

APPROVAL SHEET

Recommended:

Director

Recommended:

Regional Director

Recommended:

Chief, EODC

Approved:

Superintendent

PRELIMINARY
SURVEY REPORT
(ARCHITECTURAL)

PREPARED

FOR THE
REHABILITATION
OF THE

PAYMASTER'S HOUSE
(BUILDING NO. 36, SHENANDOAH STREET)

PRELIMINARY TO HEATING PLANS

HARPERS FERRY
WEST VIRGINIA

by
ARCHIE W. FRANZEN
Architect

October 10, 1937

United States Department of the Interior, National Park Service
Eastern Office, Division of Design and Construction

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FOREWORD

Building Number 36, presently called the Paymaster's House, is a part of the original Armory-Arsenal group. While its final use has not been determined its importance is unquestioned and its retention and its preservation must be considered in the development of Harpers Ferry National Monument.

The building is now used as a Visitor Center and it also provides space for the Administrative Offices of the Monument. Because of this daily use a thorough physical study involving the opening of walls was not feasible at this time. Therefore the following preliminary and partial survey report was prepared to provide that basic architectural data necessary to facilitate the design and installation of an adequate heating system. The inclusion of provisions for a future air-conditioning system in the design of the heating system has been generally approved.

Further study will be required to determine the appearance of the following items during the period for which restoration is planned:

At what time was the rear gallery enlarged to its present size and when the existing decorative scroll work applied?

Why iron lintels were used over the window openings of the main portion of the building and flat brick arches were employed over the window openings of the rear portion

The interior treatment of the basement room under the rear portion and the stair run that formerly connected it with the floor above.

Whether interior wall treatment was of painted plaster or was papered. What type of floor finish was used. There is also some doubt whether the door and window casings are original. The paint colors used at the time will need to be determined.

Hardware used will have to be investigated as earlier locks were replaced with modern hardware.

Appreciation is due Herbert K. Kissling, Park Historian and Charles W. Snell, Park Supervising Historian for their spirit of cooperation and for making available information uncovered during their research work.

Fourteen of the sixteen sheets of measured drawings have been included in the Appendix. These were prepared by H. A. Nelson and D. F. Schroeder of the University of Michigan; J. N. Kise and B. F. Barr of the University of Pennsylvania; F. B. Hansen, Syracuse University; and W. A. Wisner, University of Kansas, under the direction of Prof. Henry C. Edwards of the University of Illinois and the author.

Archie W. Franzen
Architect

PART I

PHYSICAL HISTORY

A. ORIGIN OF STRUCTURE

The historical data section prepared by Park Historian Kissling and Park Supervising Historian Snell contains documentary information uncovered to date. This material discusses the origin of the structure with dates and also the names of personnel identified with the structure.

B. ARCHITECTURAL AND STRUCTURAL DESIGN

Built by the Government in 1858-9, as a residence for the Master Armorer, this structure is the only one still standing within the Monument area that suggests having been constructed from previously prepared plans. The layout of the rooms and the spacing of windows, doors, and fireplaces are orderly and well thought out. Materials used were of good quality. The construction details and structural features employed show understanding of good building methods, and their execution implies close supervision while the work was in progress.

As it was intended for use by a person high in the Armory-Arsenal organization, its scale and extent were commensurate with his importance. Although no original plans

have been uncovered to indicate otherwise, the arrangement of rooms strongly suggests that the house was planned for residential use only, and the use of rooms is presumed to be similar to any upper-class home of the period.

In a letter written June 28, 1856, mention is made of two other residences planned for construction at the same time as the Paymaster's House.¹ After an examination of other structures in the town of Harpers Ferry on the hill two buildings were found that appear to be the residences mentioned. They are owned by Storer College and are of the same size and plan.

One of the houses is called the "Morrell House" and is located at the southeast corner of the intersection of Fillmore and Columbia Streets. The first floor is unoccupied at the present time, and permission was obtained for inspecting the structure. The upper floor is occupied, and access is not possible at this time.

The other residence is occupied by Mrs. H. T. McDonald, widow of the late president of Storer College. She is presently away, and a closer examination of the house will be made when she returns. It was viewed during the local

1. For quotation and citation of source, see the Historical Section.

Garden Club's annual tour of old homes last spring. It is identical in plan with the "Morrell House."

Both structures have the following features in common with the Paymaster's House:

- a. The water table and cut stone faced foundation walls.
- b. Brick eaves cornice identical in size and design.
- c. Main entrance doorway with sidelights.
- d. Wood trim brick mould on exterior of windows.
- e. Interior window and door casing trim.
- f. Length of rear portions are the same as the Paymaster's House.
- g. Location of stair to the basement in the rear portion.

Early heating was accomplished by fireplaces and wood and coal stoves. Stovepipe holes in the chimneys occur in all rooms with fireplaces. It is known that coal was brought from the Upper Potomac River Valley to Harpers Ferry in the early 1800's. It is possible that built-in coal grates were employed to heat the structure originally. The fine condition of the brick of the fire chambers and hearths suggests that the fires were not in contact with the brickwork. In later days, stovepipe openings in the fireplace breasts were made to accommodate wood-and coal-burning stoves.

More recently, oil space heaters have been used by NPS to heat the building.

No physical evidence was found to indicate that the building was ever piped for lighting by gas, although gas lighting was advertised as available in Charles Town at an early date.² Present lighting by NPS was effected by using armored cable installed by others prior to acquisition.

2. Virginia Free Press, April 7, 1836. The gas lighting advertised by a hotel there was probably supplied by a private gas-making apparatus.

PART II

EXISTING CONDITIONS

A. ARCHITECTURAL DESCRIPTION OF THE FABRIC

The Paymaster's House is a two-story brick structure, ell-shaped in plan, the main portion of which is roughly square, being approximately 42' x 38' with the longer dimension fronting on Shenandoah Street. To the rear a portion of the structure extends 25' 6" and is 20' wide, its southwest wall ranging with the southwest wall of the main portion.

Stone masonry foundation walls are faced with cut stone to form a 3" wide, sloping water table completely around the perimeter of the building. Only the rear portion and the rear half of the main portion are excavated to form a basement.

The brick superstructure is laid up in common bond, four courses to 10-3/8", using 8-1/2" x 2-1/4" brick with mortar joints struck flush. At sometime in the past the brick was painted red and had pencilled brick joints lined off irrespective of the actual mortar joints. The wall adjacent to Building #35 and the back wall of the rear portion were not so treated. Chimneys project within the structure and are flush on the exterior walls. The tops of the end walls terminate in parapets capped with cut red sandstone copings. Windows have double-hung

sash with six lights over six lights separated by parting strips.

Windows in the main portion are counterbalanced with cast-iron weights. The windows in the rear portion are not counterbalanced. Exterior lug sills are white limestone and project into the jambs $3/4$ ". The sills have water washes with flat planes at the jambs to receive the wood brick moulds. Iron lintels support the brick over the openings in the main portion, while lintels over the windows of the rear portion have flat brick arches. Inside, the windows of the main portion have splayed jamb liners of wood. Those of the rear portion have straight returns of wood. Windows are shuttered and a few interestingly-designed cast-iron shutter dogs remain.

Both portions have low-pitched roofs, and these are at different levels. The main roof is slate-covered and is supported by three king post trusses with intermediate rafters. The trusses support longitudinal beams used to reduce the spans of both the rafters and the second-floor ceiling joists. Sheathing over this portion appears to be original with some of the boards measuring as much as $17-1/2$ " in width and showing vertical saw marks. The northeast slope of the roof over the rear portion is a standing seam tin roof and extends out over the gallery roof. The balance of this roof is slate. It will probably be found that the top side of the sheathing is rotted

due to the employment of slate over such a low roof pitch.

The ell-shaped two-story wood gallery in the rear of the structure appears to have been built in two parts with the original extending along the northeast side of the rear portion. At a later date a connecting addition along the southeast side of the main portion was added. This is evident from the change in floor levels on the second-floor deck and the conversion of a window into a door opening out on the deck from the second floor of the main structure. At present it is felt that the decorative scrollwork now found on the gallery was added when the gallery was enlarged. Further investigation should clarify this point and explain certain oddities in the supporting masonry of the gallery.

Interior flooring is tongued and grooved, single thickness, laid over the joists from interior of masonry wall to interior of masonry wall. The 3" x 4" wood studs of the interior partitions are raised from--and toenailed to--the flooring with their top ends nailed to the floor joists above using half laps. The interior walls are plastered over circular-sawed 1-1/4" x 3/8" lath nailed with cut lathing nails.

Plaster ceiling centerpieces, circular in shape, are found in the main rooms and central hall of the first

floor of the main portion. No physical evidence has been found to indicate whether the walls were papered or painted originally.

Mantelpieces on the first floor are more pretentious than those found on the second floor, although both designs are not refined and apparently are the work of carpenters not too skilled in finished woodwork.

Floods have caused rotting in many of the baseboards and some of the interior window and door trim. Baseboards of the first floor are rabbeted at the top and surmounted with an ogee moulding. Those of the second floor are plain boards surmounted with an ogee moulding. Interior door and window casings are extremely simple with a pseudo-pediment over the heads of the openings. The main stair trim is typical of that found in other buildings within the Monument with rectangular balusters and round handrails with simple curved easements.

Drawing NM-HF 3078 shows pertinent supplementary structural data that will affect the heating design layout. Additional information is to be found on measured drawing NM-HF 3067. It would be desirable to pass horizontal piping and ducts above the attic ceiling joists and below the first-floor joists in the basement. Vertical piping and

ducts should be run between existing interior partition wood studs and/or in inactive chimney flues.

PART III

PROPOSED WORK

(Heating and Air-conditioning System)

The proposed method for heating the structure was developed by A. H. Shurupoff of EODC with special consideration given to avoiding undesirable alterations to structural and design features of the building.

The system is composed of an oil-fired hot-water boiler to be located in the basement and connected to an existing flue to be lined with terra cotta. The oil storage tank is to be buried and anchored to withstand dislocation by possible flood waters.

Distribution of heat is to be accomplished by risers connected to two air-handling units, one of these to be located in the attic of the main portion of the building, and the other, located on a stand in the storage room on the first floor of the rear portion.

The second-floor rooms of the main portion will be heated by warm-air ceiling diffusers connected to ducts in the attic. The first-floor rooms will be heated by floor diffusers connected to ducts run in the basement beneath the first floor. The ceiling diffusers will also act as cold-air returns. Separate floor grilles and ducts will be used for

cold-air returns on the first floor. The rooms in the rear portion of the second floor will be heated by convectors.

The air-handling units were selected so that cooling coils may be installed in them should future air-conditioning prove desirable. Diffusers and ducts were sized for both cooling and heating. At such a time a package-type water condensing and compressor unit can be installed adjacent to each air-handling unit with refrigerant piped to each cooling coil.

It is proposed to install package-type water savers on stands within the privy building located in the rear of the grounds.

It is estimated that the heating system will cost \$3400.00 installed. To furnish and install future air-conditioning based on present prices would be \$7950.00.

In the above layout the basement oil burner will be submerged during minor floods, but the damageable parts can be removed within a short warning period. The air-handling unit with the electric fan in an elevated position on the ground floor--in an unimportant rear room--would be above all except the highest floods of record.

APPENDIX I

PRESENT-DAY PHOTOGRAPHS

SHENANDOAH STREET ELEVATION

Physical evidence indicates little change, if any, from the original appearance. Lintels over window openings are supported by $3/8$ " thick by 4" by $3-3/4$ " wrought iron angles with the exposed edge beveled to shed water. Earlier painting of the brickwork has been removed with only vestiges remaining to show that it was formerly painted. Note projecting cut stone water table and window sills. Coping stones capping the parapets are red sandstone. Brick is a mixture of soft and hard burned bricks.

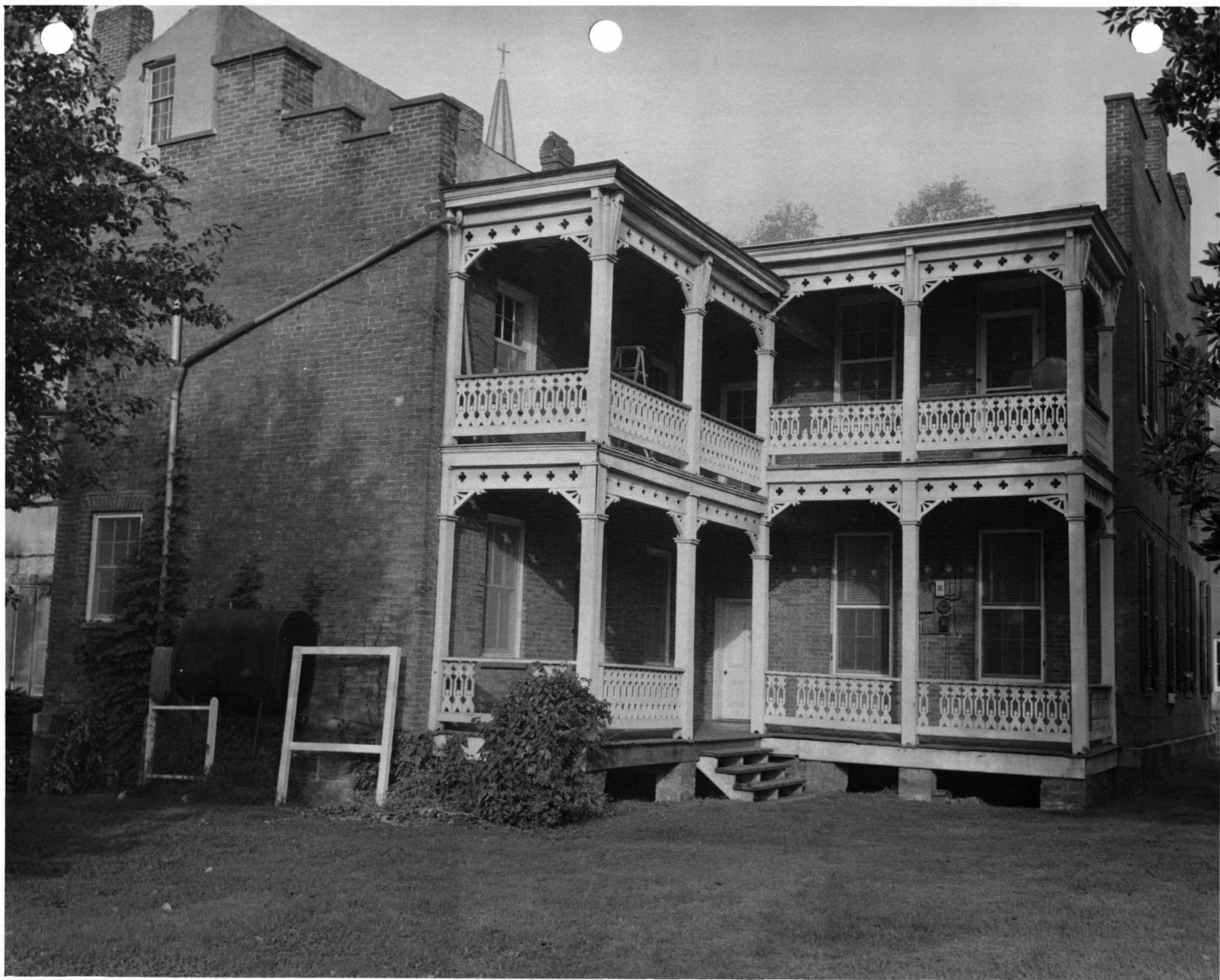
Photo: A. W. Franzen
October 1957
EODC Neg. No. 329



RECENT REAR VIEW SHOWS PORCH GALLERIES

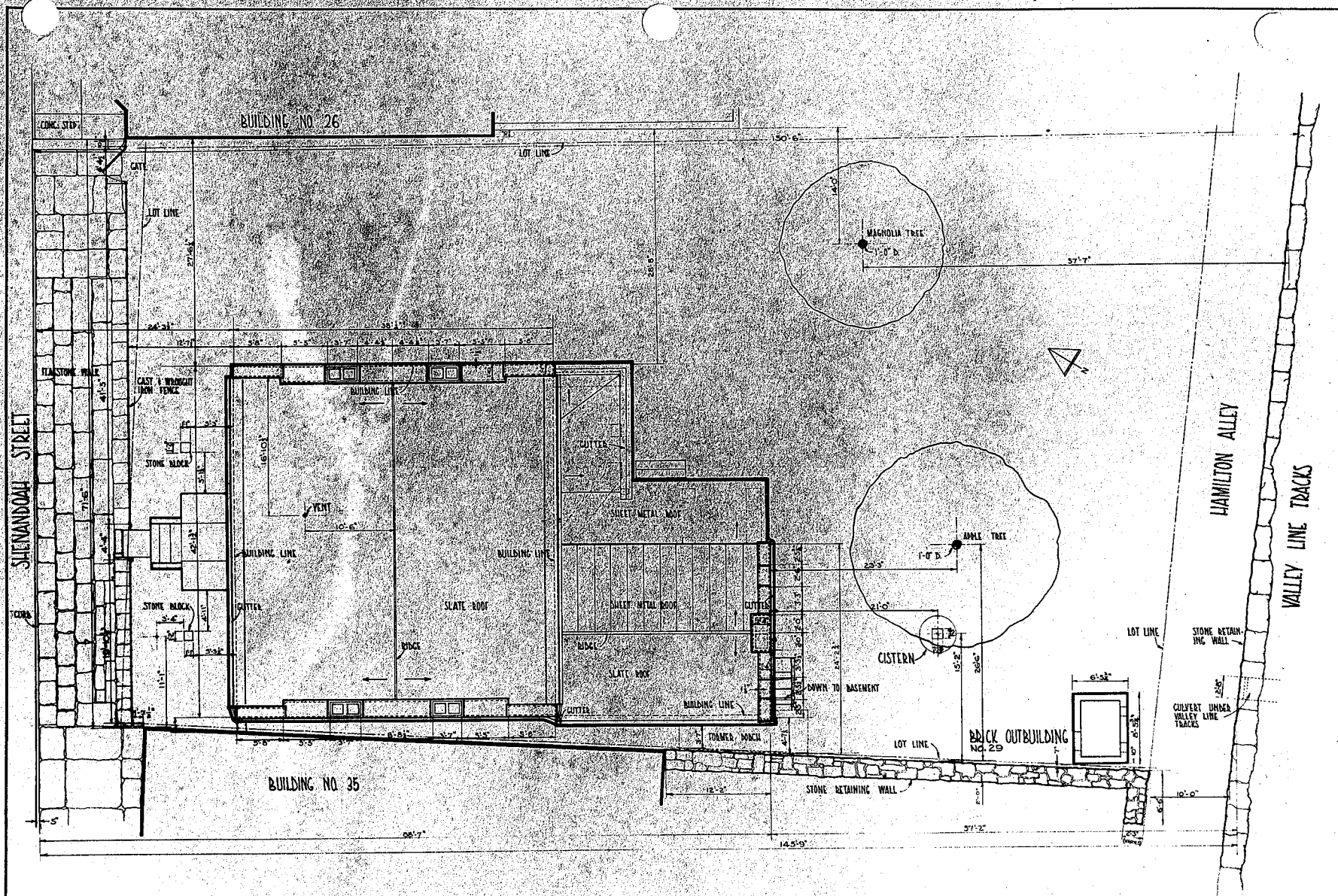
The galleries appear to have been in two stages. The two-story porch parallel to the rear portion was built first with a later connecting addition to the rear of the main portion. The door opening on to the second floor of the porch from the main portion was a window at one time. Paint scrapings from the brickwork behind the engaged porch columns show that the brickwork of both portions was originally painted a medium gray, then painted red. Decorative mouldings on the porch columns were applied after the columns had been painted an other color. Balustrading of the porch rails have no trace of an other paint having been applied.

Photo: A. W. Fransen
October 1957
RDC Neg. No. 330



APPENDIX II

MEASURED DRAWINGS

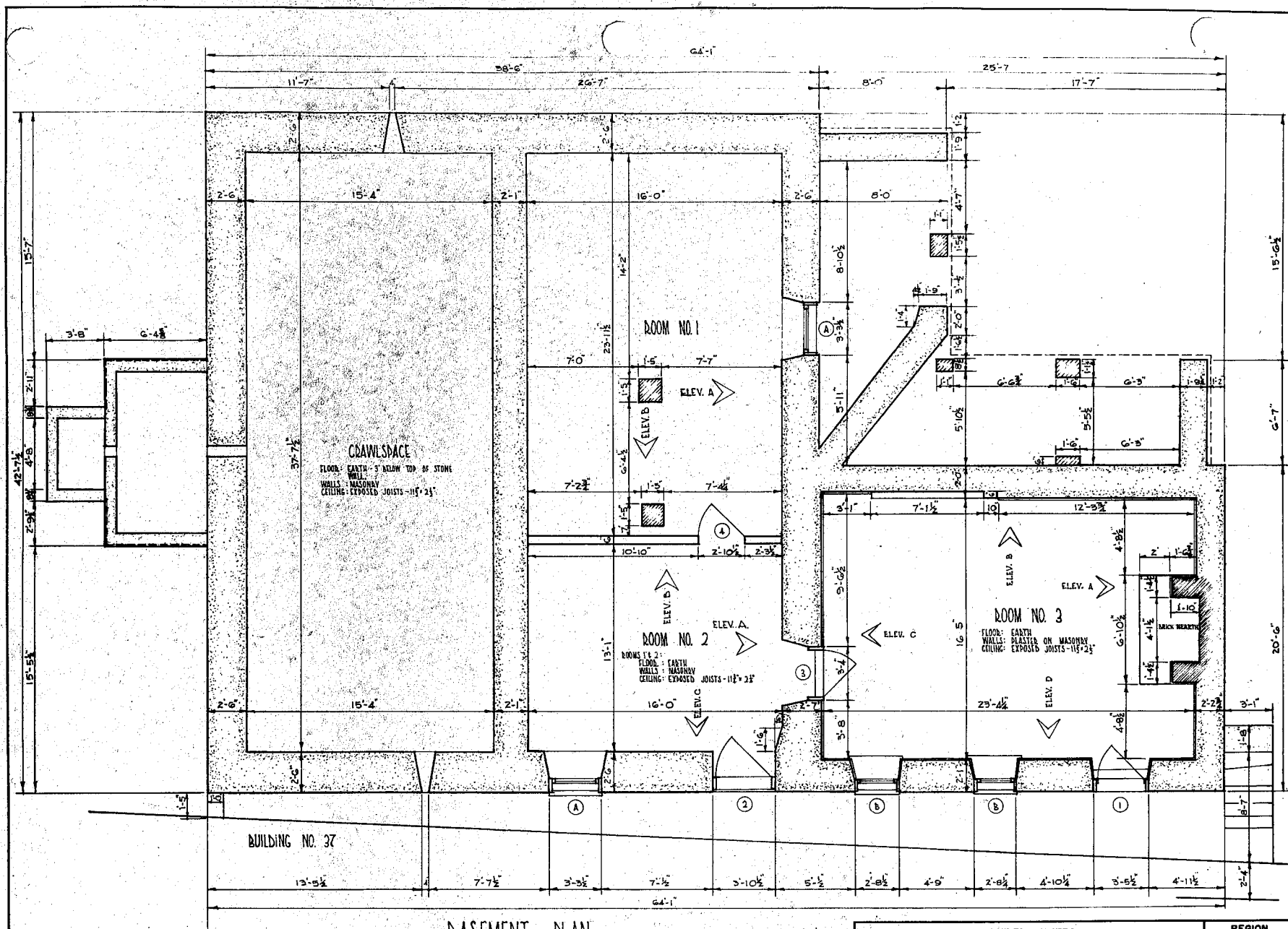


PLOT PLAN
 SCALE 2"=1'-0"

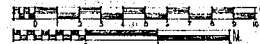


J. P. NOESSENGER, JAS. N. KISE - DES.

UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE STUDENT MEASURING TEAM FOR THE EASTERN OFFICE-DIVISION OF DESIGN AND CONSTRUCTION		REGION 5 SHEET 1 OF 16
BUILDING NO. 36. THE PAYMASTER'S HOUSE HARPERS FERRY NATIONAL MONUMENT		DRAWING NO NM-HF 3067 AUG. 6, 1957



BASEMENT PLAN
SCALE 1/4" = 1'-0"



F. B. HANSON, D. F. SCHROEDER, JAS. M. KISE - DELS.

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
STUDENT MEASURING TEAM FOR THE
EASTERN OFFICE-DIVISION OF DESIGN AND CONSTRUCTION

BUILDING NO. 36
THE PAYMASTER'S HOUSE
HARPERS FERRY NATIONAL MONUMENT

REGION

5

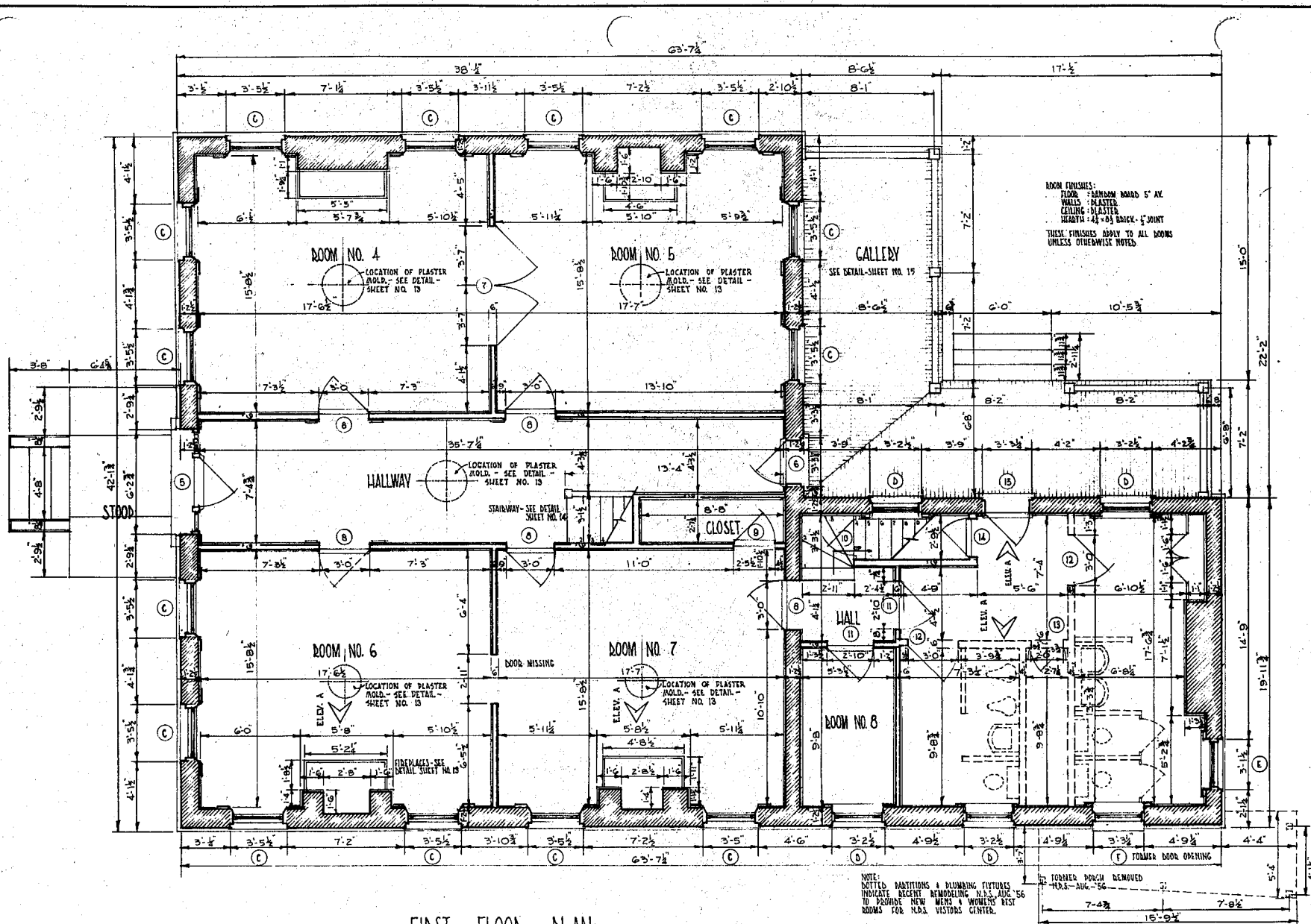
SHEET 2 OF 16

DRAWING NO.

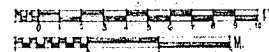
NM-HF

3067

AUG. 6, 1957

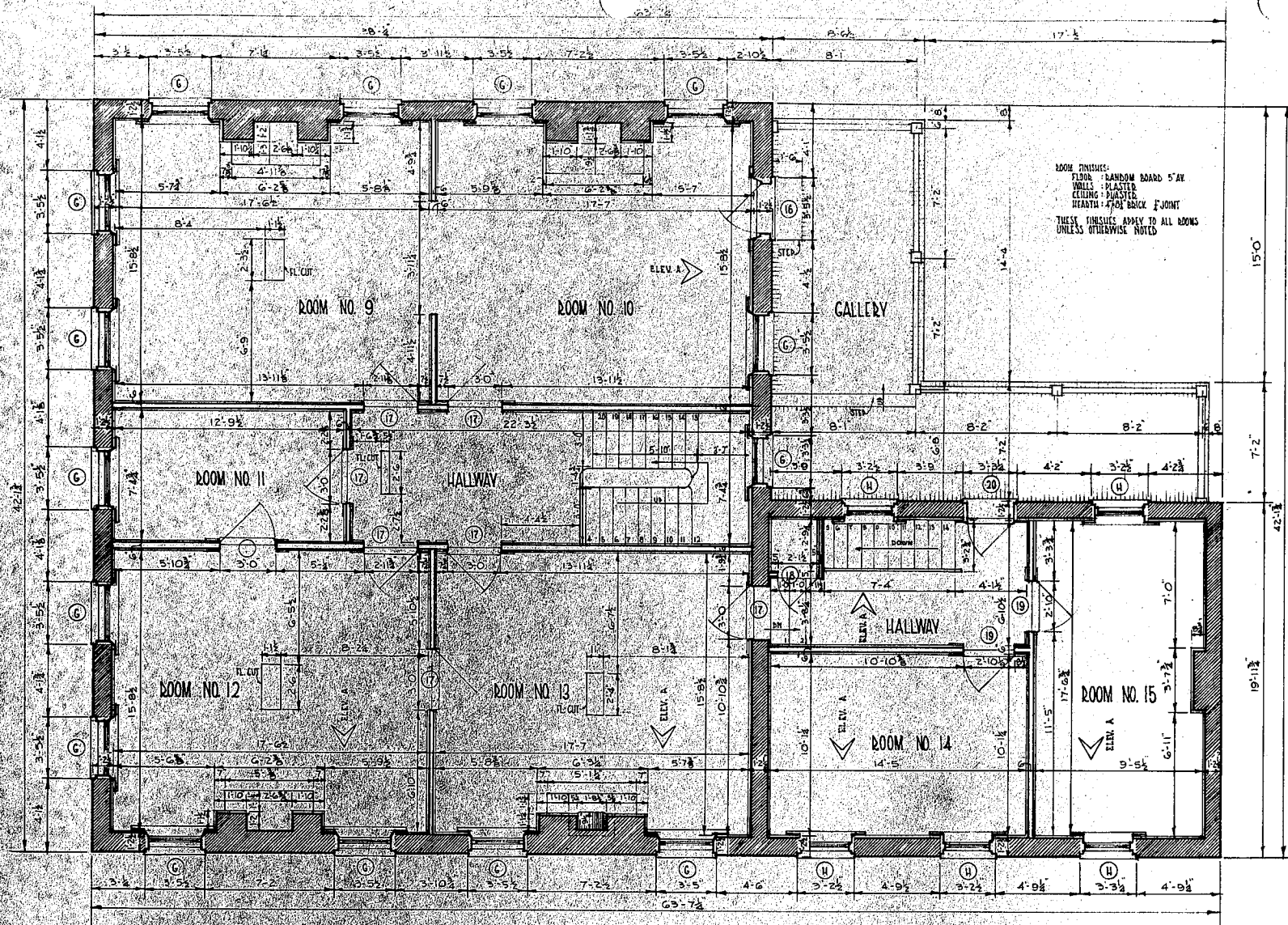


FIRST FLOOR PLAN
SCALE 1/4" = 1'-0"



F. B. HANSON, A. E. SCHROEDER, JAS. H. WISE - DELS.

UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE STUDENT MEASURING TEAM FOR THE EASTERN OFFICE-DIVISION OF DESIGN AND CONSTRUCTION		REGION 5
BUILDING NO. 36 THE PAYMASTER'S HOUSE HARPERS FERRY NATIONAL MONUMENT		SHEET 3 OF 16
		DRAWING NO. NM-HF 3067
		AUG. 6, 1957



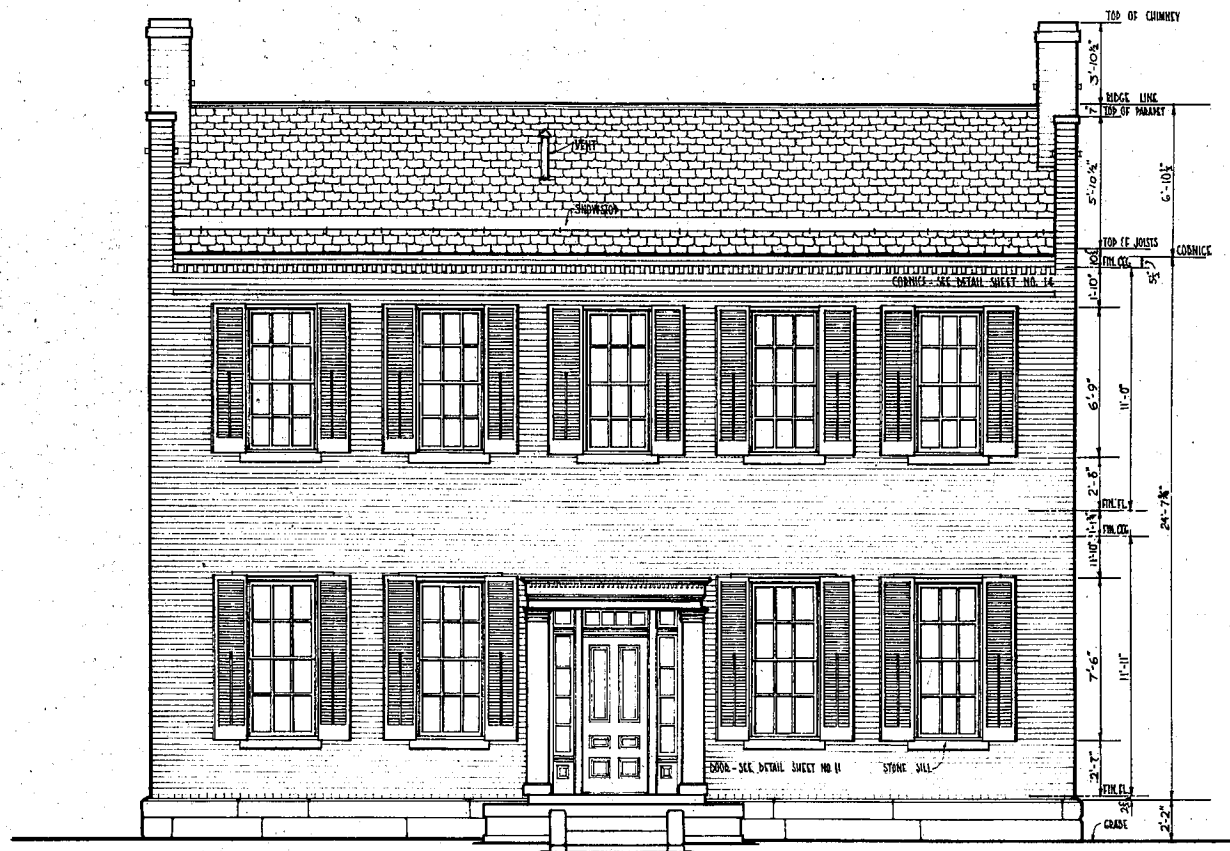
SECOND FLOOR PLAN

SCALE 1" = 1'-0"



F. B. HANSON, D. C. SCURDODEN, JAS. N. KINE, DESIG.

UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE STUDENT MEASURING TEAM FOR THE EASTERN OFFICE-DIVISION OF DESIGN AND CONSTRUCTION	REGION 5 SHEET 4 OF 16
BUILDING NO. 36 THE PAYMASTER'S HOUSE HARPERS FERRY NATIONAL MONUMENT	DRAWING NO. NM-HF 3067 AUG. 6, 1957



NORTHWEST ELEVATION
SCALE 1/2" = 1'-0"

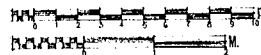
F. B. HANSON, BENJ. F. BARR, JAS. N. KISE - DELS.



UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE STUDENT MEASURING TEAM FOR THE EASTERN OFFICE—DIVISION OF DESIGN AND CONSTRUCTION	REGION 5 SHEET 5 OF 16
BUILDING NO. 36 THE PAYMASTER'S HOUSE HARPERS FERRY NATIONAL MONUMENT	DRAWING NO. NM-HF 3067 AUG. 6, 1957

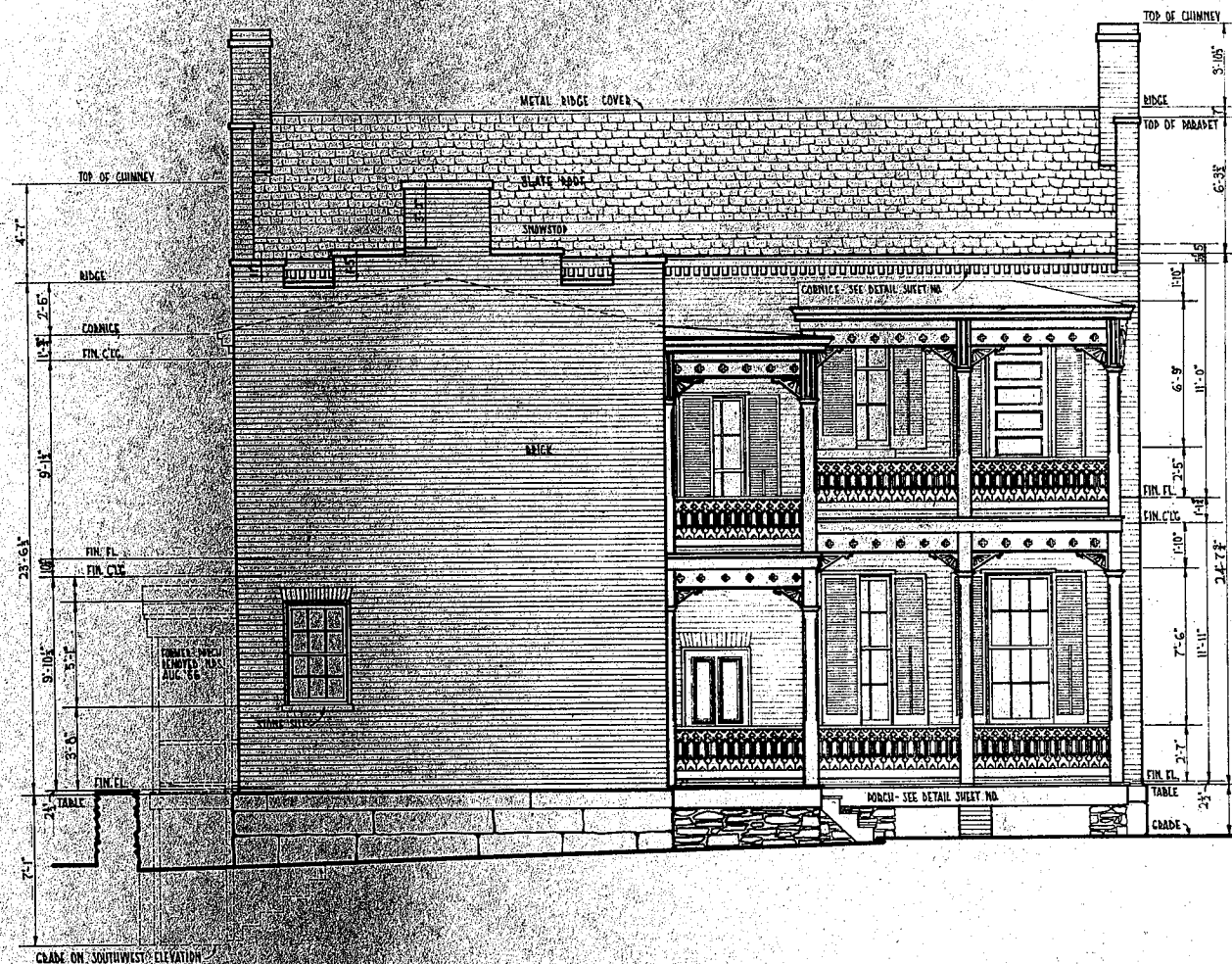


SOUTHWEST ELEVATION
SCALE $\frac{1}{2}$ "=1'-0"



F. B. HANSON, JAS. N. KISE - DES.

UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE STUDENT MEASURING TEAM FOR THE EASTERN OFFICE-DIVISION OF DESIGN AND CONSTRUCTION	REGION 5
BUILDING NO. 36 THE PAYMASTER'S HOUSE HARPERS FERRY NATIONAL MONUMENT	SHEET 6 OF 16 DRAWING NO. NM-HF 3067 AUG. 6, 1957



SOUTHEAST ELEVATION
SCALE 1" = 1'-0"



E. A. HANSON, JAS. N. KYLE - DES.

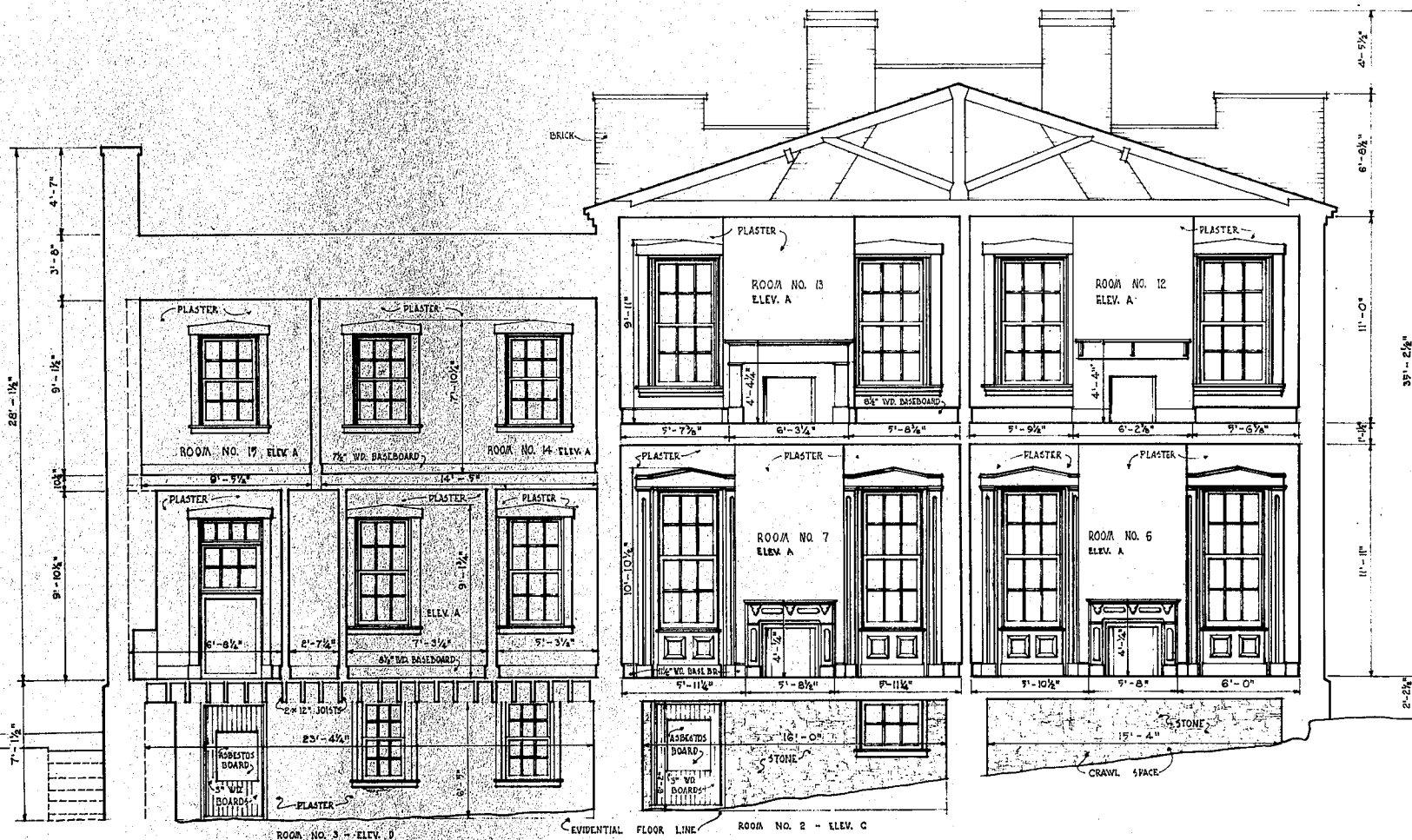
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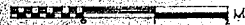
NORTHEAST ELEVATION
SCALE 1/4" = 1'-0"

UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE STUDENT MEASURING TEAM FOR THE EASTERN OFFICE-DIVISION OF DESIGN AND CONSTRUCTION		REGION 5 SHEET 8 OF 12
BUILDING NO. 36 THE PAYMASTER'S HOUSE HARPERS FERRY NATIONAL MONUMENT		DRAWING NO. NM-HF 3067 AUG. 6, 1937

F. B. MANSON, BENJ. F. BARR, JAS. N. KISE - DES.

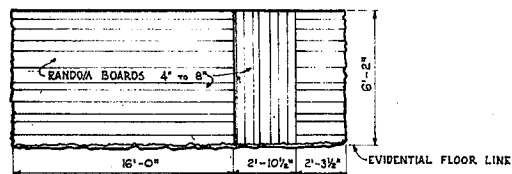


SECTION THROUGH BUILDING AND ANNEX
SCALE - $\frac{1}{4}" = 1' - 0"$
PAYMASTER'S HOUSE

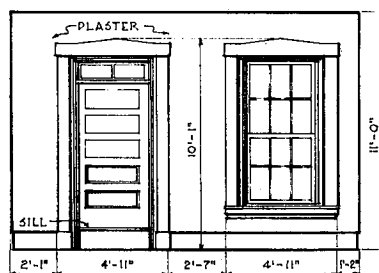


W. A. WISNER, D. F. SCHROEDER - DELS.

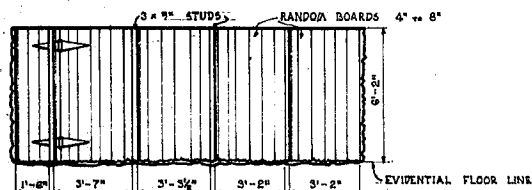
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BUILDING NO. 36 THE PAYMASTER'S HOUSE HARPERS FERRY NATIONAL MONUMENT	DRAWING NO. HF 67 AUG. 6, 1957



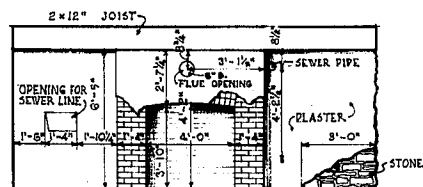
ELEV. B - ROOM NO. 2



ELEV. A - ROOM NO. 10

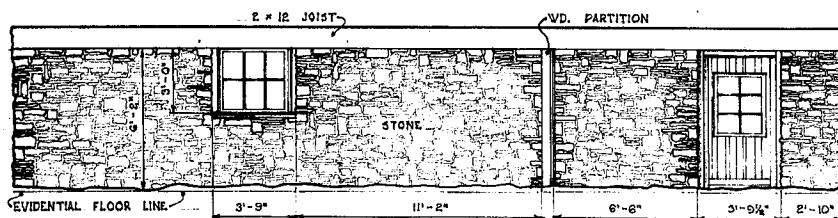


ELEV. B - ROOM NO. 1



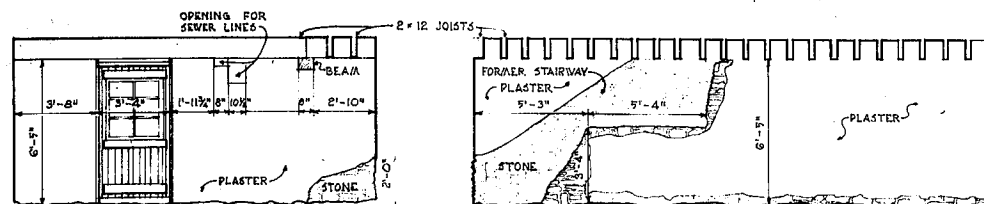
ELEV. A - ROOM NO. 3

INTERIOR ROOM ELEVATIONS (SEE FLOOR PLANS) SCALE - $\frac{1}{4}$ " = 1'-0"



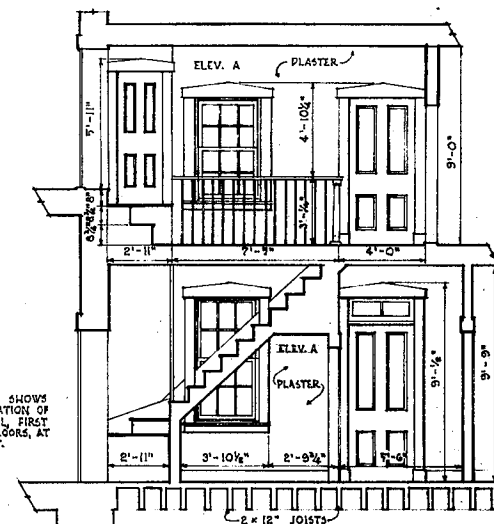
ELEV. A - ROOM NO. 1

ELEV. A - ROOM NO. 2



ELEV. C - ROOM NO. 3

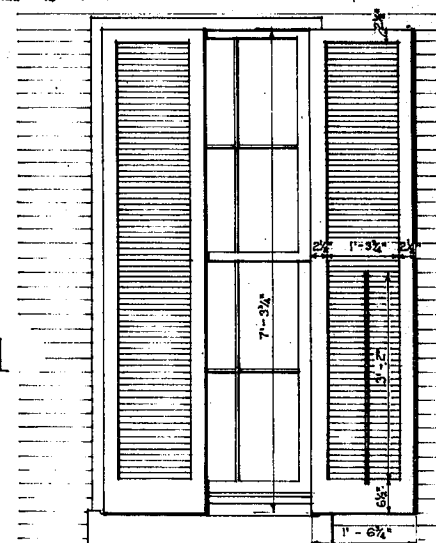
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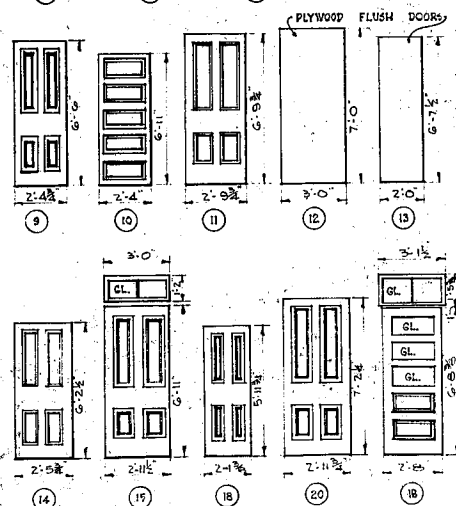
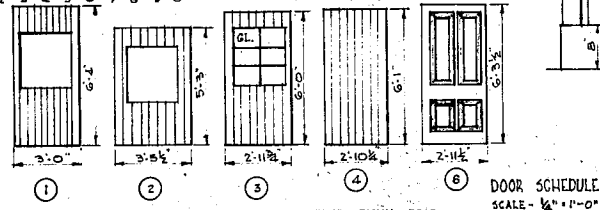
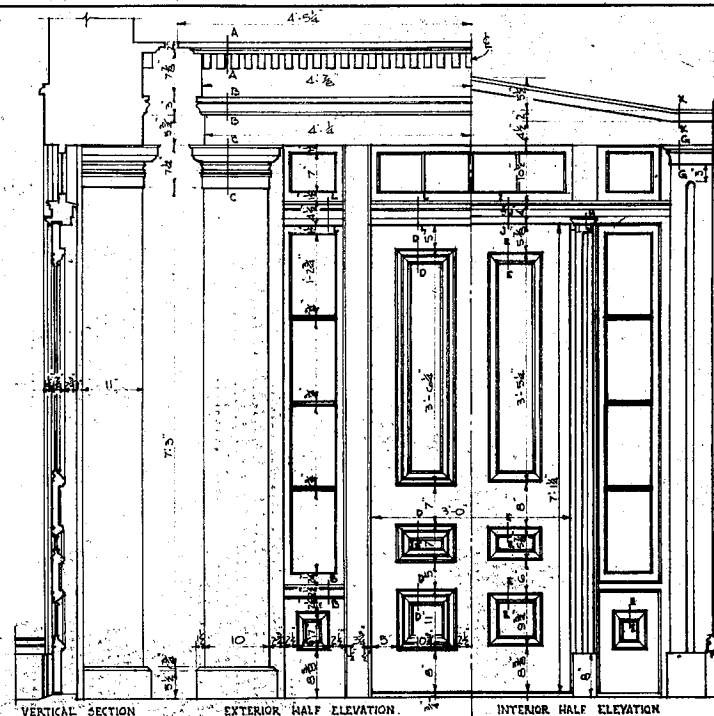
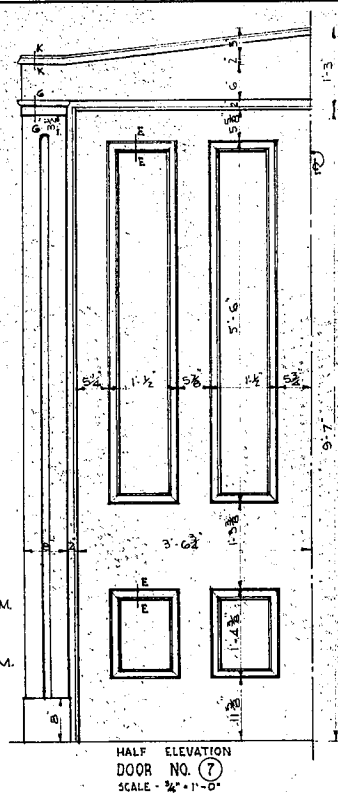
SECTION THROUGH REAR STAIRWAY
SCALE - $\frac{1}{4}$ " = 1'-0"

NOTE: SECTION SHOWS
INTERIOR ELEVATION OF
NORTHEAST WALL, FIRST
AND SECOND FLOORS, AT
REAR STAIRWAY.

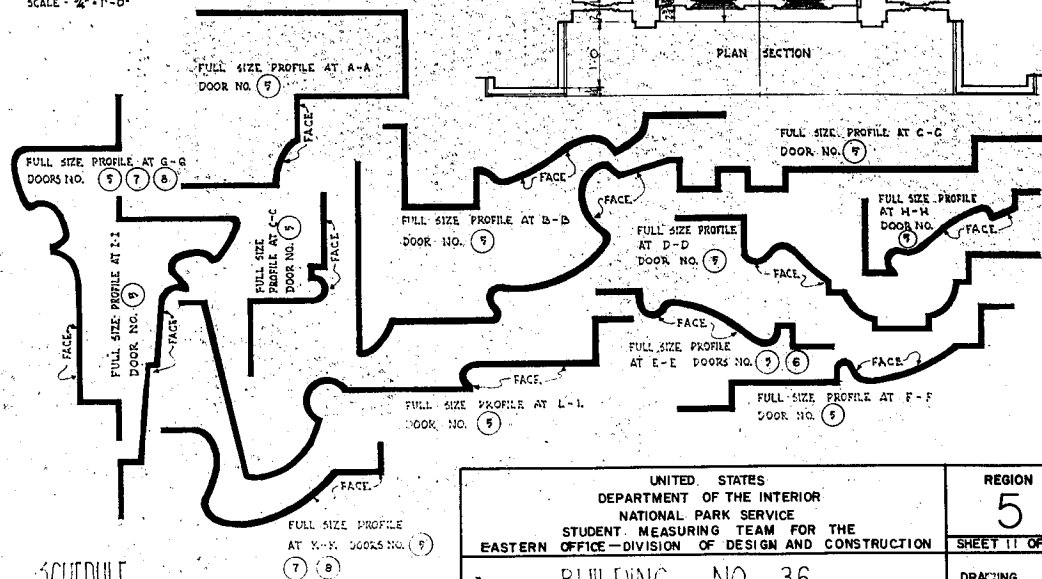
SHUTTER DETAIL SCALE - $\frac{1}{4}$ " = 1'-0"



UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE STUDENT MEASURING TEAM FOR THE EASTERN OFFICE-DIVISION OF DESIGN AND CONSTRUCTION	REGION 5 SHEET 10 OF 16
BUILDING NO. 36 THE PAYMASTER'S HOUSE HARPERS FERRY NATIONAL MONUMENT	DRAWING NO. 167 AUG. 6, 1977



DOOR SCHEDULE

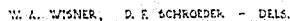


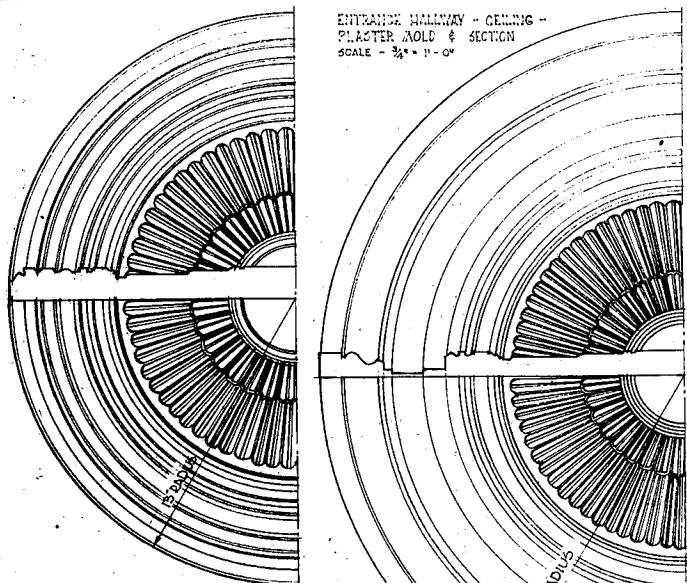
D. SCHROEDER, W.A. WISNER .. DELS

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
STUDENT MEASURING TEAM FOR THE
EASTERN OFFICE—DIVISION OF DESIGN AND CONSTRUCTION

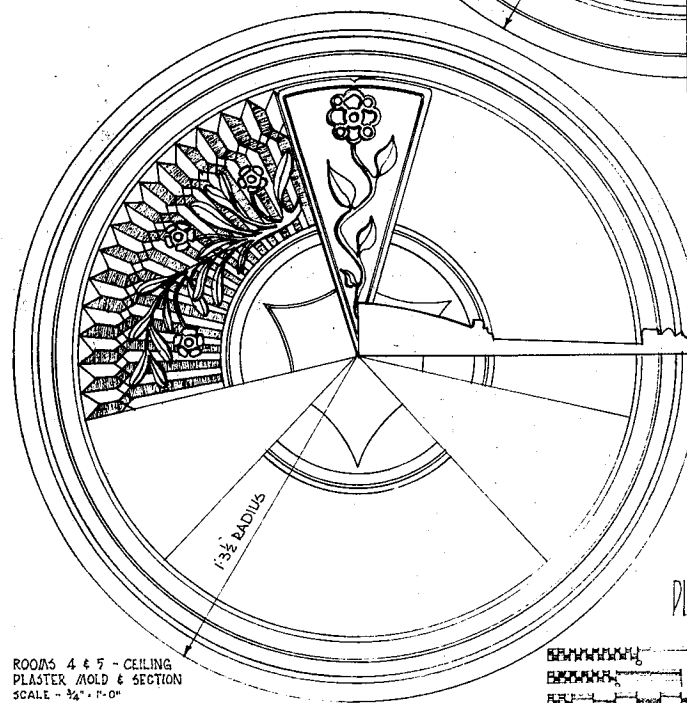
BUILDING NO. 36
THE PAVMASTER'S HOUSE
HARRPERS FERRY NATIONAL MONUMENT

REGION
5
SHEET 11 OF 16
DRAWING NO.
THE
07
AUG. 6, 1947



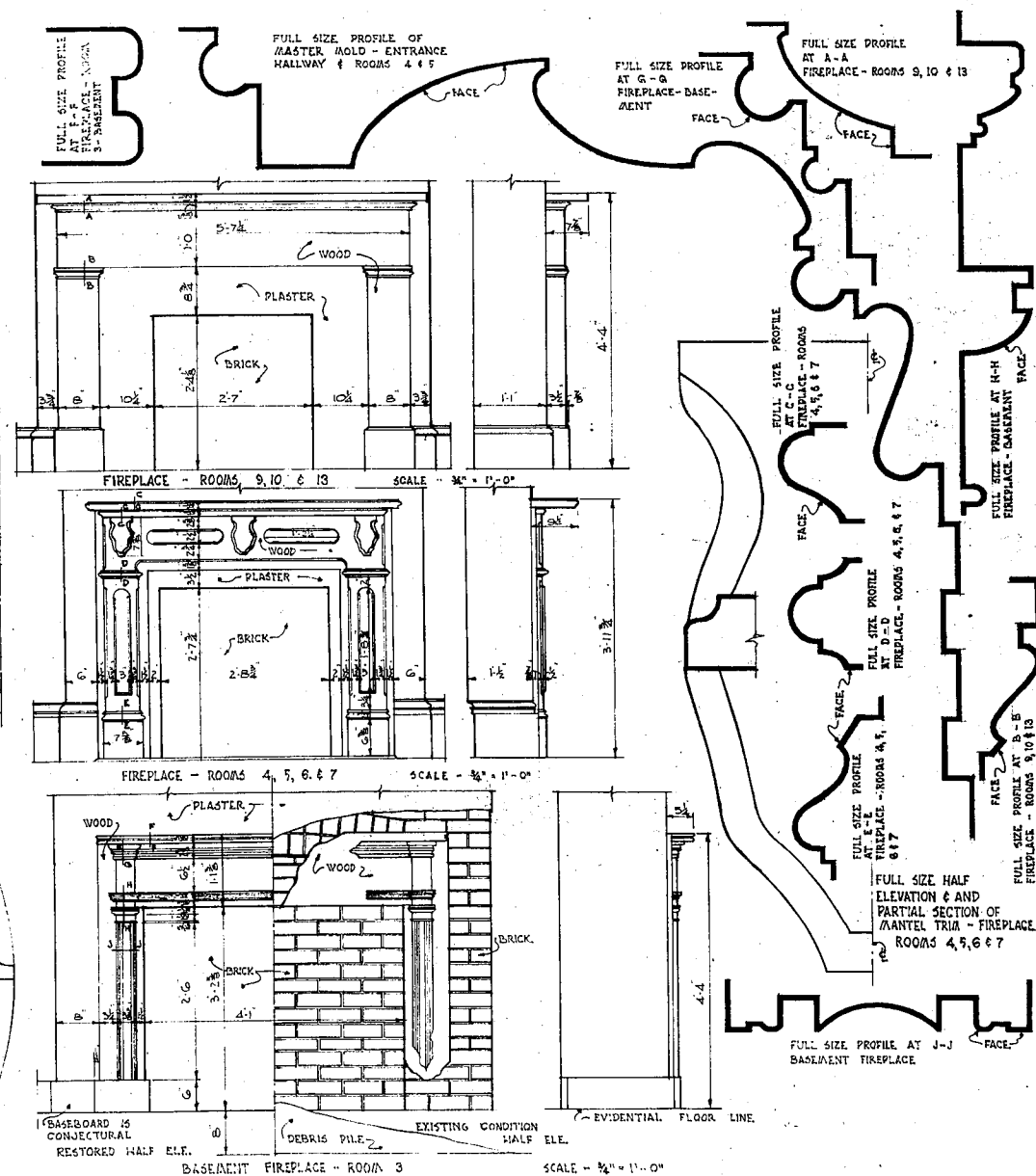


ROOMS 6 & 7 - CEILING PLASTER MOLD AND SECTION
SCALE - 3/4" = 1'-0"

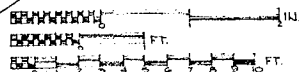


ROOMS 4 & 5 - CEILING PLASTER MOLD & SECTION
SCALE - 3/4" = 1'-0"

D. SCHROEDER, W.A. TIGHER - DES.



PLASTER MOLDS, FIREPLACES AND PROFILES



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BUILDING NO. 36
THE PAINMASTER HOUSE
HARPERS FERRY NATIONAL MONUMENT

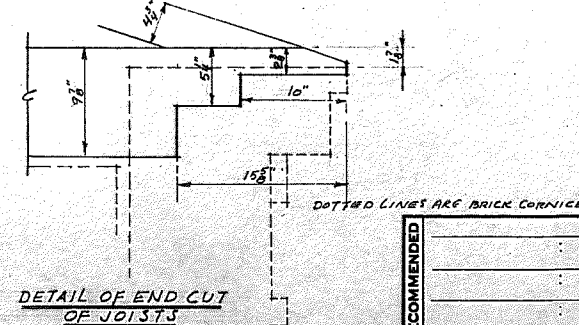
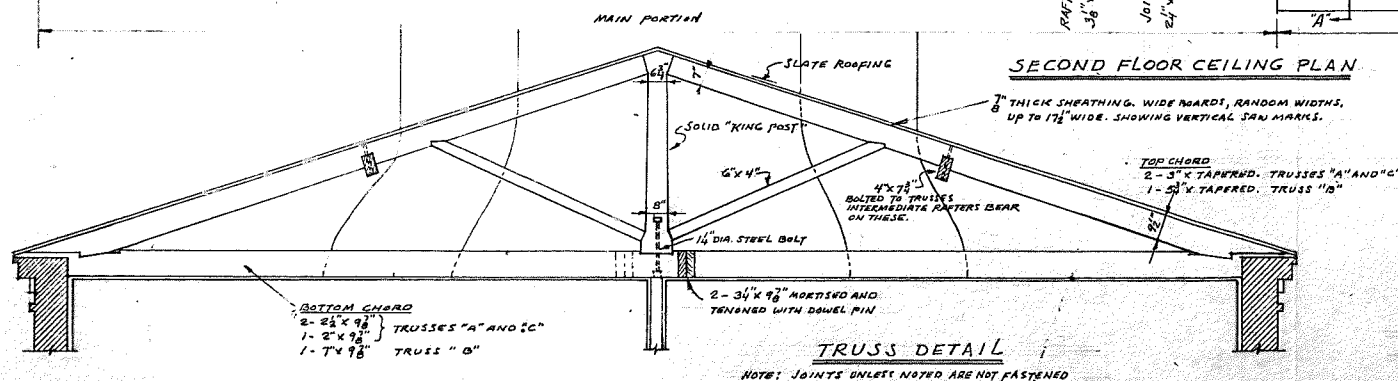
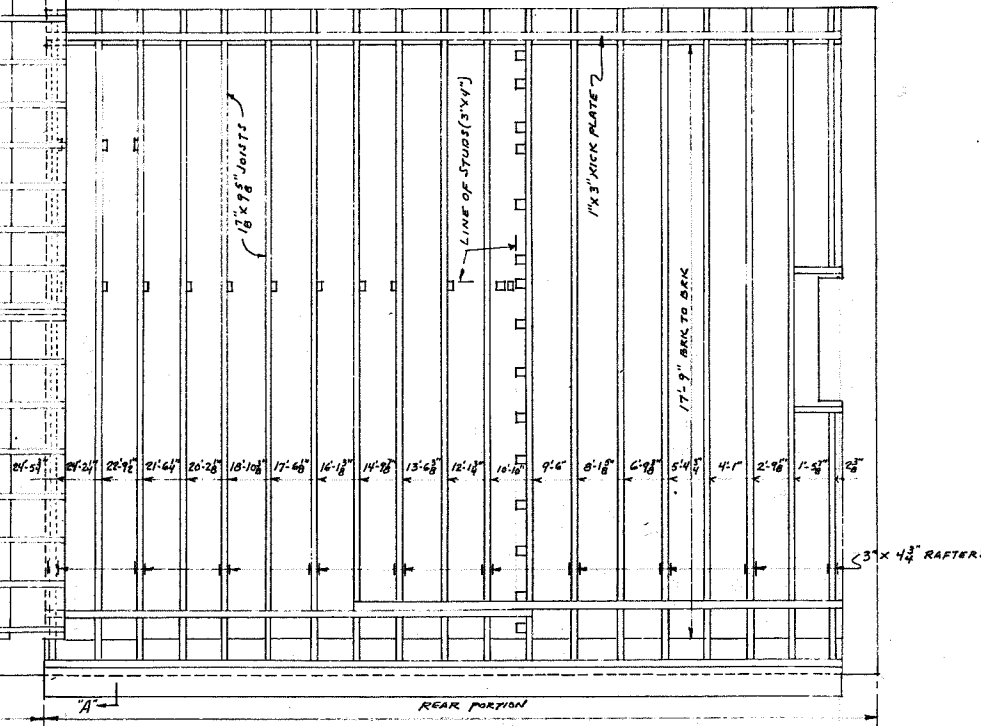
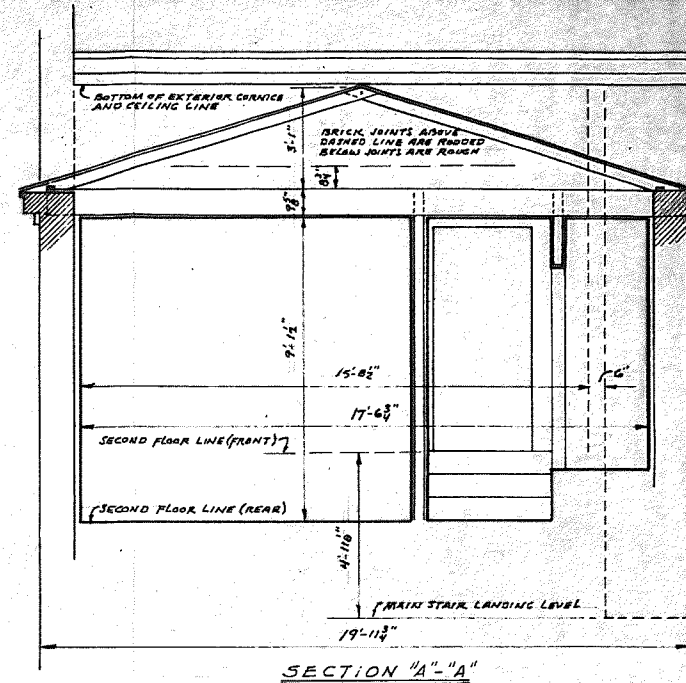
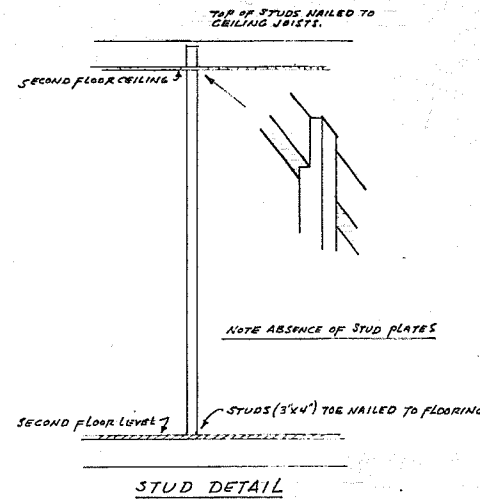
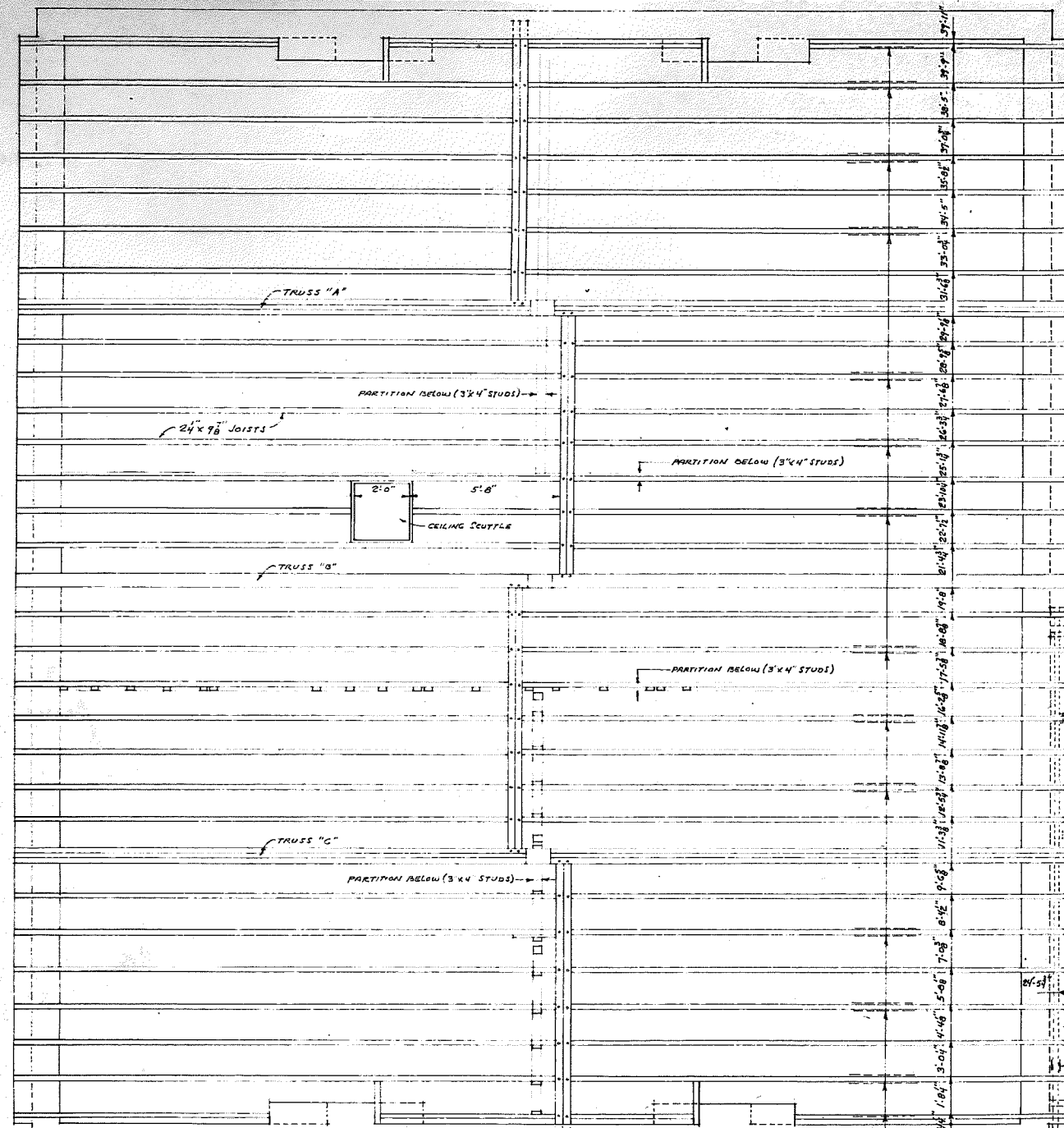
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SHEET 13 OF 16

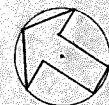
DRAWING NO.
161

AUG. 6, 1957

SHENANDOAH STREET



RECOMMENDED	DATE	SCALE 3/8" = ONE FOOT
APPROVED		UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE DIVISION OF DESIGN AND CONSTRUCTION
		JOIST, RAFTER AND TRUSS ARRANGEMENT
		PAYMASTER'S HOUSE BUILDING #36
		HARRIS FERRY NATIONAL MONUMENT



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REGION

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DES. & CONST.
EASTERN

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OTHER

PREPARED

DESIGNED
A. W. FRANKLIN

DRAWN

CHECKED

REVISOR

DATE

INITIAL

REGION

FIVE

FCP 8-3

SHEET / OF

DRAWING NO.

NM: HF

3078

DATE: SEPT. 30, 1957

BASIC DATA FIELD DIMENSIONS SEPT 1957

SUPPLEMENTS INFO. FOUND ON DRWG 3067