November</u> 197 <u>5</u>
<input checked="" type="checkbox"/>	Restoration	
<input type="checkbox"/>	Reconstruction	Est. Interim Cost (other than routine maintenance)
<input type="checkbox"/>	Partial Reconstruction	pending completion of Recommended Treatment:
<input type="checkbox"/>	Adaptive Restoration	\$ <u>                    </u>

LOCATION OF STRUCTURE:

UTM REFERENCE: CLASS VI LAND ACREAGE (if not part of a complex or district: \_\_\_\_\_ acres.)  
 A 1 8 3 0 8 7 4 0 4 4 0 9 3 4 0  
 Zone Easting Northing

STUDIES REQUIRED:

<input type="checkbox"/> N	Historical Studies Plan	KEY:
<input type="checkbox"/> N	Historic Resource Study	N - not needed
<input type="checkbox"/> P	Historic Structure Report	P - programmed
<input type="checkbox"/> N	Historic Furnishing Study	C - completed
<input type="checkbox"/> R	Historic Structure Preservation Guide	U - underway
		R - required, but not yet scheduled

STRUCTURE: Type of, and composition: one-story frame and log barn

Physical Description: native stone foundation and mortared-cemented native stone wall foundation (north section)

Exterior walls: vertical board siding, east and west sides  
vertical board and board batten, north south ends  
vertical board, north and south gables  
water table board separating gable siding and wall siding

Partial apron of native stone, west side

Doors: one double-hung wagon door, west side, center  
one battén wicket door incorporated within  
one small double-hung batten carriage door, west side, southern end  
one single-hung batten loft door, north end  
one single-hung batten access door from overhang area (east side) to northern end of barn  
one single-hung batten door, east side  
one single-hung batten door, east side facing north/south (access to threshing floor from overhang area)  
one single-hung wagon door, east side to threshing floor

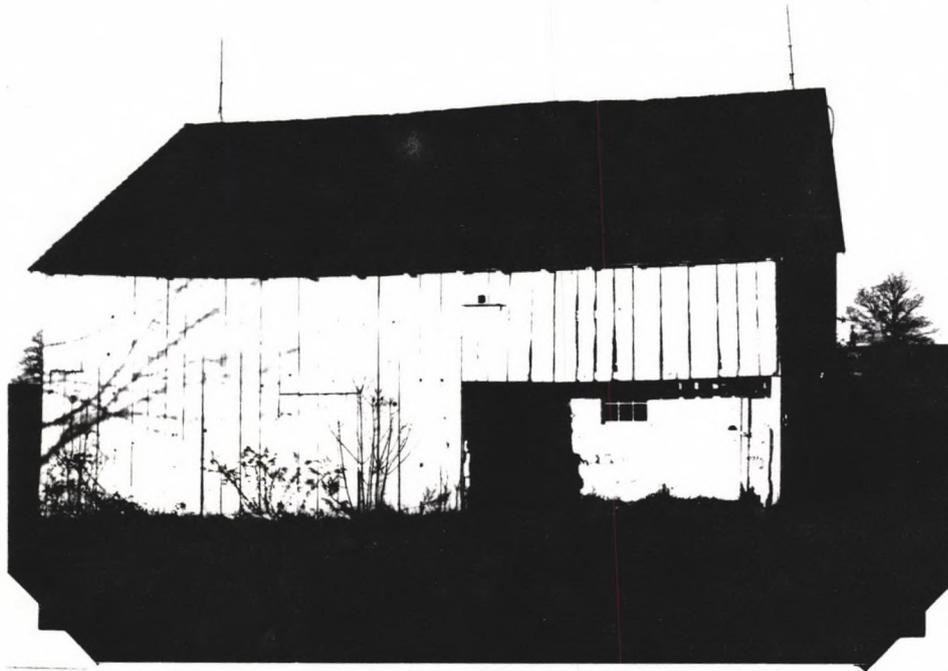
(continue on reverse if necessary)

PRESENT CONDITION: Excellent  Good  Fair  Deteriorated   
 Ruins  Unaltered  Altered  Original Site  Moved

Report prepared by:

*Th. H. ...*  
Signature

October 23, 1975  
Date



one single-hung jib mow loft door, south end  
Pere-tration: one 6-light barn sash, east side  
wood casing and frame  
no sills or lintels

Unequal double-pitch roof

longer pitch over east side, with overhang in front of  
stable area

plank and beam ceiling in overhang

split shakes

no sheathing

no cornice, open eaves

barge board

General orientation: partial overhang on east side; with major bay doors to  
carriage room and threshing area on west side; gable ends north and  
south

Interior: three areas

stall area, north end

threshing area, center

carriage area with mow loft, south end

pin and tennon joints and partial cut and nail joints

stall area with log walls

mortared stone wall foundation

earthen flooring

hewn V-notch log joints

stone and cement-mortar chinking

partial board walls

Dimensions: 20' 4" high, 37' long, and 23' wide

NATIONAL PARK SERVICE, MID-ATLANTIC REGION

WORKSHEET: CLASSIFIED STRUCTURE FIELD INVENTORY REPORT

1. PARK: Gettysburg National Military Park
2. STRUCTURE'S NAME (HISTORIC): Leister Barn (SN 74)
3. OWNER(S) BEFORE ACQUISITION: War Department, USA
4. H.P.O. NOS.: STATE: \_\_\_\_\_ 5. LOCAL: \_\_\_\_\_
6. STRUCTURE'S ADDRESS: Gettysburg National Military Park  
Gettysburg, Pennsylvania 17325

7. UTM LOCATIONS (NOTE: LINEAR STRUCTURES SUCH AS ROADS, LONG WALLS, ETC. NEED AT LEAST 2. SITES OF OVER 10 ACRES NEED AT LEAST 4)

7	8

ZONE

3	0	8	7	4	10

EASTING

4	4	0	1	9	3	4	0

NORTHING

8. ESTIMATED DATES OF CONSTRUCTION: pre-Civil War
9. ARCHITECTURAL AND/OR HISTORICAL SIGNIFICANCE:

Similar in size to the Brien barn, the Leister barn incorporates within its small framing a stable area, a threshing floor, and a mow, making it one of the two "English-type" or New England barns left on the battlefield.

Historically, it is one of two structures on the Leister Farm which was extant during the Battle of Gettysburg. The building was used as a signal station and hospital during the battle.

10. RELATION TO SCENE:

See Section 10, SN 73 Leister Farm House

11. STRUCTURE'S PRESENT CONDITION:

Poor

12. TREATMENT RECOMMENDED:

EXTERIOR

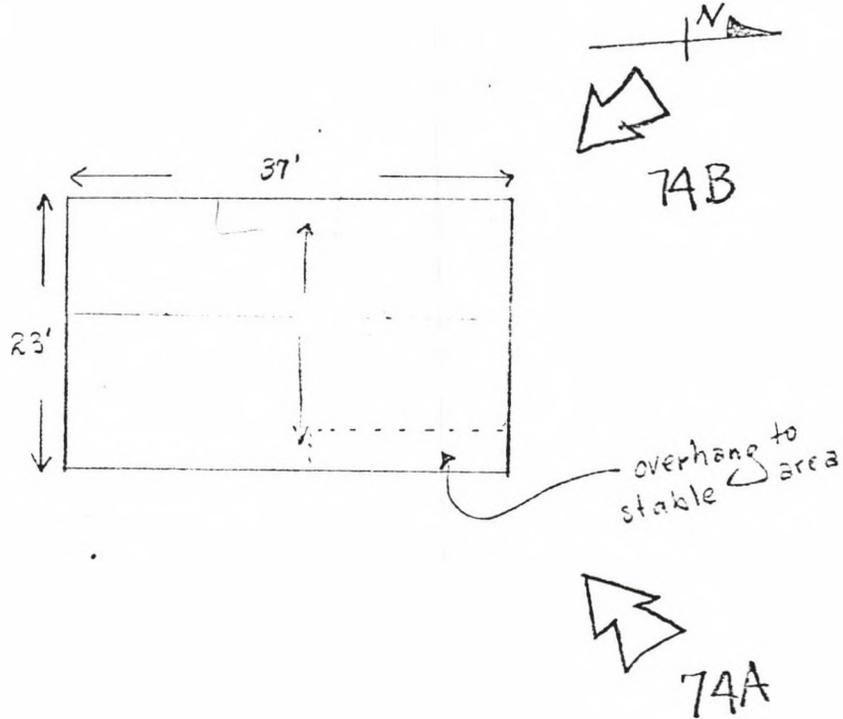
<input type="checkbox"/>	STABILIZATION
<input type="checkbox"/>	PRESERVATION
<input checked="" type="checkbox"/>	RESTORATION
<input type="checkbox"/>	TOTAL RECONSTRUCTION
<input type="checkbox"/>	PARTIAL RECONSTRUCTION
<input type="checkbox"/>	ADAPTIVE RESTORATION
<input type="checkbox"/>	NO WORK REQUIRED

INTERIOR

<input type="checkbox"/>	STABILIZATION
<input type="checkbox"/>	PRESERVATION
<input checked="" type="checkbox"/>	RESTORATION
<input type="checkbox"/>	TOTAL RECONSTRUCTION
<input type="checkbox"/>	PARTIAL RECONSTRUCTION
<input type="checkbox"/>	ADAPTIVE RESTORATION
<input type="checkbox"/>	NO WORK REQUIRED

13. PARTS NEEDING SPECIAL ATTENTION:     All    

14. SKETCH PLAN: (Show approximate overall dimensions, northpoint, positions of camera)



15. WAS NATIONAL REGISTER FORM APPROVED? (Attach copy)

YES  NO

16. ADDITIONAL DATA FOR ITEM 15 ABOVE.

See Section 16, SN 73 Leister Farm House

17. ESTIMATED COSTS:

FOR PLANNING STUDIES (Identify)\*\*\*\*\*\$           --          

FOR HISTORIC STRUCTURES REPORT\*\*\*\*\*\$           13,000\*          

PART 1  PART 2  PART 3  PART 4

FOR EXTERIOR STABILIZATION\*\*\*\*\*\$           --          

FOR ADDITIONAL EXTERIOR TREATMENT AS RECOMMENDED\*\*\*\$           30,000          

FOR ADDITIONAL INTERIOR TREATMENT AS RECOMMENDED\*\*\*\$           30,000          

FOR ANY OTHER WORK NOT COVERED ABOVE (Itemize)

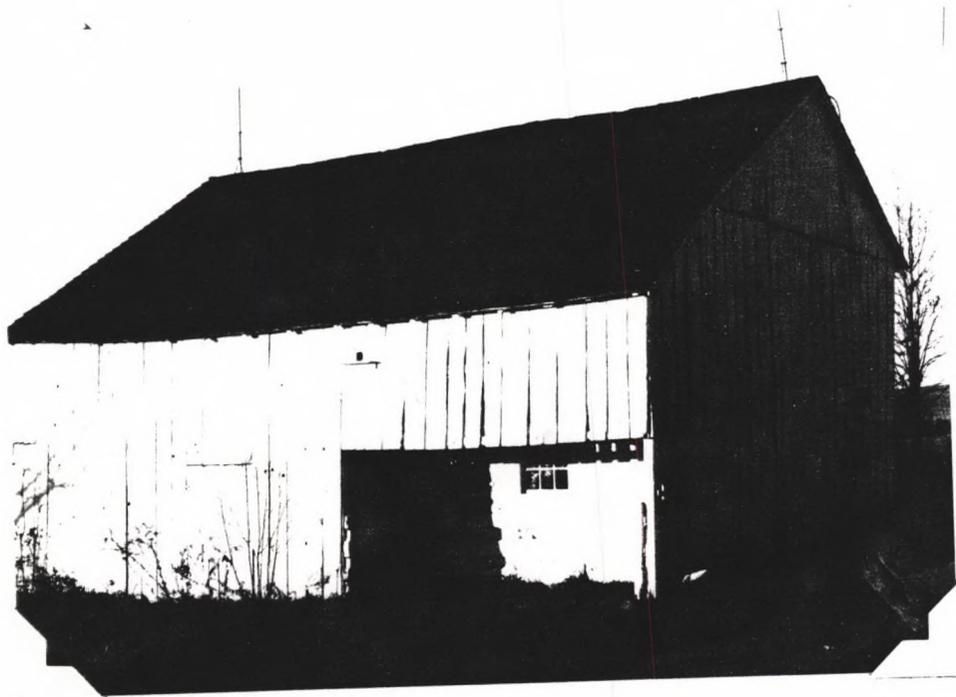
\*Includes Historic Structure Reports for other outbuildings included on Package #134 Restoration of Leister Farm; also includes Historic Structure Preservation Guides

FOR TOTAL COST OF TREATMENT, AS RECOMMENDED\*\*\*\*\*\$           73,000          

18. PREPARED BY:           Nick Hamilton           DATE:           12/23/78

WORKSHEET 1 PARK: \_\_\_\_\_ STRUCTURE: \_\_\_\_\_

19. PHOTOGRAPHS OF STRUCTURE



71A



71E

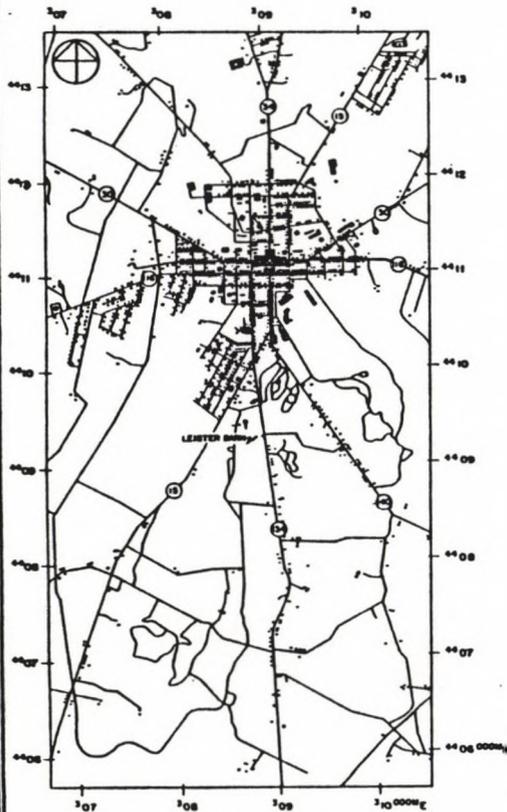
APPENDIX B - HABS DRAWINGS

## LEISTER BARN

THE LEISTER BARN IS ONE OF TWO PRE-CIVIL WAR STRUCTURES WHICH EXISTED ON THE LYDIA LEISTER FARM DURING THE BATTLE OF GETTYSBURG. IT IS A ONE STORY "ENGLISH-STYLE" FRAME AND LOG BARN, INCORPORATING A MAIN THRESHING FLOOR, WAGON BAY, AND STABLES. THE NORTHERNMOST STABLE AND LOFT IS THE OLDEST PART OF THE BARN, AS SEEN IN ITS LOG CONSTRUCTION. THE GROUND LEVEL STABLE WALLS ARE CHINKED, WHEREAS THE UPPER LOFT WALLS ARE NOT. THE EAST WALL OF THE STABLE IS EXPOSED UNDER THE FOREBAY AND THE NORTH AND WEST WALLS ARE COVERED WITH VERTICAL BOARD AND BATTEN SIDING. THE CENTRAL THRESHING FLOOR IS PLANKED AND HAS NO TRUE LOFT, SAVE FOR SIX LOGS WHICH ARE UNATTACHED AND LAY ACROSS THE UPPER BEAMS FOR LUMBER STORAGE. THE WAGON BAY FLOOR IS ALSO PLANKED AND HAS A LOFT WHICH EXTENDS OVER THE ENTIRE BAY.

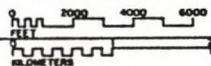
THE ROOF OF THE BARN WAS LATER RAISED BY ADDING VERTICAL POSTS TO THE UPPER PLATES OF THE ORIGINAL STRUCTURE. THE ORIGINAL RAFTER-NOTCHED TOP PLATES WERE NOT REMOVED AND NOW EXIST IN THE EAST AND WEST WALLS OF THE BARN. FURTHER ROOF ALTERATIONS ARE EVIDENT. AN 1863 PHOTOGRAPH SHOWS THAT THE SOUTHERNMOST WAGON BAY WAS ONCE COVERED WITH A LEAN-TO ROOF. RAFTER NOTCHES ALSO EXIST IN THE FORMER TOP PLATE OF THE LEAN-TO, WHICH IS LOCATED IN THE SOUTH WALL OF THE MAIN THRESHING FLOOR. ALL MAJOR STRUCTURAL MEMBERS OF THE BARN ARE OF ROUGH-HEWN OAK CONNECTED BY MORTISE AND PINION JOINTS.

THE BARN DATES FROM AS EARLY AS 1848, WHEN THE PROPERTY WAS OWNED BY HENRY BISHOP. IT WAS SOLD TO LEISTER IN 1861 AND WAS HER HOME AT THE TIME OF THE BATTLE. THE HOUSE SERVED AS HEADQUARTERS FOR MAJOR GENERAL GEORGE S. MEADE, COMMANDER OF THE UNION ARMY. THE BARN SERVED AS A TEMPORARY FIELD HOSPITAL AND SIGNAL STATION, AND SUFFERED SEVERE BATTLE DAMAGE. IN THE MONTHS FOLLOWING THE BATTLE THE BARN WAS REPAIRED AND ALTERED. THE FARM WAS PURCHASED BY THE GETTYSBURG BATTLEFIELD MEMORIAL ASSOCIATION IN 1888. THE HOUSE AND BARN HAVE BEEN CONSTANTLY MAINTAINED SINCE THEN, AND THE BARN HAS REMAINED VIRTUALLY UNCHANGED WITH ONLY A FEW EXCEPTIONS. THE INTERIOR OF THE STRUCTURE WAS "REARRANGED TO ACCOMMODATE FOR STORAGE" IN 1938 BY THE NATIONAL PARK SERVICE, THOUGH NO DOCUMENTATION OF THE WORK EXISTS. THE EXISTING WOOD SHINGLE ROOF WAS APPLIED TO THE BARN IN THE EARLY 1960'S, AND RECENT MAINTENANCE HAS INCLUDED PAINTING, REPLACEMENT OF ROTTED SIDING, AND REPLACEMENT OF DOOR BOARDS.



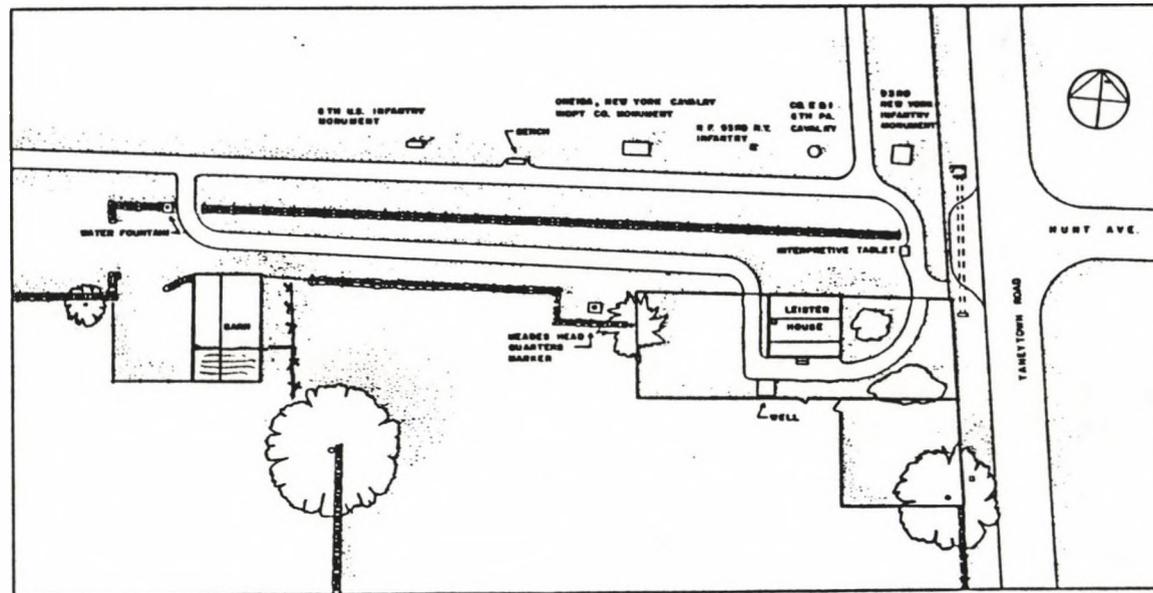
TAKEN FROM USGS 1931 FAIRFIELD & GETTYSBURG QUADRANGLES  
PENNSYLVANIA - ADAMS CO. UTM-18 308749 4409340

### LOCATION MAP



THE DOCUMENTATION OF THE LEISTER BARN IN GETTYSBURG NATIONAL MILITARY PARK, GETTYSBURG, PENNSYLVANIA WAS UNDERTAKEN BY THE WASHINGTON, D.C. OFFICE OF THE HISTORIC AMERICAN BUILDER SURVEY (HABS) AND WAS CO-SPONSORED BY THE MID-ATLANTIC REGIONAL OFFICE AND THE GETTYSBURG NATIONAL MILITARY PARK OF THE NATIONAL PARK SERVICE.

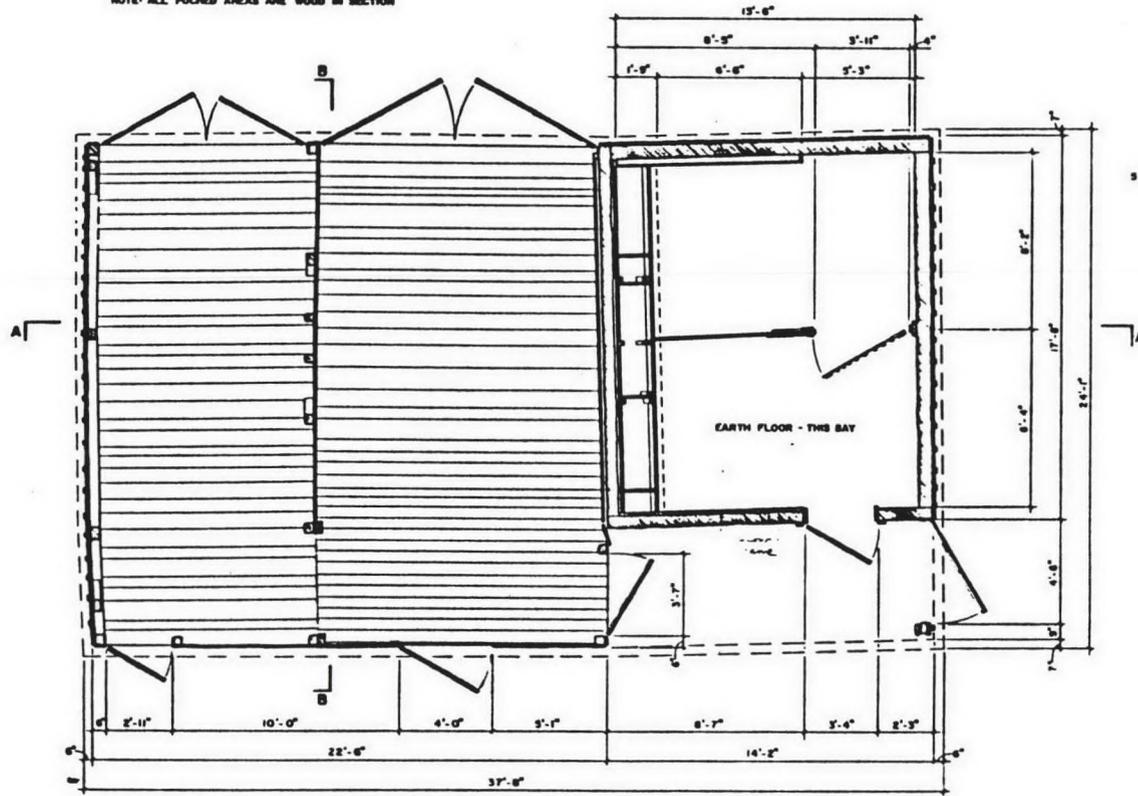
THE HABS FIELD RECORDING PROJECT WAS CONDUCTED BY THE HABS / HABS DIVISION, ROBERT J. RAPCH, CHIEF AND WAS ORGANIZED AND DIRECTED BY GLENNE L. ANDERSON, PRINCIPAL ARCHITECT, HABS, IN CONSULTATION WITH REED ENBLE, HISTORICAL ARCHITECT, MID-ATLANTIC REGION. THE MEASURED DRAWINGS WERE PRODUCED DURING THE SUMMER OF 1994 IN THE HABS GETTYSBURG FIELD OFFICE BY ARCHITECTURE TECHNICIANS, JOSEPH M. ROEBER (UNIVERSITY OF ILLINOIS) AND ROBERT S. NEVITY (UNIVERSITY OF PENNSYLVANIA) AND JOHN S. WEISER, PARK TECHNICIAN, GETTYSBURG NATIONAL MILITARY PARK.



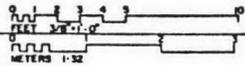
JOSEPH M. ROEBER, ROBERT S. NEVITY, 1994  
HABS GETTYSBURG FIELD OFFICE, WASHINGTON, DC  
RECORDED PROJECT: 18-308749-4409340  
DATE: 01/11/2000

LEISTER BARN  
TANNTOWN ROAD (STATE ROUTE 131) & HURST AVE., GETTYSBURG, PA  
ADAMS COUNTY, PENNSYLVANIA

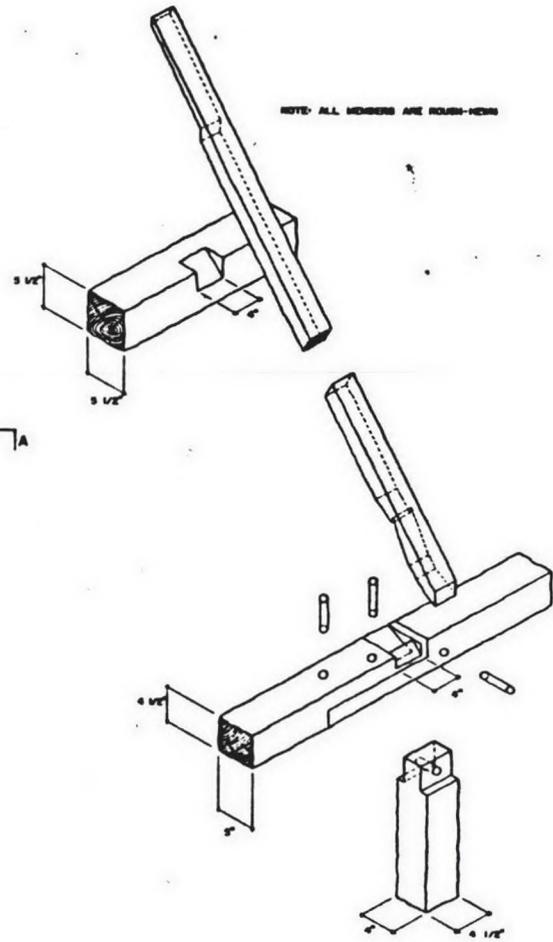
NOTE: ALL POCHED AREAS ARE WOOD IN SECTION



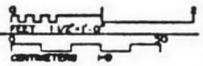
FLOOR PLAN



NOTE: ALL MEMBERS ARE ROUND-HEM



A. FOREBAY RAFTER / LAP JOINT  
DETAIL



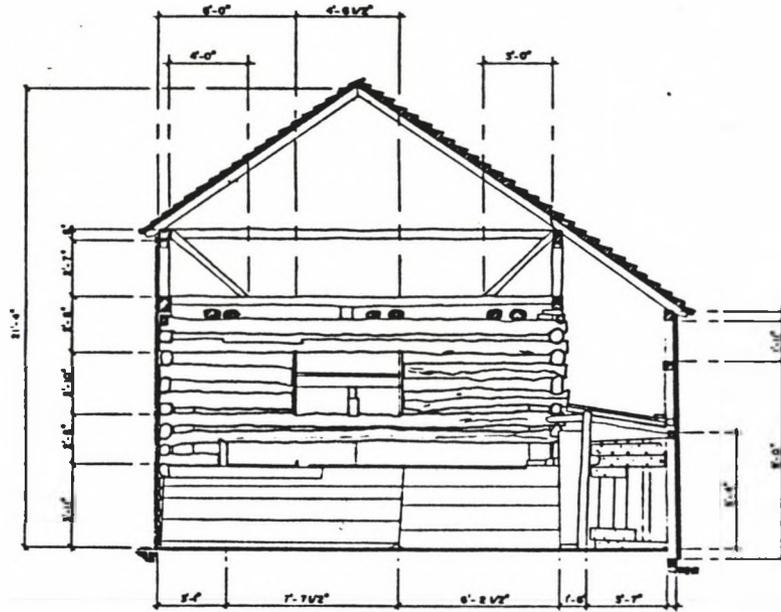
DESIGNED BY: JOSEPH W. ROSS & ROBERT HEWITT, 1984  
GETTYSBURG NATIONAL MILITARY PARK PROJECT

LEISTER BARN  
TANEYDOWN ROAD (STATE ROUTE 134) S HUNT AVE. GETTYSBURG NAT MIL PK. ADAMS COUNTY - PENNSYLVANIA

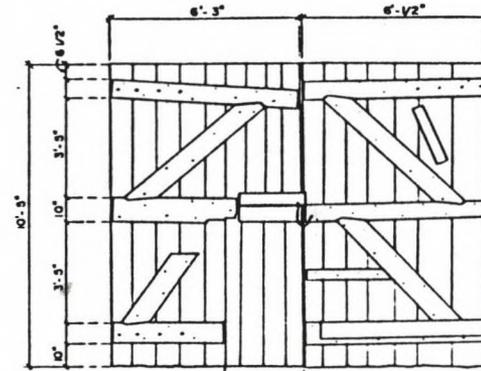
DATE: 10-1-84  
DRAWN BY: J. W. ROSS  
CHECKED BY: R. HEWITT



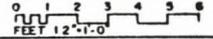
LOGS & BEAMS ARE ROUGH HEWN  
BOARDS ON WALL ARE 1" THICK.



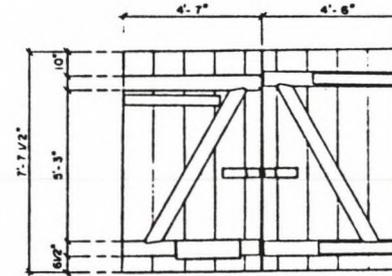
SECTION



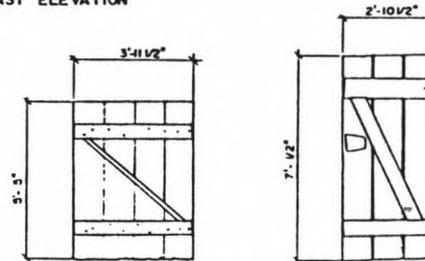
THIS SECTION RE-PLACED 5/1988

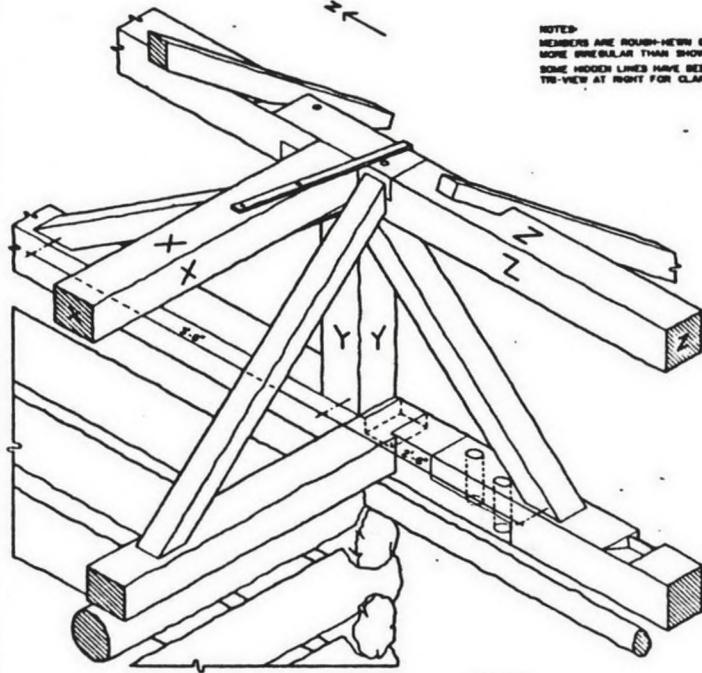


MAIN DOORS, WEST ELEVATION  
WAGON SHED DOORS, WEST ELEVATION



ACCESS DOORS, EAST ELEVATION

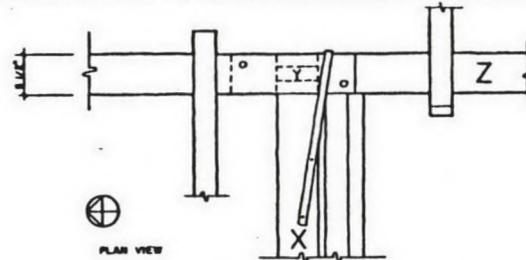




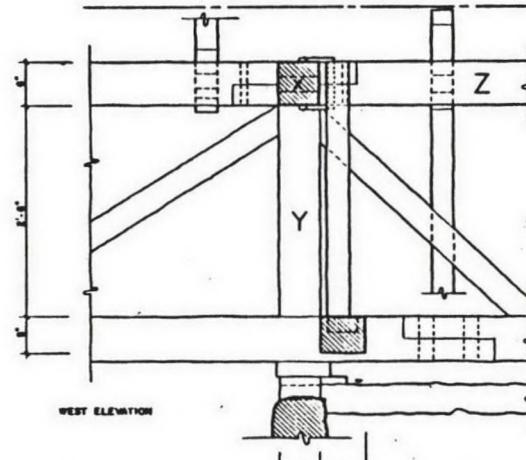
NOTES:  
MEMBERS ARE ROUGH-Hewn & ACTUALLY  
MORE IRREGULAR THAN SHOWN  
SOME HIDDEN LINES HAVE BEEN OMITTED FROM  
THIS VIEW AT RIGHT FOR CLARITY

ISOMETRIC

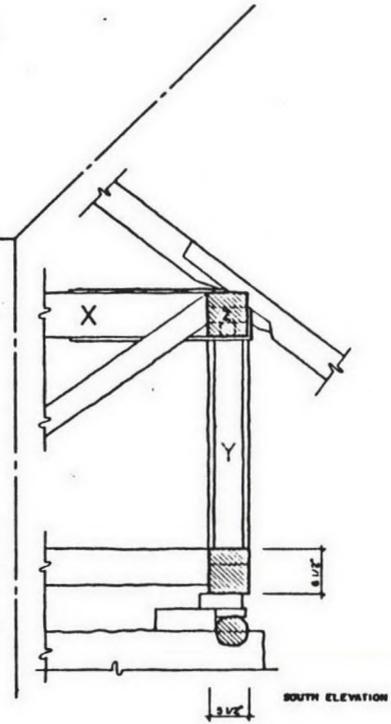
E. FRAMING AT UPPER  
STALL FOREBAY



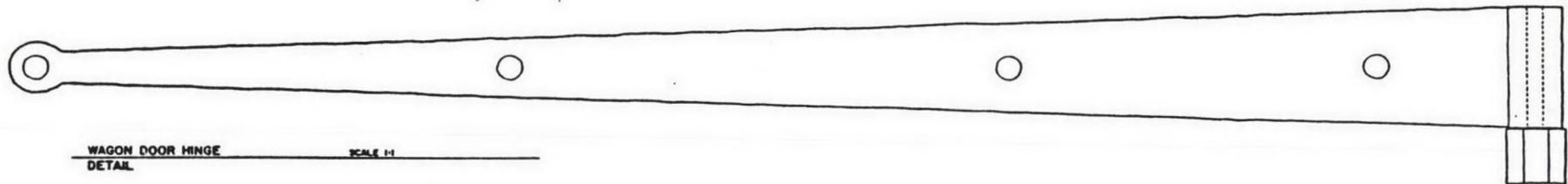
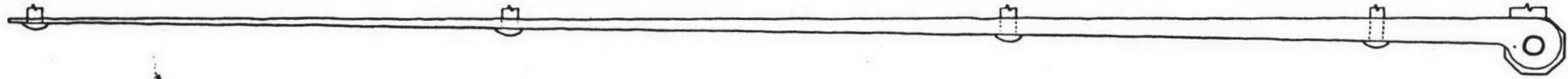
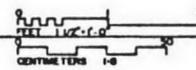
PLAN VIEW



WEST ELEVATION



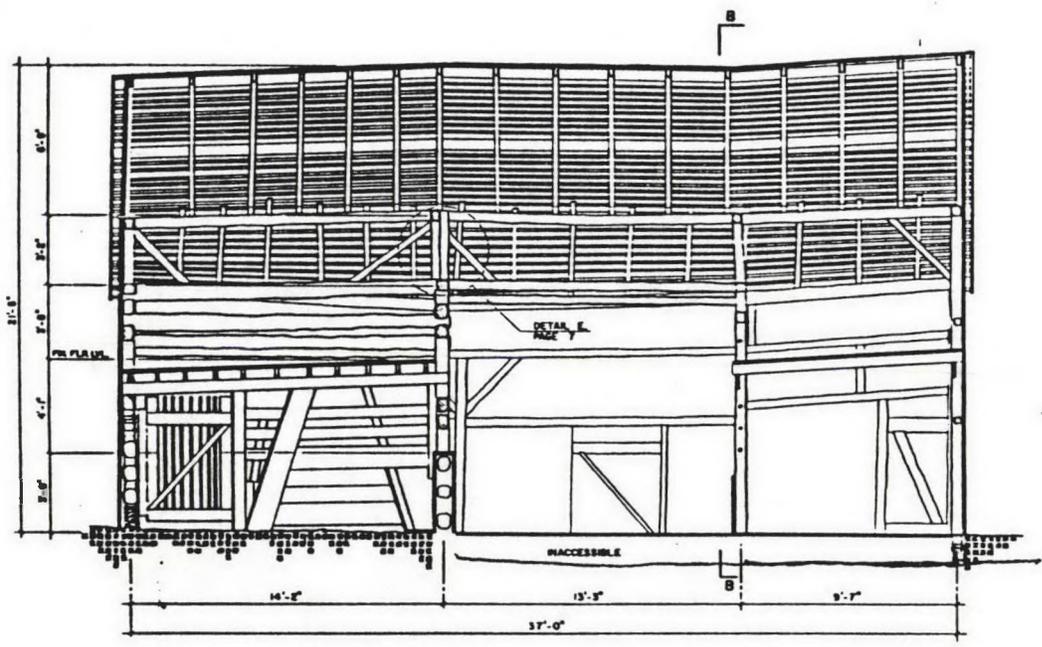
SOUTH ELEVATION



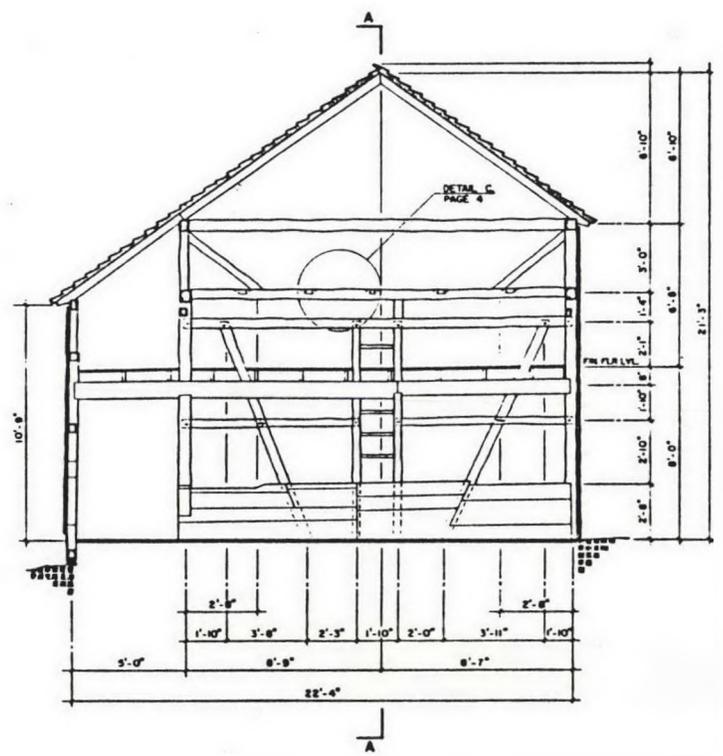
WAGON DOOR HINGE  
DETAIL

SCALE 1/4"

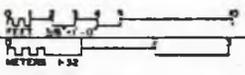


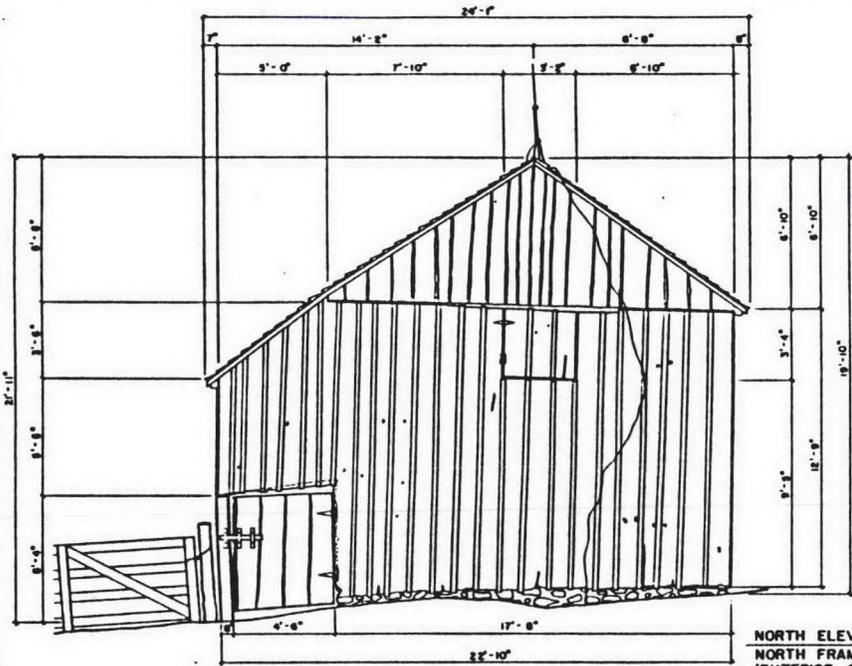


SECTION A-A

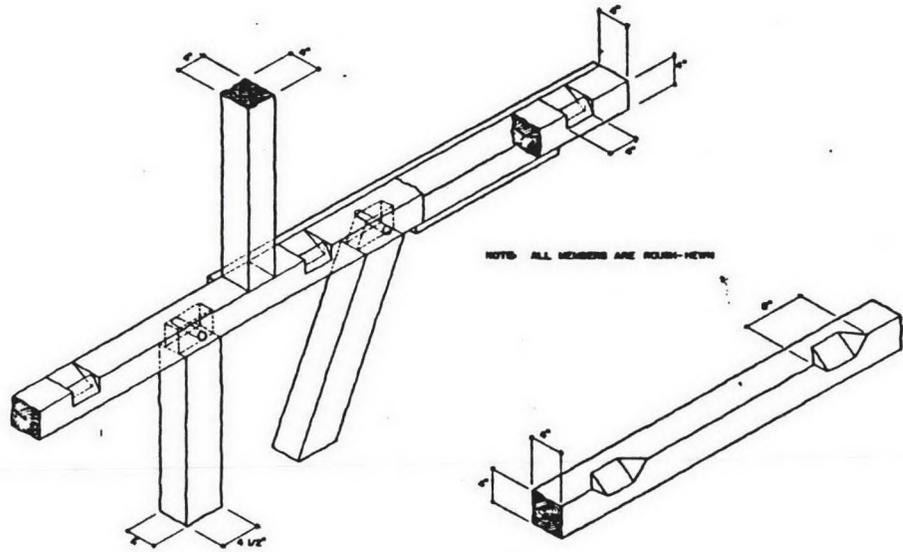


SECTION B-B



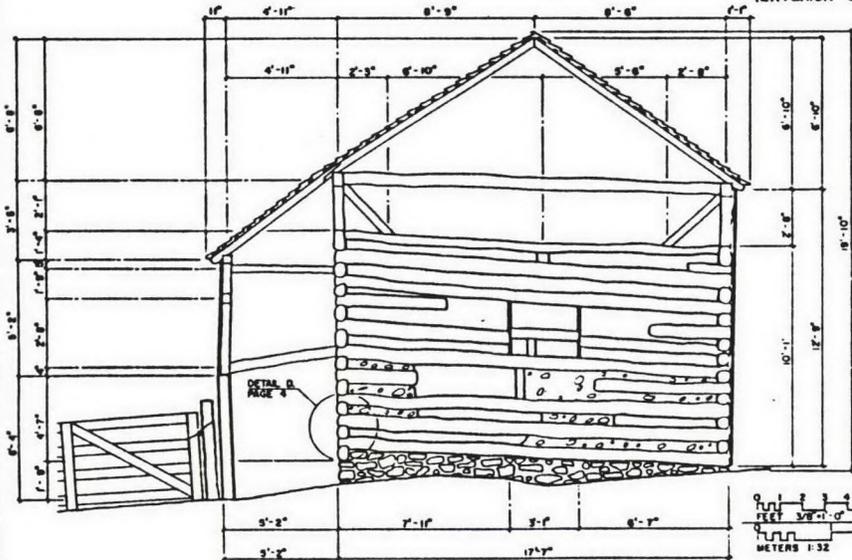


NORTH ELEVATION  
NORTH FRAMING ELEVATION  
(EXTERIOR SIDING REMOVED)

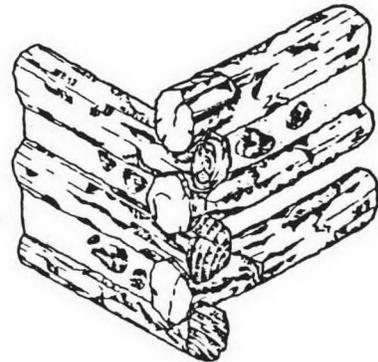


B. FORMER TOP PLATE / KNEE BRACING  
DETAIL

C. FORMER LEAN-TO TOP PLATE  
DETAIL



D. CORNER / LOG CONSTRUCTION  
DETAIL



D. CORNER / LOG CONSTRUCTION  
DETAIL

NOTE: ALL MEMBERS ARE ROUND-HEM

APPENDIX C - CORRESPONDENCE  
AS RELATING TO THE PROPOSED RESTORATION  
OF LEISTER BARN, GETTYSBURG

NMP



# United States Department of the Interior

NATIONAL PARK SERVICE

P.O. BOX 37127

WASHINGTON, D.C. 20013-7127

G 4/4

IN REPLY REFER TO:  
H30(422)

MAR 18 1985

## Memorandum

To: Regional Director, Mid-Atlantic Region  
From: Associate Director, Cultural Resources  
Subject: Restoration of Barns at Gettysburg National Military Park

We have reviewed your request to restore the Leister and McClean Barns at Gettysburg National Military Park. The proposed work at the Leister Barn appears to meet policy and we conceptually approve this project subject to review of the Historic Structures Report when it is completed. We do not approve the restoration of the McClean Barn at this time since the work does not seem to be essential for the understanding of the site. However, we will consider the restoration proposals when they are fully developed in detail in the Historic Structures Report for this barn.

APPENDIX D

CRM Article on  
on Bi-axial Shakes

## RESURRECTION OF A ROOFING

### Introduction

The importance of historic photograph collections as restoration aids was again verified in the rediscovery of a roofing technique generally long forgotten, but now believed to have been commonly used in Mid-Atlantic vernacular construction. First noted in a Matthew Brady photograph of the Brian House and bake oven (Gettysburg N.M.P.) taken shortly after the battle of Gettysburg,<sup>1</sup> the roofing was believed to be clay tiles, a not uncommon form of early covering in Pennsylvania, which indeed it resembles. Reexamination of the photograph led, however, to the eventual recognition that the roofing was not tile, but in fact drawn shakes laid in what was at first considered a highly unusual manner. Subsequent archival and field research has revealed that this roofing type, herein called biaxially tapered shakes for lack of a better name, was common in areas of Germanic settlement through the latter part of the nineteenth century.

The earliest documented use of biaxially tapered shakes known to this author is at the Hans Herr House (1719) in Willow Street, Pennsylvania. The three story stone house would not have been out of place in any of the small villages in southern Germany in the 16th and 17th centuries, nor would have the restored buildings at the Ephrata Cloisters (1736-1749) nearby. The curatorial collections at both Museums preserve early, if not original, samples of biaxial shakes.<sup>2</sup> The roofing

material is also found on the restored Ellicott-Sehner House (Lancaster, PA), Susannah Wright House (Columbia, PA, c. 1740), Plow Tavern (York, PA,) Joseph Sherrick (Sherk) House (Antietam N.M.P., c.1835),<sup>3</sup> and the Johnson Farmstead (Peaks of Otter, Blue Ridge Parkway, c. 1855).<sup>4</sup> Examination of other period photographs has revealed that the Sharpsburg Lutheran (German Reformed) Church outside Antietam had a similar roof in September, 1862.<sup>5</sup>

The past restoration of buildings built after c.1840 suggests that the roofing style was discontinued by the mid-nineteenth century, but the photographic record of Brady and his followers indicates that at the time of the Civil War no less than sixteen buildings in the Gettysburg area had biaxially tapered shake roofs, and that several of them were reroofed in the same manner after the war, in one case as late as 1880.

The rediscovery of the extensive use of the biaxially tapered shake roof is certainly a small factor in the physical interpretation of 18th and 19th century sites, yet its reuse, where justified, will add a richness to structures that is not found with ordinary wood shingles or shakes. The vertical alignment of the edges, the regularity of shadows, and the greater horizontal density of shakes compared to the longer vertical exposure all combine to form a pleasing pattern that, once discovered on old photographs, is instantly recognized.

## Biaxially Tapered Shakes

Examination of early or original examples of biaxial shakes revealed several common features:

1. all were riven from oak, generally Northern Red Oak (Quercus rubra);
2. all were 34"-36 inches in length, 5"-8" in width;
3. all were drawn after being split and were tapered both longitudinally, as is typical, and laterally, the key to the installation of this roofing type; the shakes generally tapered from 1/2" in thickness to a feathered edge in both directions; and,
4. all examples of used shingles exhibited nailholes on the thicker third, i.e., the exposed face or butt end.

These physical findings are verified in careful examination of the early photographs at Gettysburg. Counting courses from eave to ridge on existing, unaltered barns revealed that the early shingle exposures averaged +12" on the rise, i.e. the vertical dimension. The photographs also show clearly the distinctive manner in which the roofing was laid: each shake laps over one adjacent shake across the course, as well as lapping

over the next one down the slope of the roof (see Illustration        ). The covered portion of the lapped shake appears to have been typically 1 1/2"-2 1/2" leaving a total exposure of approximately 3 1/2"-5 1/2"x12", depending on the width of the original shake (5"-8").

The width of the individual first course shakes was important because it defined the width of each subsequent shake in the same location in the overlying courses; only by matching widths from eave to ridge was it possible to achieve the vertical linearity of edges that at first resembles that found in tile roofs.

The early photographs also reveal the details of the starter course, a pattern not reproduced in the several restorations based on discarded, or broken, i.e. not in situ, early shakes: the starter course was lapped in the reverse direction to the rest of the roof. Clearly evident was the fact that the starter course members usually lapped toward the direction of the prevailing storms (in Gettysburg to the north, northwest, or southwest) while the finished, or exposed, shakes lapped away from the storms toward the northeast, east, or southeast.

Judging from the early shakes in collections, from the restorations, and from the photographs, each shake was nailed but once and in the lower, non-tapered corner, 2"-3" up from the butt and 1"-2" from the edge. The adjacent horizontal course shake, once nailed, would provide a second attachment, and two more nailings on the next shake on the course above.

The third course up to the ridge may or may not have provided a third pair of nailings near the upper feathered edge of the first shingle, depending on whether it was a full 36" in length.

Examination of the restored roofs bears testimony to a constant concern - leakage. Some of the roofs at Ephrata had been interleaved with 90 lb roofing felt in concern for the feeling that this type of roof "could not" be tight. The roof does not leak, but excessive curling of the shakes seems to have been the result of a lack of adequate ventilation. Surprisingly, the shakes at Hans Herr House, laid without felt, on 1"x3" lath, show no evidence of leakage. Also there is less light penetration as observed from below, than would be expected from a typical sawn shingle roof. Furthermore, the overall curling seems far less pronounced, and is generally limited to the south facing side of the roof, where rapid drying is most severe and where roof replacement is usually first required.

#### Conclusion

The use of historic photographs has, in this case, initiated the research necessary to verify and resurrect a vernacular form of roofing not known to have been restored on any 19th century structures in the Mid-Atlantic Region. Yet this roofing now appears to have been common in Pennsylvania, Maryland, and possibly, Shenandoah Valley Germanic settlements in the 17th century through at least 1880.<sup>6</sup> Perhaps by reexamination of park and local photographic archives, the distribution of biaxially tapered shakes will be confirmed in similar communities throughout the East and Mid-West and restored to park structures when appropriate.

FOOTNOTES

<sup>1</sup>Special thanks are due to Kathy Georg, Historian, and John Heiser, Architectural Technician, Gettysburg NMP, for many hours spent examining park photograph collections. Also to Robert Vorhees, Preservation Specialist at Gettysburg, with whom the author visited Ephrata Cloisters and the Hans Herr House.

<sup>2</sup>Thanks to Earl B. Groff, Curator of the Hans Herr House, and Nadine Steinmetz, Administrator of Ephrata Cloisters, for allowing the study of the original and/or early biaxially tapered shakes in their collections.

<sup>3</sup>Betty Otto, Park Technician at Antietam NMP, provided much useful information establishing early German settlement in Sharpsburg. Joseph Sherrick (originally Sherk) was married to Barbara Miller; she was of German descent. The Sherks purchased their 200 acres late in the 18th century from one Henry Orndorf.

<sup>4</sup>Steve Beatty, Historian at Blue Ridge Parkway, indicates that there were several early Germanic communities on the Shenandoah Valley side of the Blue Ridge Parkway and that several in-laws of Johnson family had Germanic surnames.

Jim Askins, Chief, Preservation Training Center, Williamsport, restored the roof on the Farmstead. Askins notes that the original shakes were red oak, 32" in length, and were biaxially tapered. Unlike other examples cited in this article, they were not face-nailed, but blind-nailed.

<sup>5</sup>The Alexander Gardner photograph of September, 1862, is reproduced in Divided We Fought, Hirst D. Milhollen, Milton Kaplan, and Arthur H. Stuart, NYC, NY, MacMillan, 1952, page 131.

<sup>6</sup>Gettysburg Historian Georg searched census and tax records for the 1860-1890 period and notes that every person identified as a carpenter by trade in Gettysburg had a Germanic surname. This suggests the possibility that the roofing type was retained long into the nineteenth century more as a result of the abilities and experience of the tradesmen than as a preference of the owners of buildings.