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NORTH WING PHYSICAL INVESTIGATION

THE ARLINGTON HOUSE

GEORGE WASHINGTON MEMORIAL PARKWAY

by

S. Elizabeth Sasser

Technical Advisor

James S. Askins

Denver Service Center

Williamsport Preservation Training Center

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I. INTRODUCTION

This report details the findings of a program of limited destructive investigation in the north wing of the Arlington House, conducted in May 1985, by the Williamsport Preservation Training Center. The purpose of the investigation was to attempt to resolve questions relating to the origins and evolution of the north wing, raised by architectural features uncovered during structural stabilization work (1980-1981), and research for the Historic Structure Report (Architectural Data Section, Phase II, Arnest and Sligh, 1983). Extensive fabric removal in the course of the structural and investigative work revealed unanticipated evidence of a complex and largely undocumented history of construction changes.

It was determined on the basis of this evidence that the north wing existed in some form as a freestanding structure prior to completion of the central block and loggia; that the originally constructed first floor elevation was approximately five feet higher than the existing; and that there were major changes in openings, partition arrangement, and fireplace locations. However, integration of this evidence into an evolutionary sequence and chronology of construction is complicated by the obliteration of much early fabric in the implementation of the design program for the mansion as a whole, and in subsequent phases of alteration, repair, and attempted restoration. Primary architectural evidence usually found at floor and ceiling level was destroyed during the Department of the Army program of restoration (c. 1906-1929). Also, the continuity of architectural finishes was severely disrupted by general repairs and the introduction of plaster patches over expanded metal lath at all partition/wall intersections. Therefore, the extant evidence relating to early periods of construction is fragmentary and isolated in context. The current lack of sufficient historical documentation to support positive identification of period features, particularly those relating to the interpretive period (c. 1861), further complicates the interpretation of physical evidence.

In December 1984, at the request of the Park, the Williamsport Preservation Training Center conducted an evaluation of the physical evidence uncovered in the previous phase of work. After four weeks of onsite investigation by Jim Askins, Chief, WPTC, assisted by Historical Architect, Elizabeth Sasser and Preservation Trainee, Barry Caldwell, it was concluded that the evidence as it was then understood was insufficient to determine the original extent and form of the structure, or the evolution and dating of interior partition arrangements. Therefore it was recommended that additional, limited destructive investigation be completed, with the following objectives:

-- To establish the original building limits and siting of the north wing in its earliest configuration as a freestanding structure. This was felt to be a critical indicator of whether the building was a pre-existing structure of unknown function and appearance, adapted for use, or was constructed by GWP Custis as an element of the design concept for the mansion as a whole, as attributed to architect George Hadfield.

-- To determine the nature and location of any fenestration predating the existing, and to establish whether existing fenestration represents original construction.

-- To further establish the location and sequence of partitions predating the existing, and aid in developing other sequences in finish con struction.

This proposal forms the basis for the architectural investigation detailed in this report. It should be noted that this is not a comprehensive treatment of conditions in the north wing. The present work was completed in conjunction with the revision of the Historic Structure Report, Architectural Data Section, for which it is to serve as an addendum, dealing only with the issues outlined above. A number of questions relating to the dating of the loggia, bathroom, and the nature of interpretive period cooking arrangements were beyond the scope of the present investigation. Finally, the author gratefully acknowledges the assistance and many kindnesses shown by the entire staff of the Arlington House, particularly Staff Curator, Agnes Mullins, during the course of the investigation.

METHODOLOGY

The investigation procedure consisted of removal of an 8 inch wide band of plaster down to brick, extending completely around the interior of the perimeter wall of the north wing. The 8 inch width of the plaster band represents 3 courses of brick, which was felt to be the minimum necessary to identify construction joints or major changes in masonry rhythm. The height of the plaster band was set at approximately 90 inches above the existing floor, or 30 inches above the previous, higher floor level. This was done to intersect potential infilled openings relating to the earlier floor elevation. As the investigation proceeded, the height of the plaster band was adjusted upward slightly in several locations to avoid disturbing significant concentrations of extant wallpaper, and to maximize the potential for encountering infilled openings.

Plaster removal was completed one coat at a time on each wall. Representative samples of each plaster type were labeled with the area from which they were taken and accessioned by the Park into their permanent artifact collection. Several areas of plaster showing significant concentrations of wallpaper fragments were left in situ. Where incident wallpaper fragments were encountered within the confines of the plaster band, they were photographically recorded before removal. Every attempt was made to remove them with the entire thickness of plaster backing intact. These also were labeled and given to the Park to be accessioned.

PRESENTATION OF PHYSICAL EVIDENCE

The format chosen for the presentation of physical evidence was adopted for two reasons. First, to simplify discussion of the features by placing them in a visual context. The drawings were intended to highlight key features by reducing the mass of superfluous detail. Despite the limitations of recording a three dimensional space in two dimesions, it is hoped that the photographs will assist the reader in making an independent evaluation of the narrative analysis accompanying the drawings. Also, in the event that future treatment of the structure renders the physical evidence inaccessible, this approach provides at least a partial graphic record of existing conditions.

GLOSSARY OF PLASTER TERMS

series--an application of plaster in one or more coats, of which the outermost is intended as a finish coat in a specific period.

coat--a single layer application of plaster over a surface.

rough coat--the first coat in three coat plaster work. The term is used here in preference to the contemporary term "scratch coat" due to the fact that no raked base coats were found in the north wing.[1]

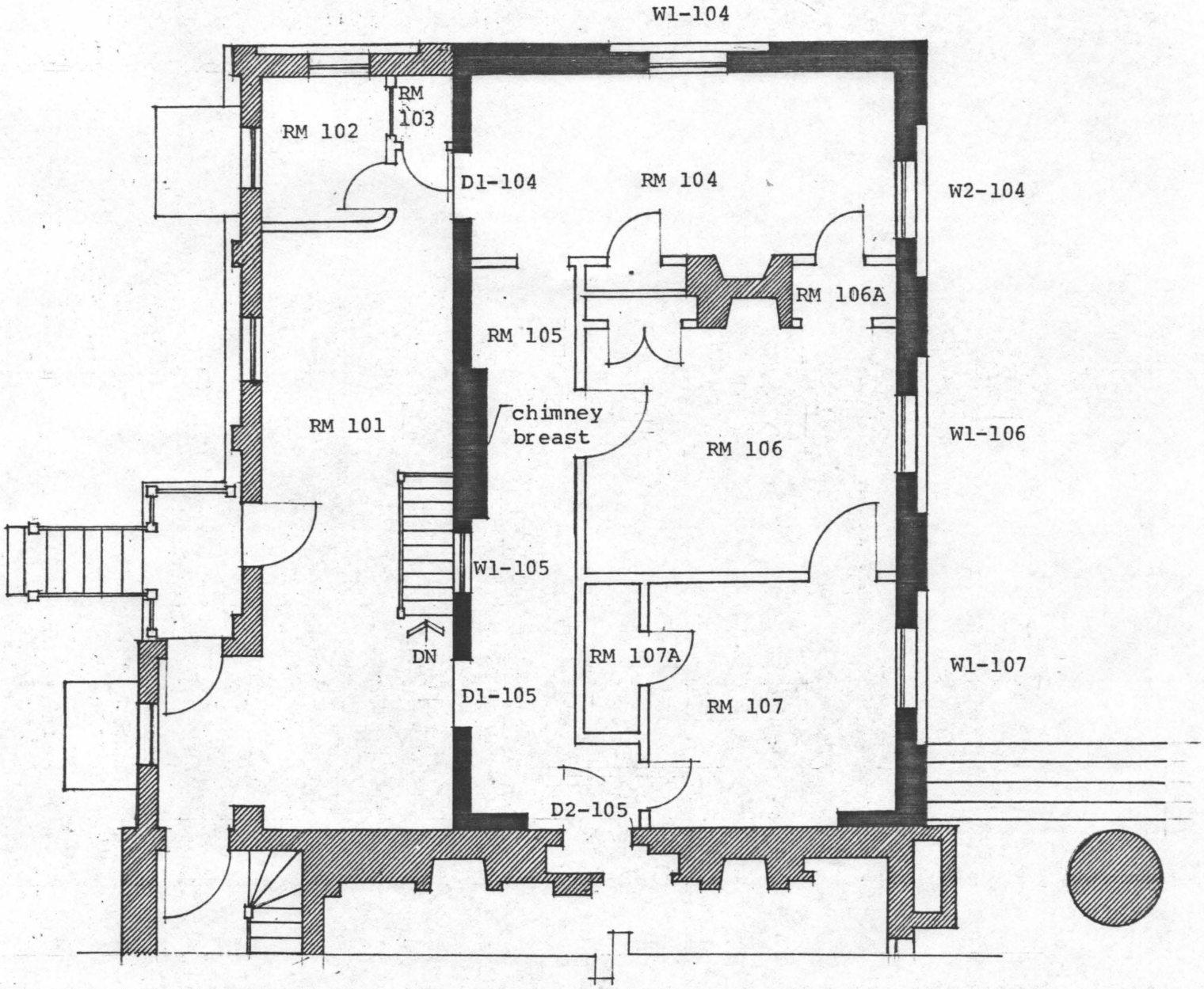
brown coat--The second coat in three coat plaster work. It should be noted that this term is not a reference to plaster color.

finish coat--The third and final coat in a three coat plaster series, forming either the final finish condition for the wall or a substrate for paint or wallpaper.

scored coat--A plaster surface which has been hacked with a tool such as a plasterer's axe after the plaster has set, to form a key for adhesion of subsequent layers of plaster.

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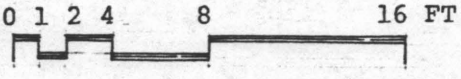
1. Harley J. McKee. Introduction to Early American Masonry. (Washington, D.C.: National Trust for Historic Preservation, 1973), p. 86.



NORTH WING FIRST FLOOR PLAN

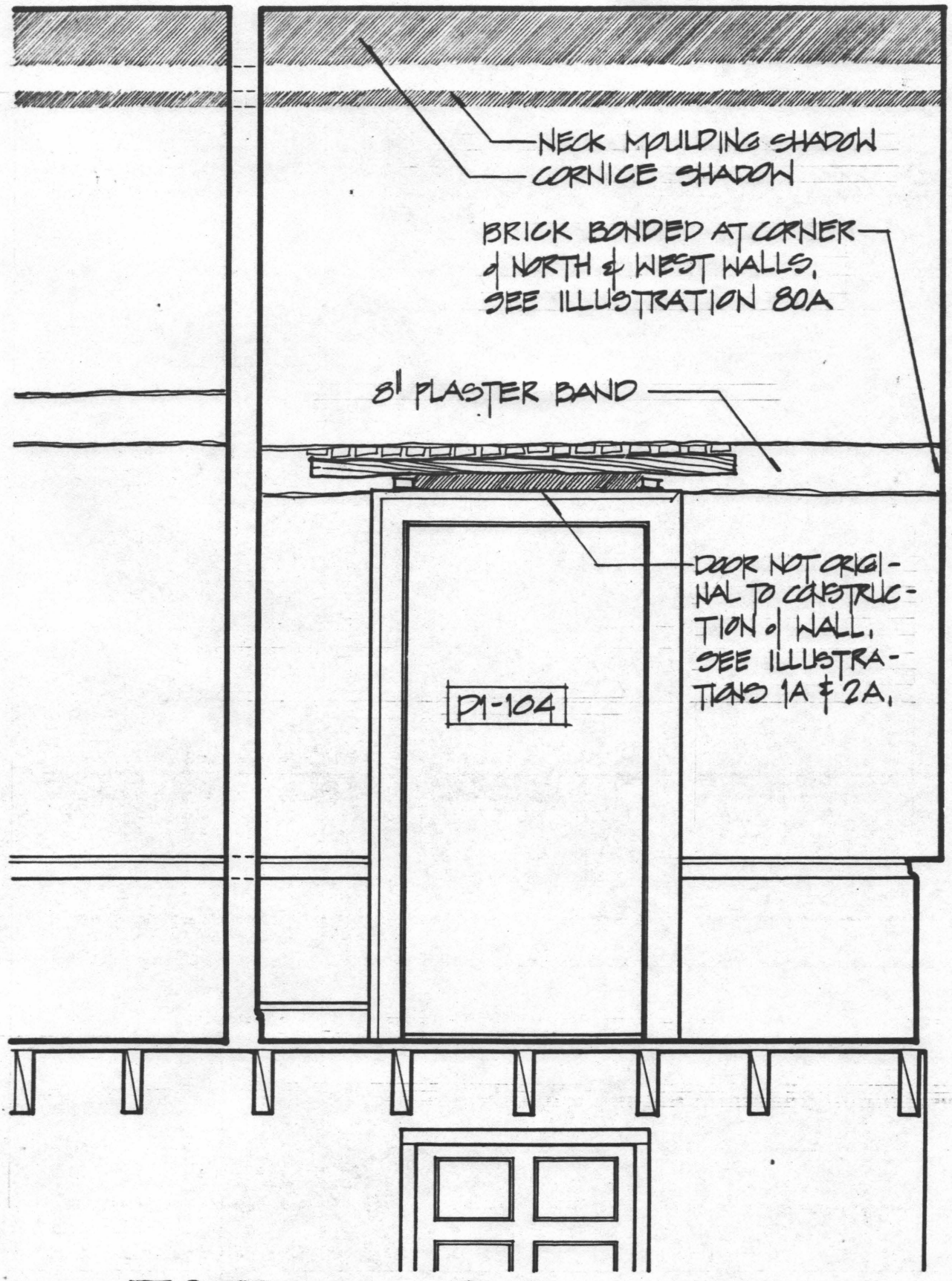
scale: 1/8" = 1' - 0"





NOTE: Letter designations indicating a sequence of plaster series apply only to the page on which they are shown, and do not represent a general sequence throughout the north wing.

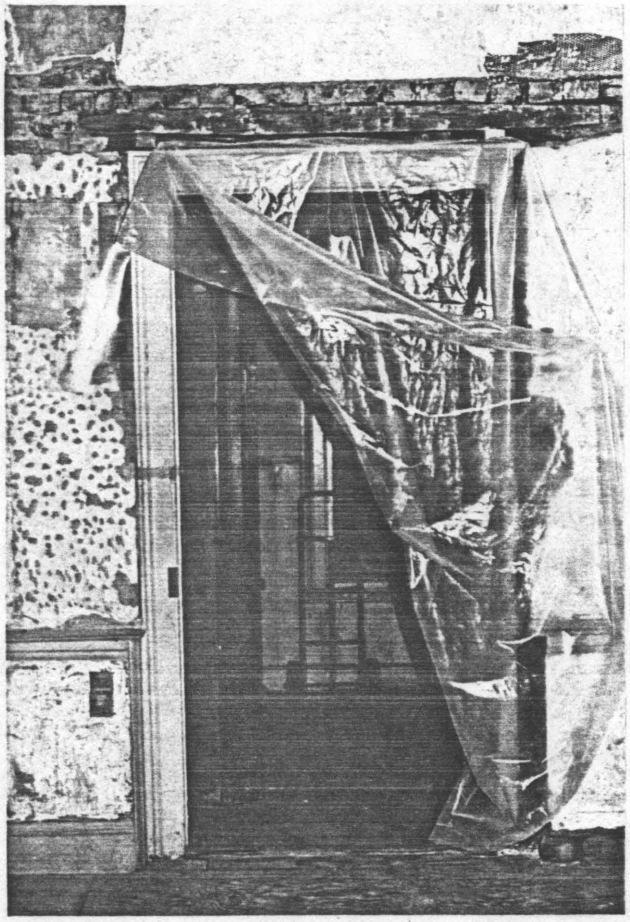
II. PHYSICAL EVIDENCE



WEST WALL RM 104 ELEVATION

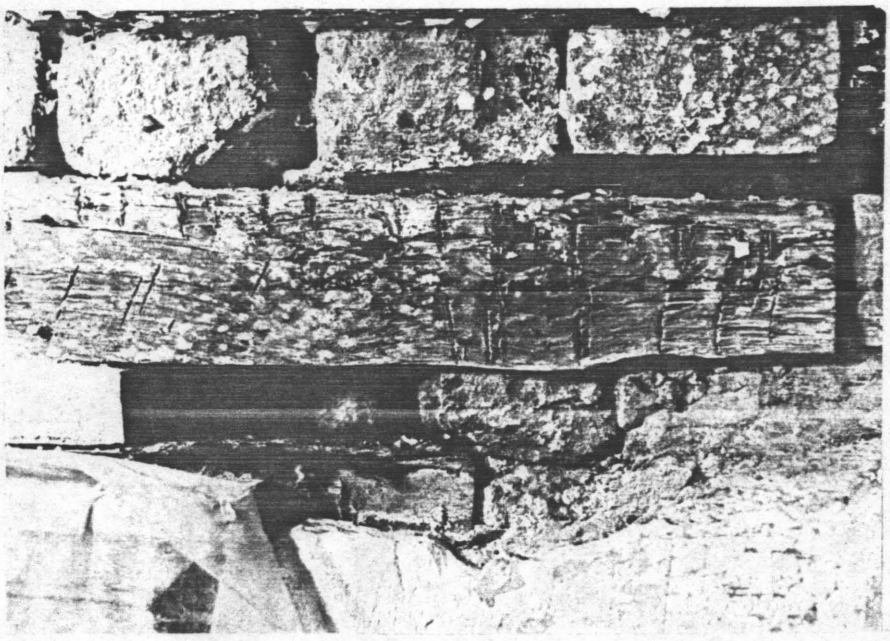
SCALE: 1/2" = 1'-0"

0 1 2 3 4 6 FEET



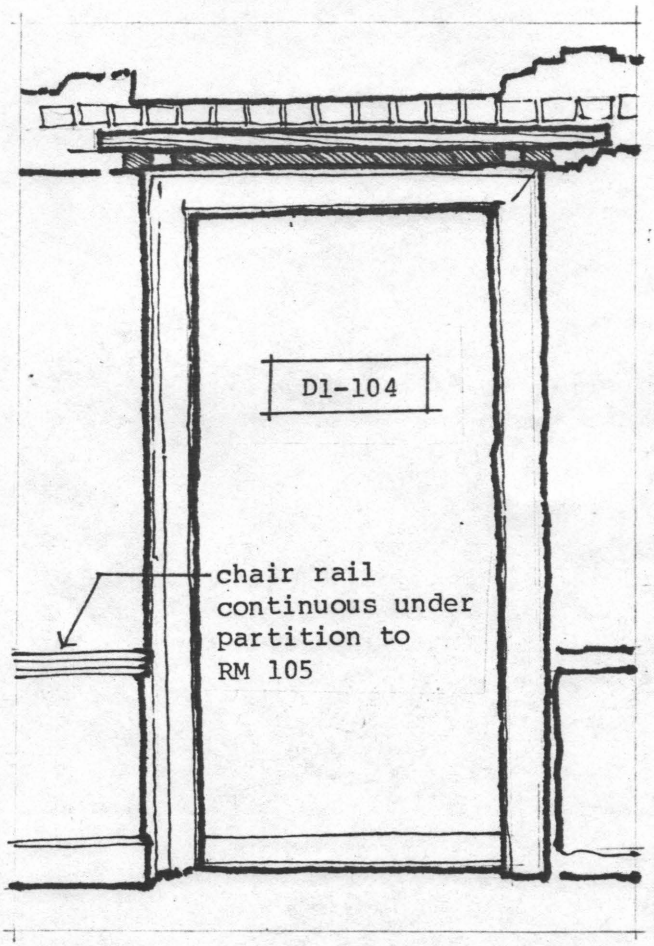
West wall RM 104
Door D1-104

1



West wall RM 104
Detail of lintel
at north jamb,
Door D1-104

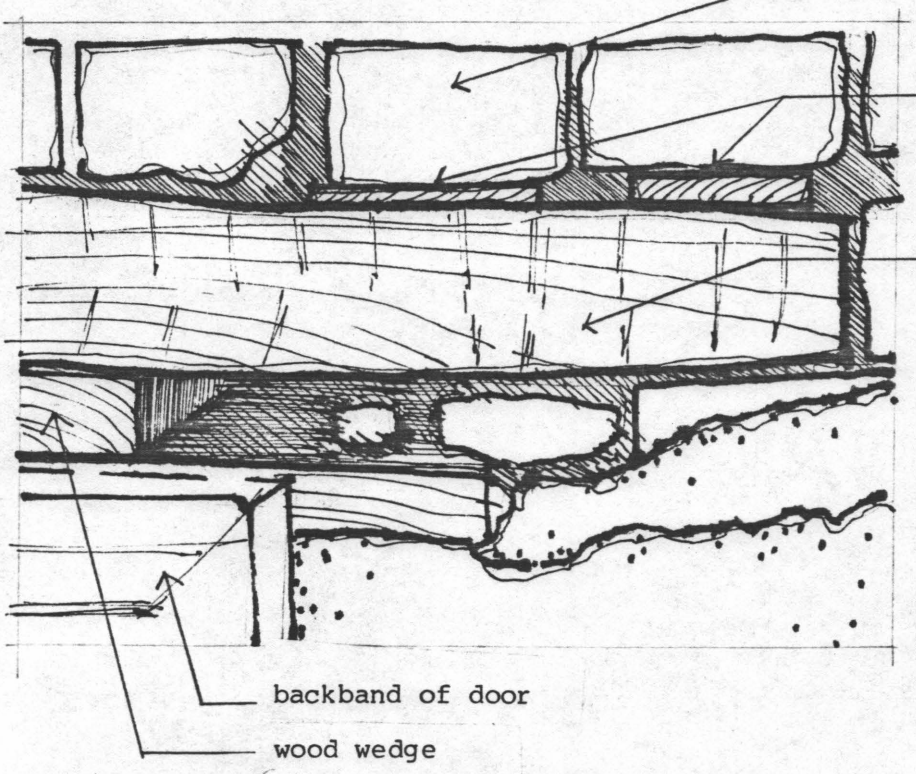
2



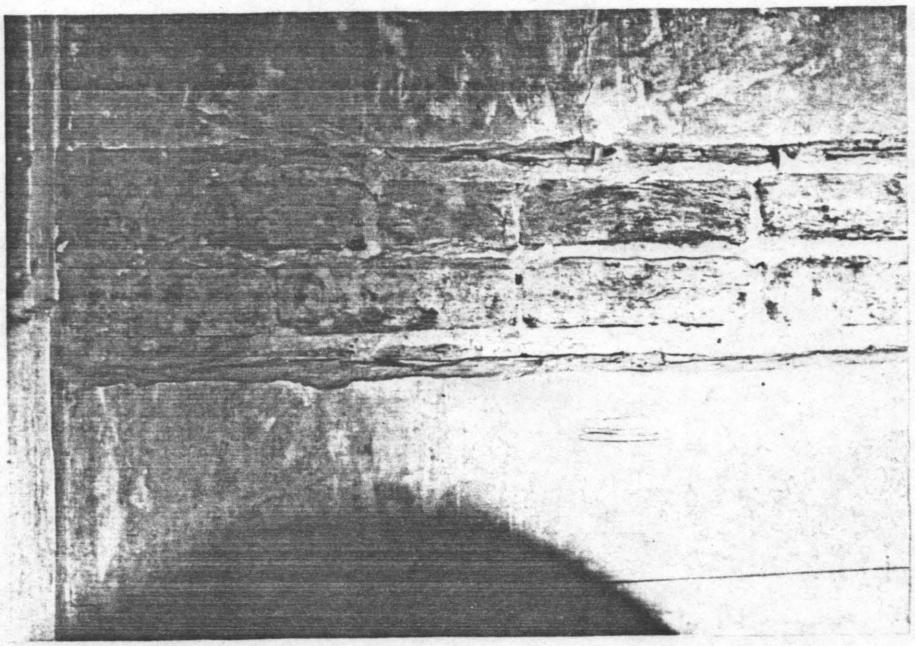
1A

Door not original to construction of wall. Brick at jambs sheared off to form opening. Hewn wood lintel is reused, as evidenced by noncontextual tenon at midspan, wood wedges and shims to level frame, and cut masonry lugs at lintel bearing points.* First course of brick headers above lintel has dropped from bed joint above. Head joints are poorly bonded.

*masonry lug--a projection of the lintel extending beyond the opening into the masonry.

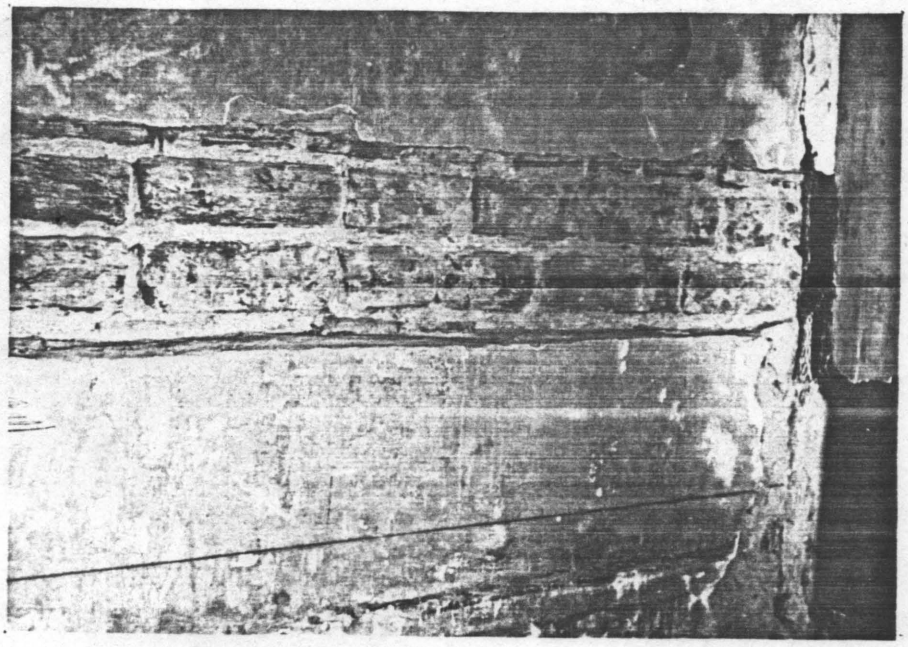


2A



West wall RM 105
north of chimney
breast

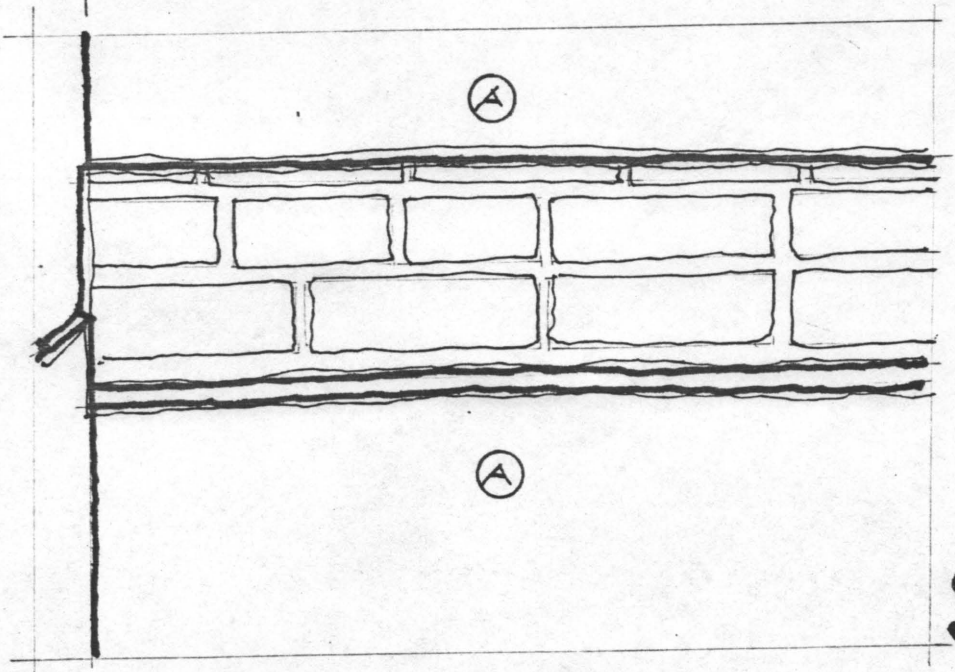
3



West wall RM 105
south of partition

4

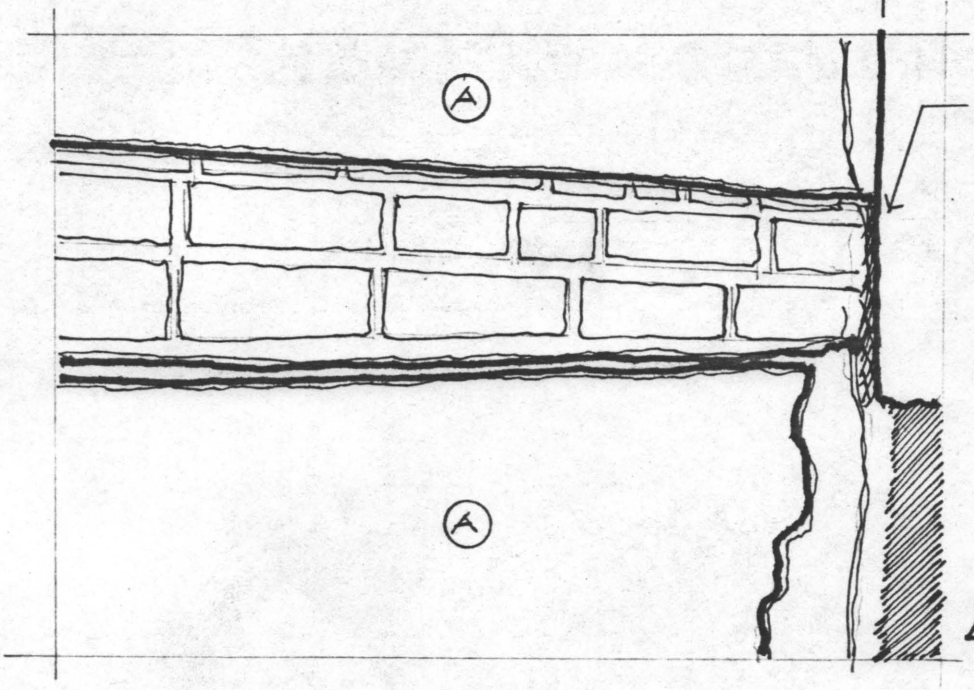
north face of chimney breast | west wall RM 105 north of chimney breast



3A

(A) First and only series of plaster on brick. Approx. 2" thick, composed of rough coat, brown coat and finish coat.

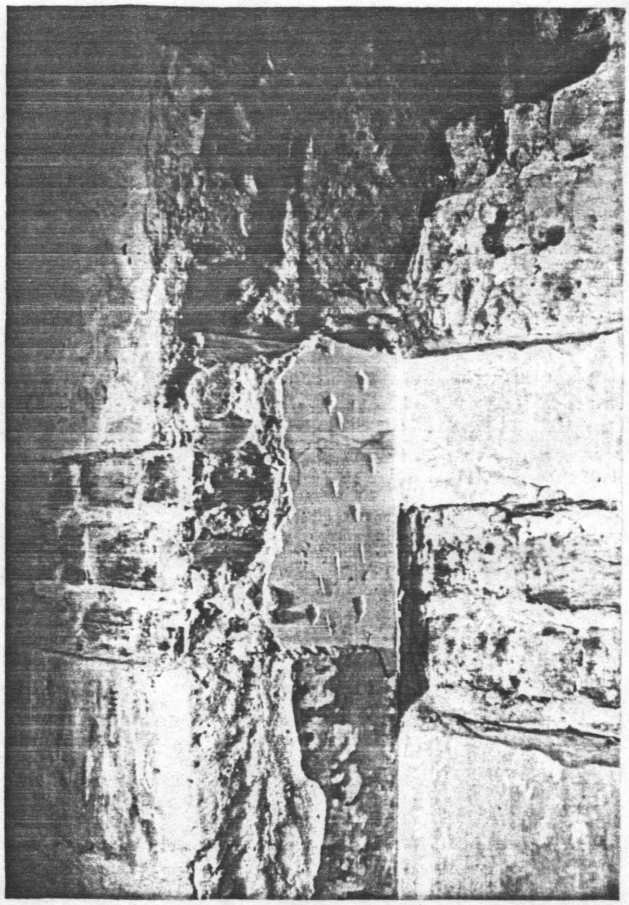
west wall RM 105 | north wall RM 105



4A

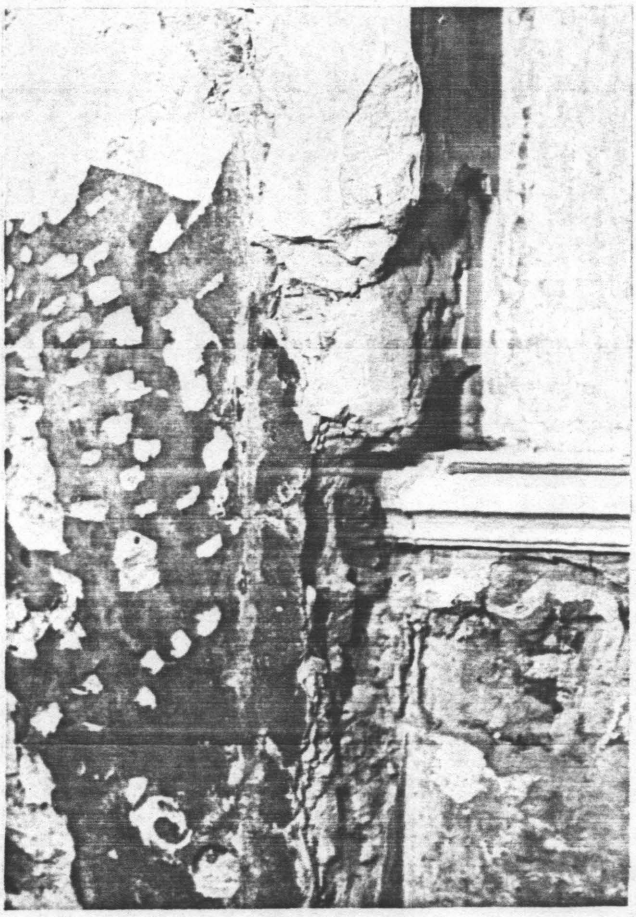
Plaster cut full height at intersection of partition and bearing wall. Patched over expanded metal lath. Therefore, continuity cannot be established between wall and partition plaster series.

Masonry features -- Note the lack of consistant bonding pattern, stacked head joints, and random use of headers. There is no evidence of construction joints or infilled masonry openings.



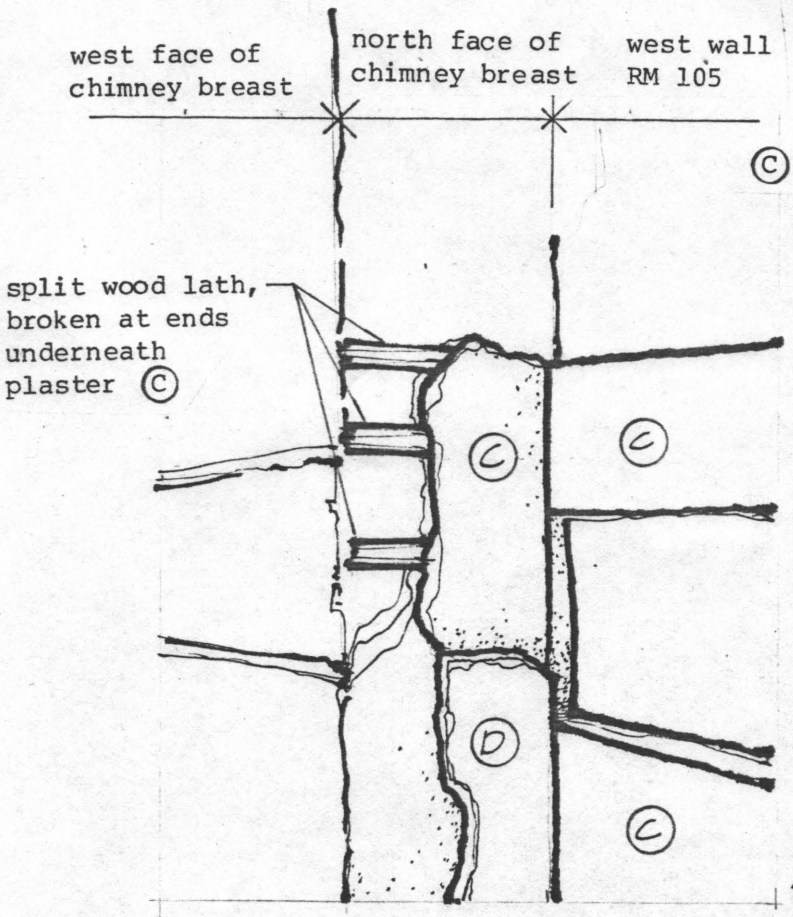
West wall RM 105
North face of chimney breast
approx. 100" above existing
floor level

5



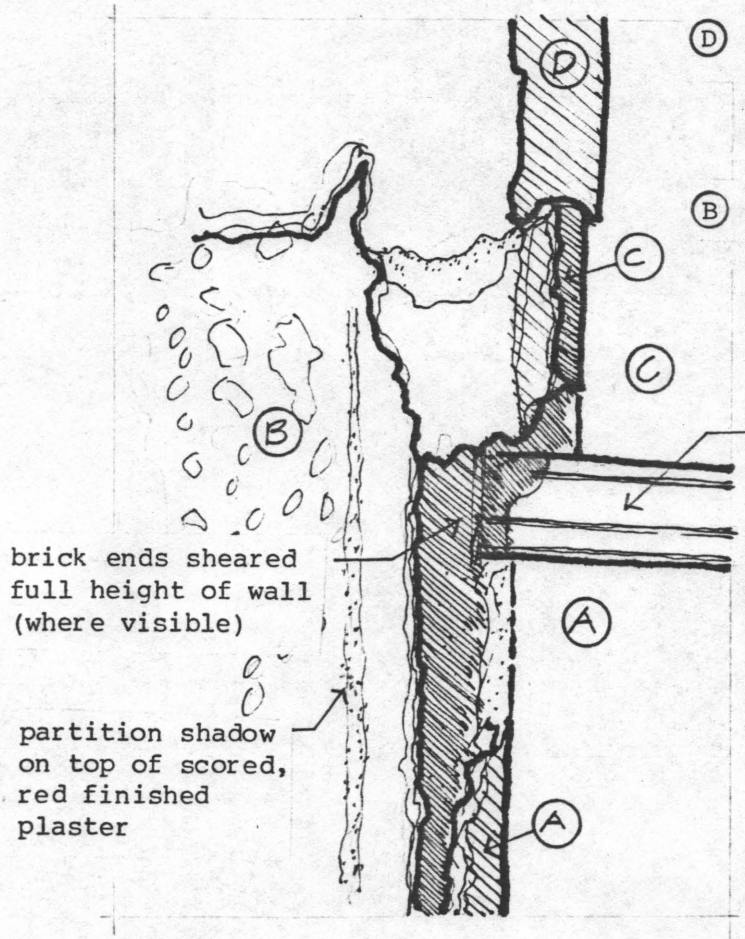
West wall RM 105
intersection of chair rail
at chimney breast

6



5A

(C) First series of plaster on brick. Approx. 2" thick, consisting of rough coat, brown coat, and finish coat. At the north face of the chimney breast this plaster turns the corner in a continuous fashion. Reduced in thickness, it covers split wood lath on brick, and terminates abruptly in a broken edge. The split lath and first series of plaster are the remnants of the north face of a partition which formerly ran perpendicular to the west elevation of the chimney breast. This partition is the first extant trace of a post floor reduction interior arrangement. At chair rail height plaster (C) is placed over the horizontal surface of the chair rail.

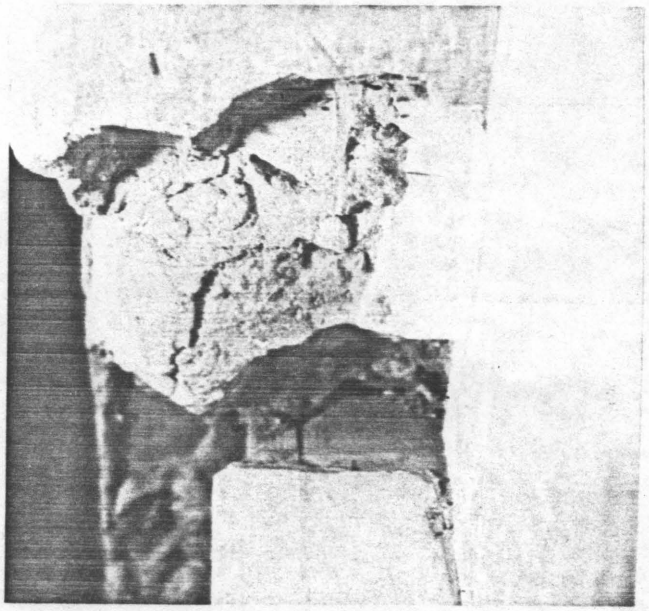


6A

(D) Most recent full series of plaster. Approx. 3" thick, applied as a uniform surface over the north, west, and south elevations of the chimney breast.

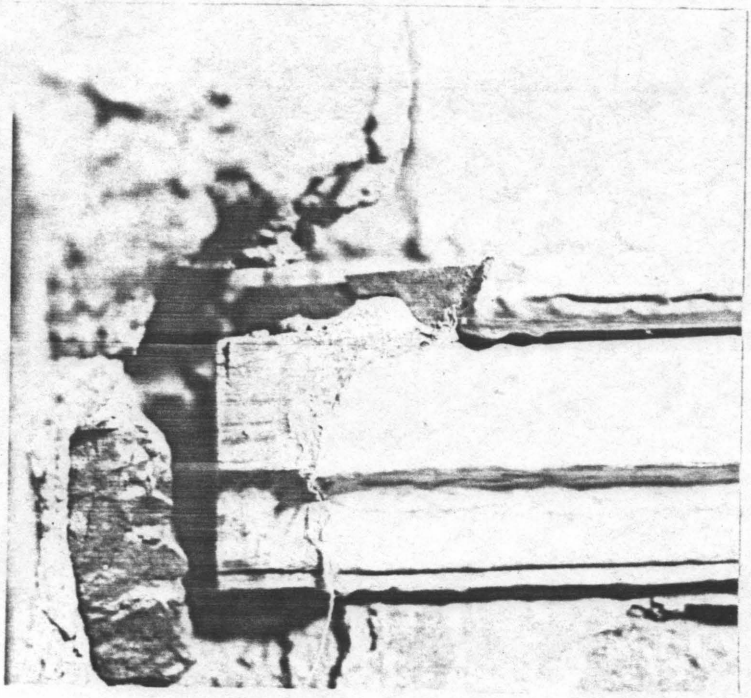
(B) First series of plaster on brick in this location. The surfaces bears an applied red finish, believed to be calcimine paint. Scored to receive subsequent plaster series.

Chair rail on top of brick ledger formed by reduction in wall thickness to a height approx. 26" above the existing floor. The vertical element of the chair rail rests on top of plaster (A), which apparently predates the reduction of the wall. This is shown by the broken upper edge of the plaster, which is sheared uniformly at the reduced height of the ledge wall.



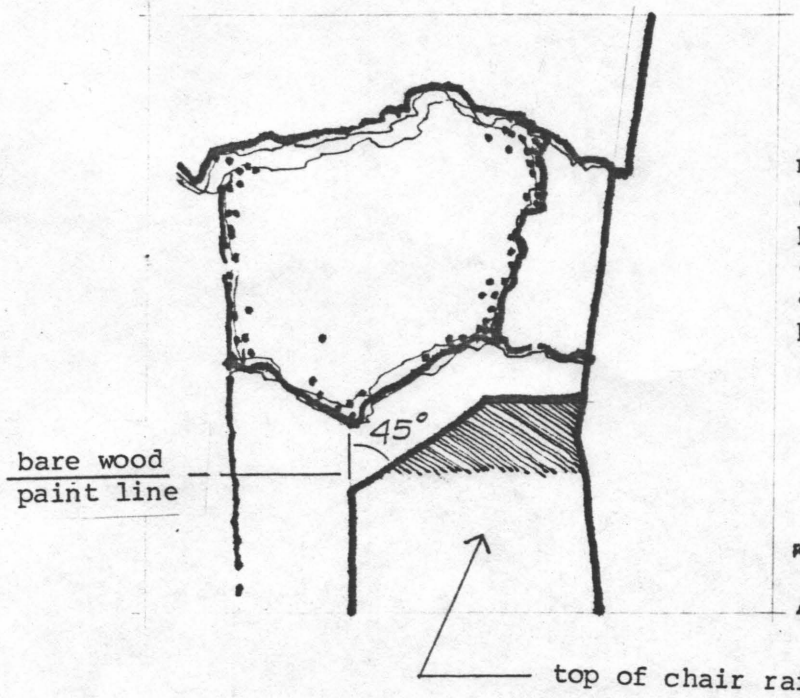
West wall RM 105, chair rail intersection at north face of chimney breast (plan view)

7



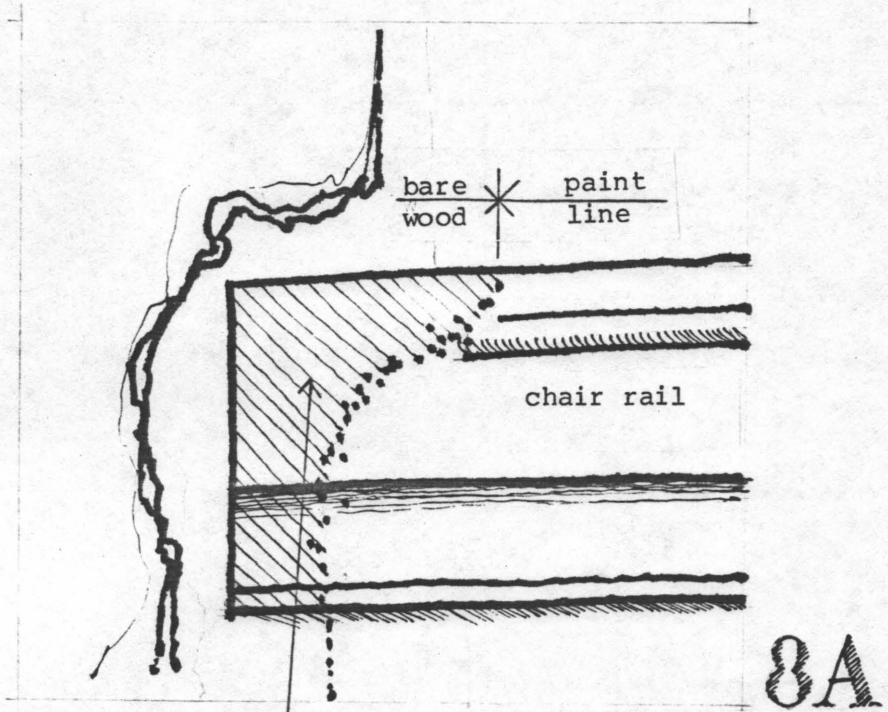
West wall RM 105, chair rail intersection at north face of chimney breast (elevation view)

8



mitered end at chair rail indicates a 90 degree turn at the former partition face (see illustration 5A), and the continuation of the chair rail across the north face of the former partition.

7A

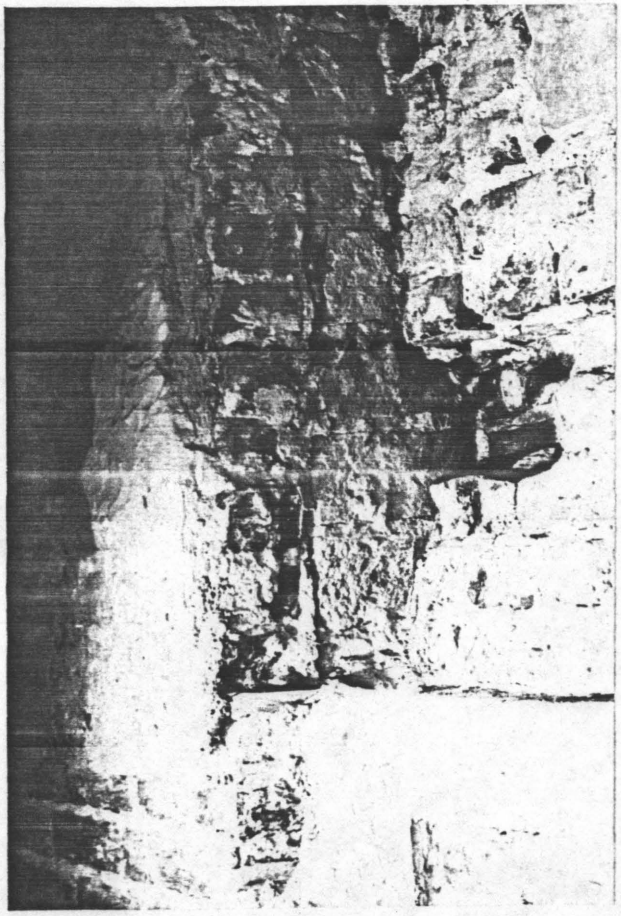


8A



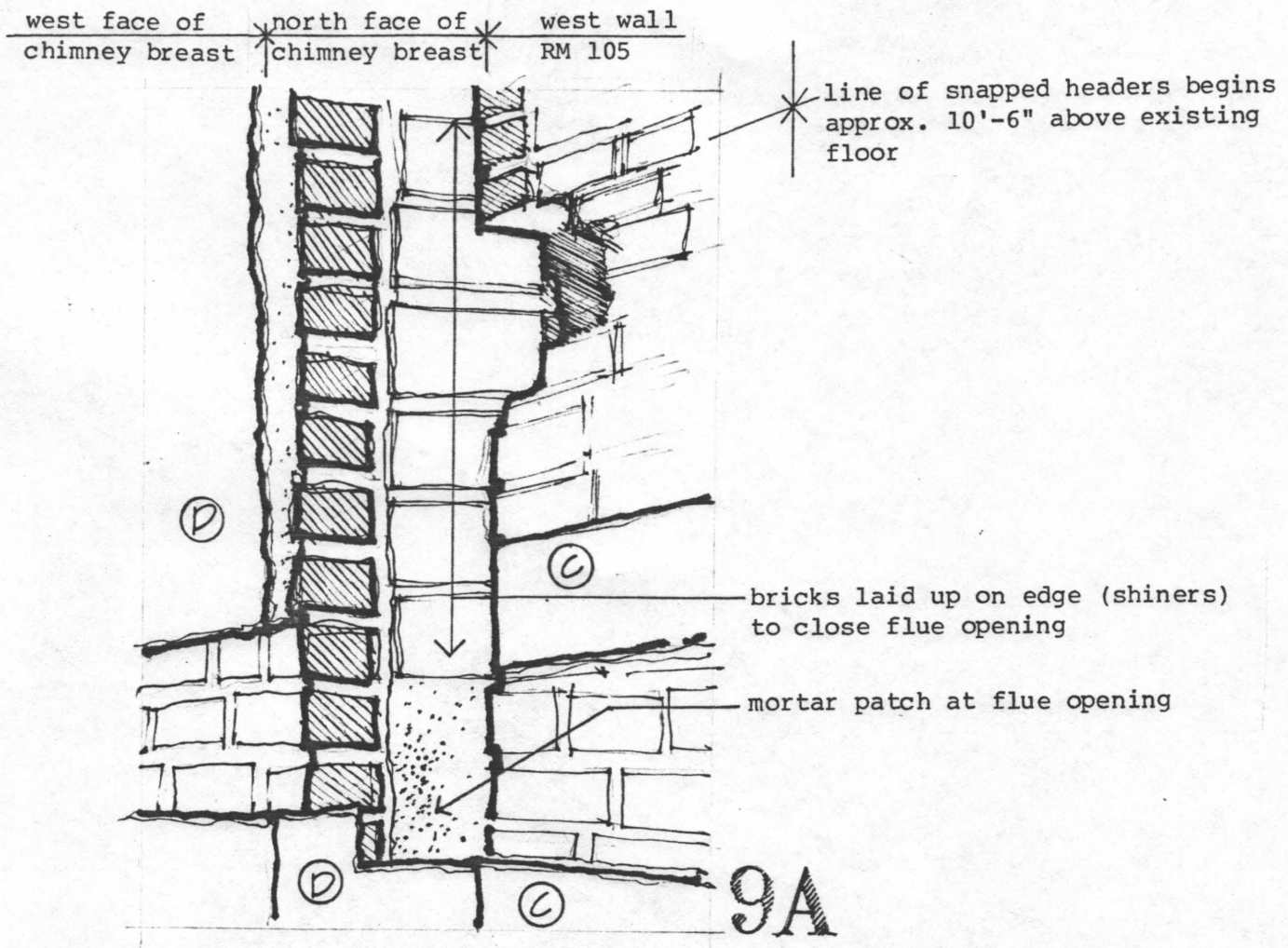
RM 105, north face of chimney breast at west wall

9

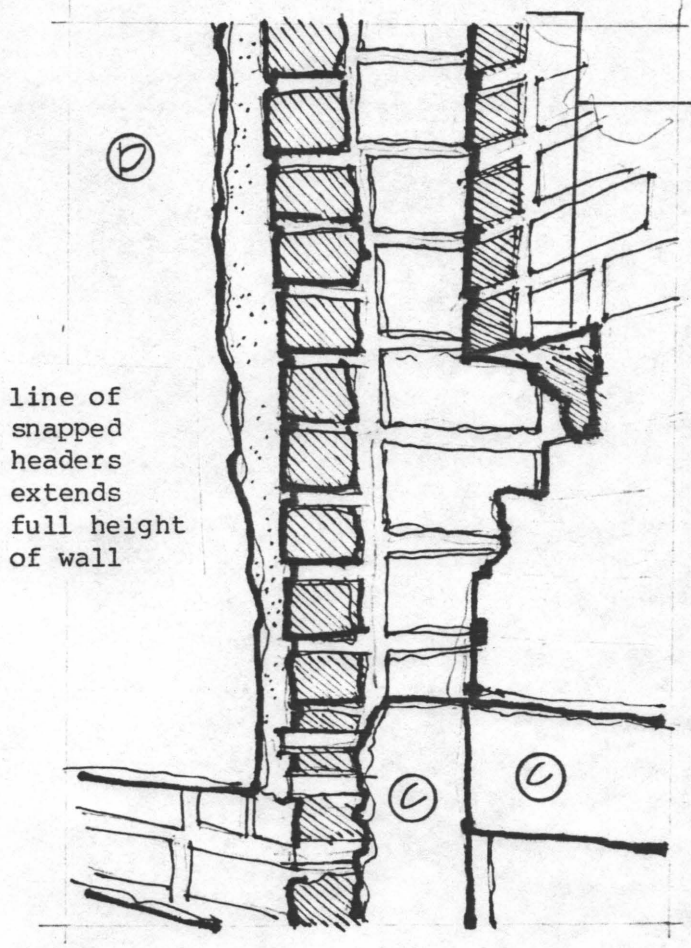


RM 105, north face of chimney breast at west wall

10



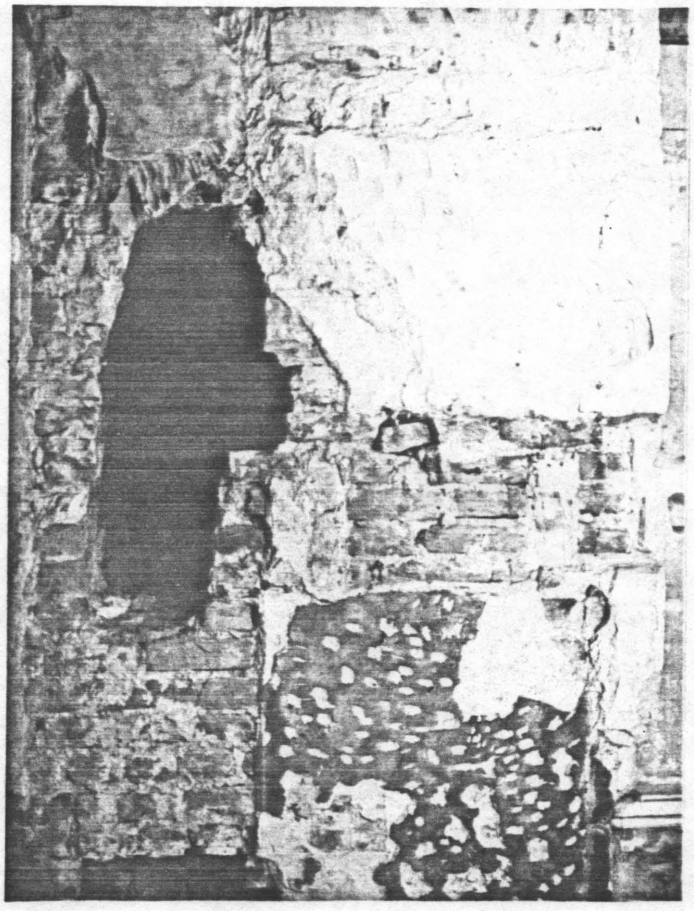
9A



Ⓒ and Ⓓ plaster series, see illustrations 5A and 6A

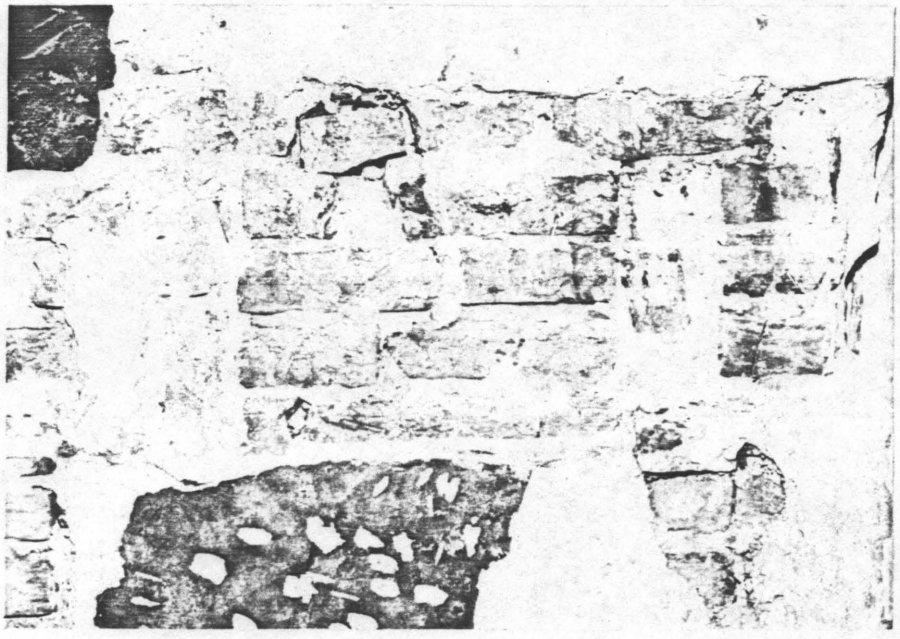
This feature apparently represents a flue original to construction of the wall. The sheared bricks at the face of the chimney breast and the adjacent west wall show no evidence of changes other than those involve in closing the flue and reducing the wall to its present configuration. The floor to ceiling line of broken bricks at the north end of the chimney breast indicate that the face of this wall originally extended northward for an unknown distance. The snapped headers on the west wall show the original eastward projection of a single thickness of brick for at least part of the height of the wall.

10A



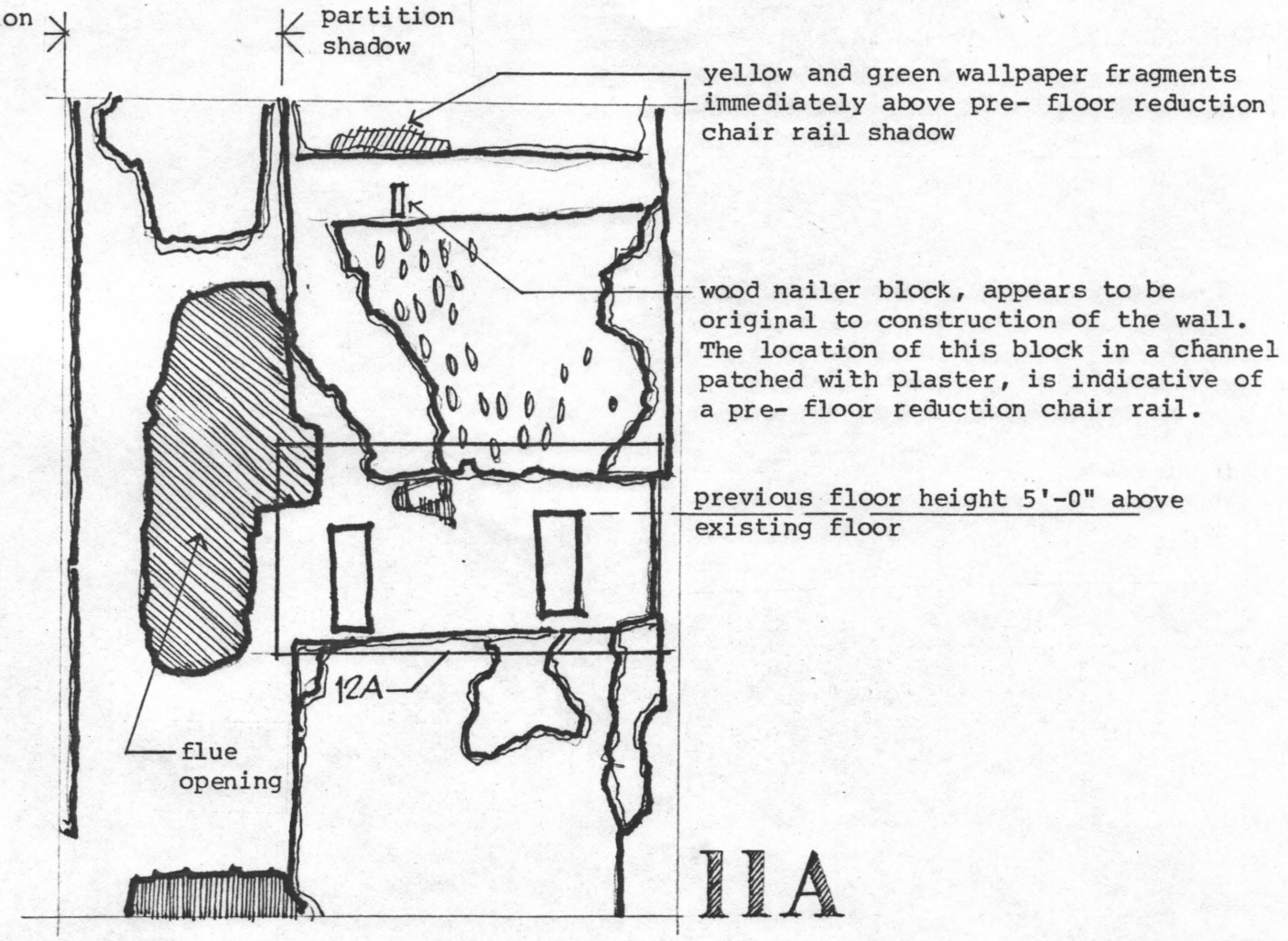
West wall RM 105, face of chimney breast

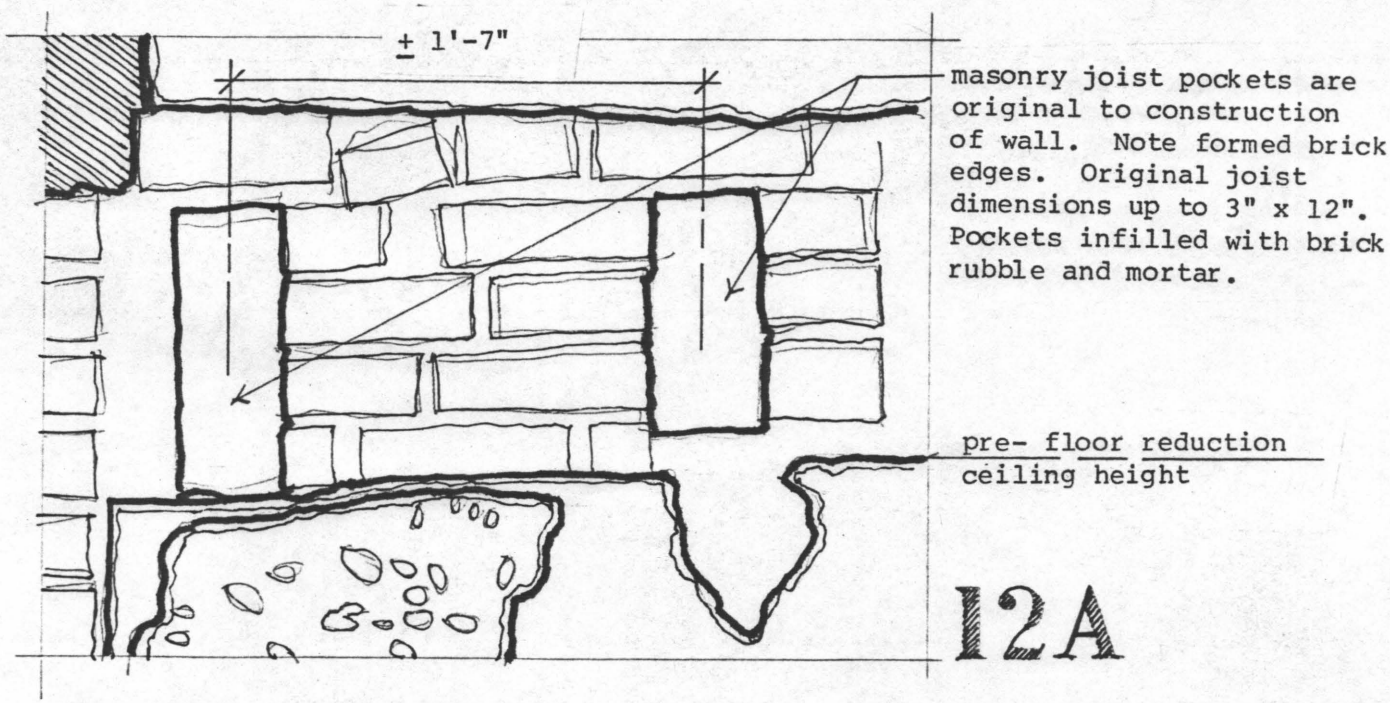
11

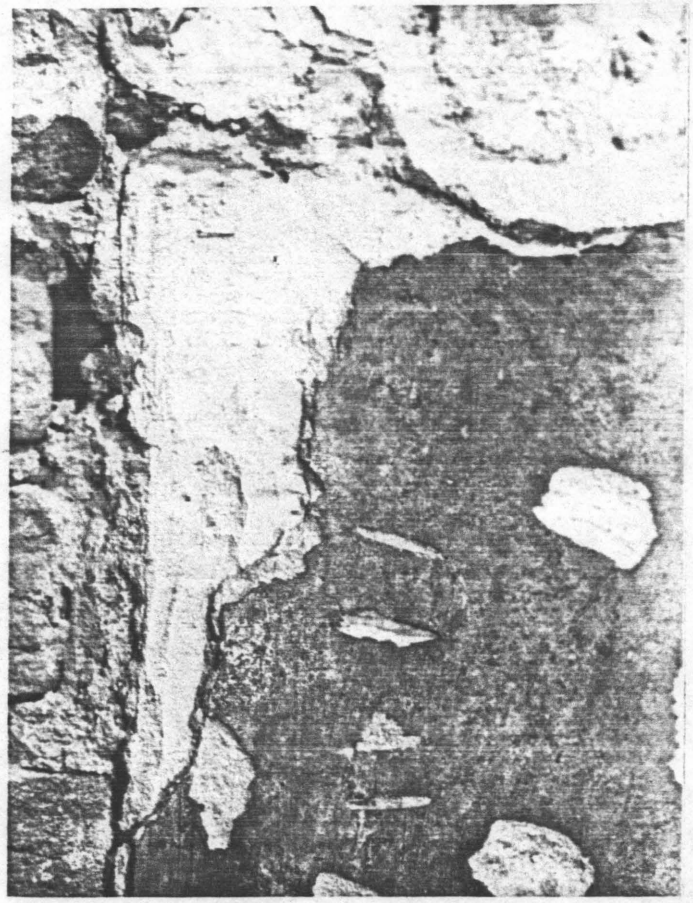


West wall RM 105, detail of infilled joist pockets at chimney breast

12

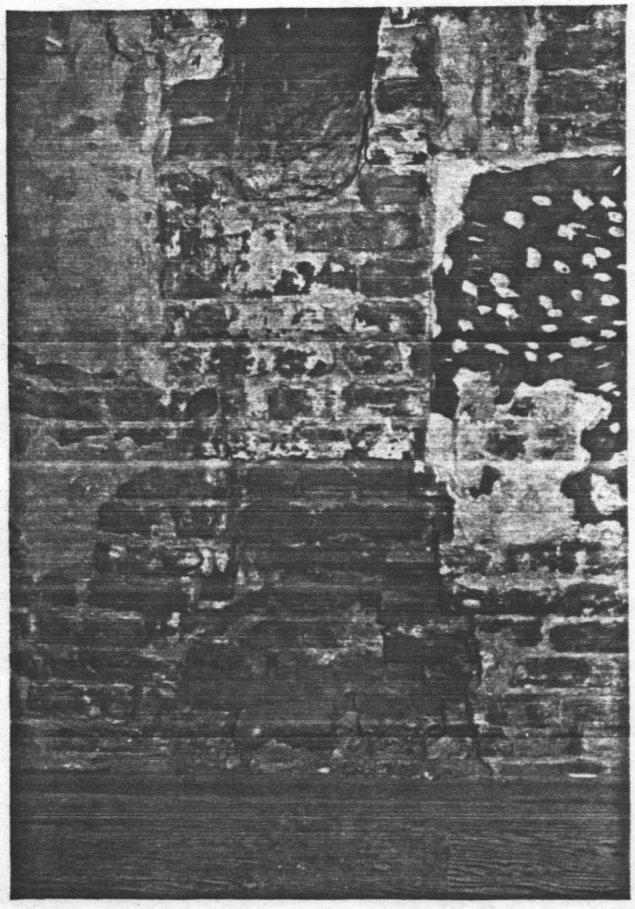

partition shadow
partition shadow
yellow and green wallpaper fragments immediately above pre- floor reduction chair rail shadow
wood nailer block, appears to be original to construction of the wall. The location of this block in a channel patched with plaster, is indicative of a pre- floor reduction chair rail.
previous floor height 5'-0" above existing floor
12A
flue opening
11A


± 1'-7"
masonry joist pockets are original to construction of wall. Note formed brick edges. Original joist dimensions up to 3" x 12". Pockets infilled with brick rubble and mortar.
pre- floor reduction ceiling height
12A



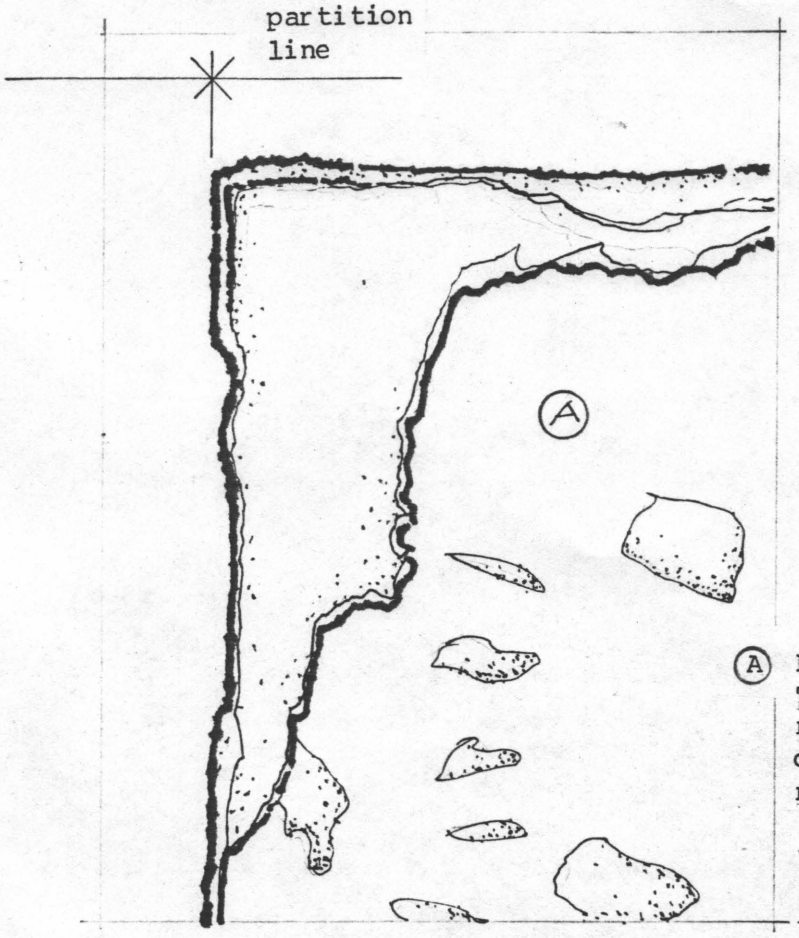
West wall RM 105, face of chimney breast, detail of plaster return

13



West wall RM 105, central portion of chimney breast

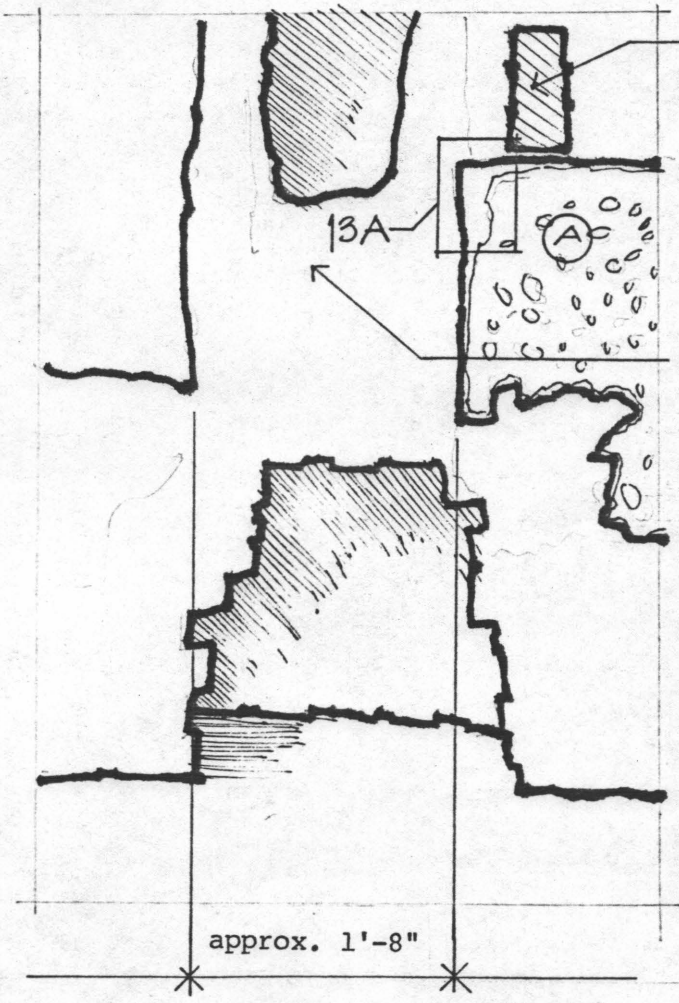
14



Note formed edge where plaster turned horizontal and vertical corners and continued along ceiling and north face of partition/wall.

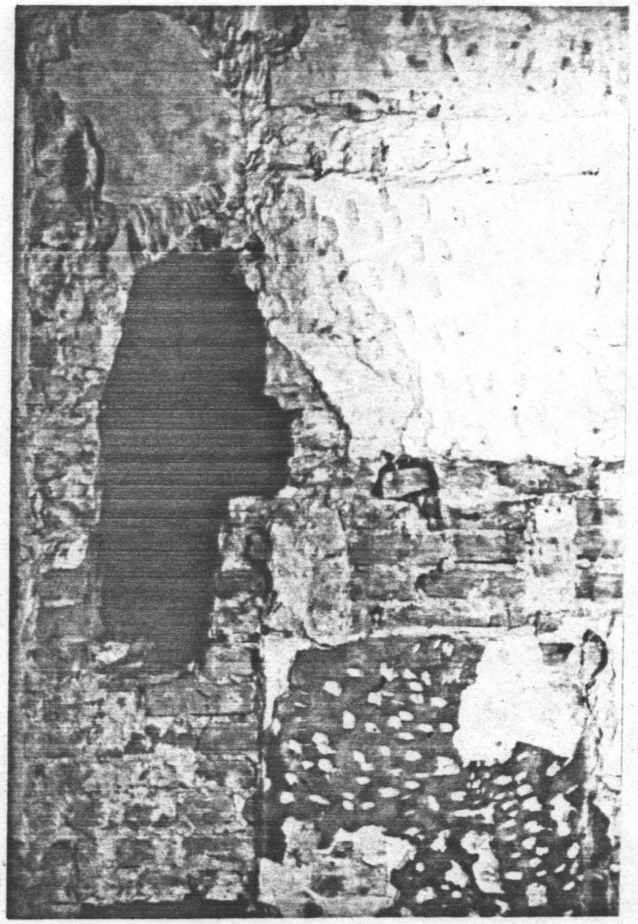
(A) First series of plaster on brick. This plaster bears an applied, red finish, believed to be calcimine paint. It is scored to receive subsequent plaster series.

13A



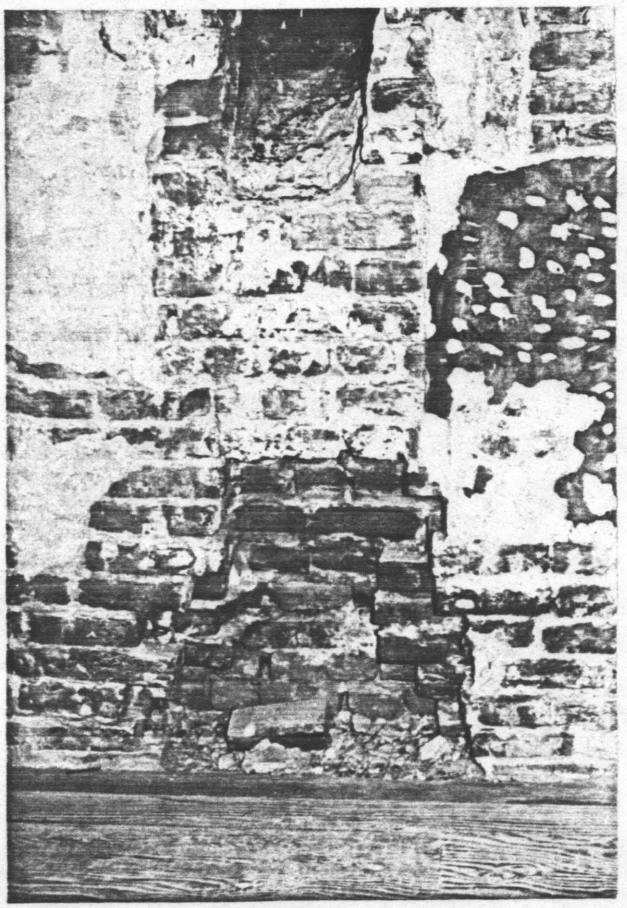
This exposed area of brick extends floor to ceiling in a vertical channel approx. 1'-8" wide, bounded on both sides by several plaster types, all having distinct formed edges representing a 90 degree corner at the face of a wall or partition. This feature shows only one series of finish plaster which is continuous with the most recent series over the entire chimney breast. See plaster (D) in illustrations 5A and 6A, and plaster (A) in illustration 15A.

14A



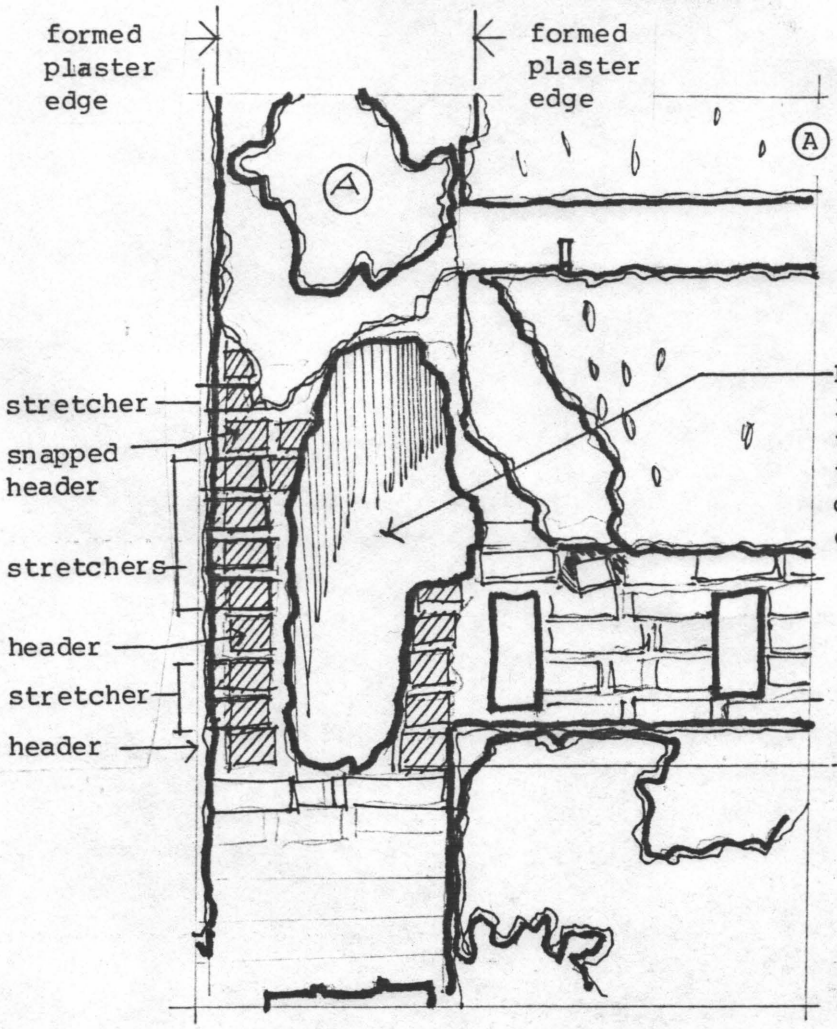
West wall RM 105,
face of chimney breast,
lower middle quarter of
exposed masonry feature

15



West wall RM 105,
face of chimney breast,
lower quarter of
exposed masonry feature

16

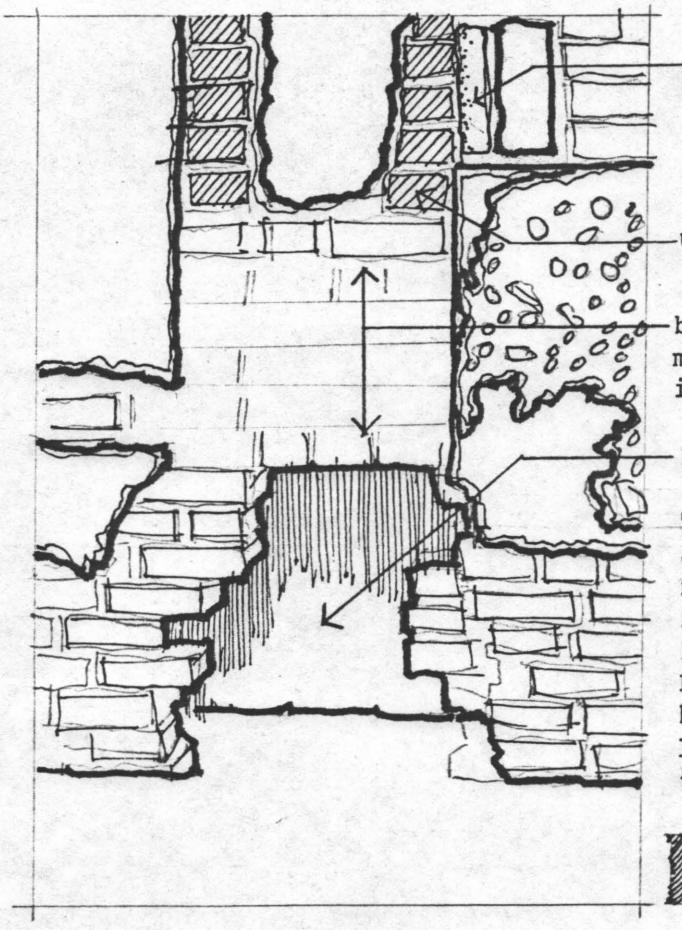


(A) First series of plaster on brick between partition lines. Continuous with most recent series over entire west, north, and south face of chimney breast.

Flue opening, measuring approx. 3'-0" x 1'-0". Broken bricks at the face of the opening indicate that the flue was either not an original feature, or that it was enlarged.

bottom of flue opening approx. 3'-9" above existing floor

15A



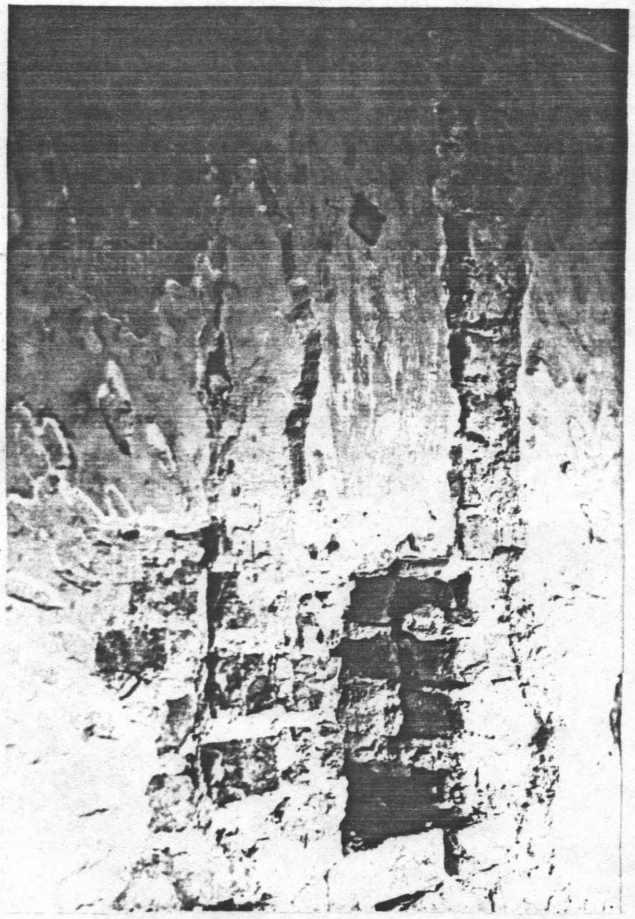
plaster patch infilled at joist height shows partition shadow at south edge.

unfired brick header

brick bonded in relatively continuous manner across face of chimney breast in this area.

Patched opening uncovered during 1980-81, physical investigation. The opening is a noncontextual area of removed bricks, possibly representing an early architectural investigation based on Gilbert Rodier's 1924, article in Architectural Forum. Rodier believed that the chimney breast was the original site of a large fireplace. (Snell: HSR, Historical Data Section. 1982. p.155).

16A



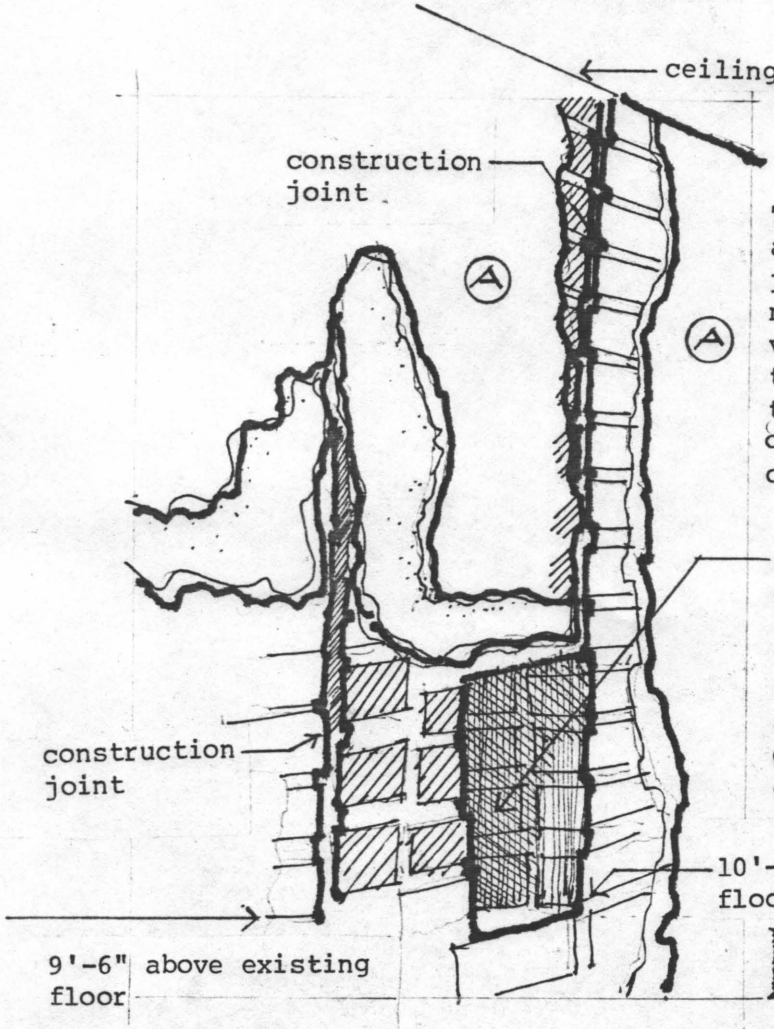
West wall RM 105,
face of chimney breast,
upper middle quarter
of exposed masonry
feature

17



West wall RM 105,
face of chimney breast,
upper quarter of exposed
masonry feature

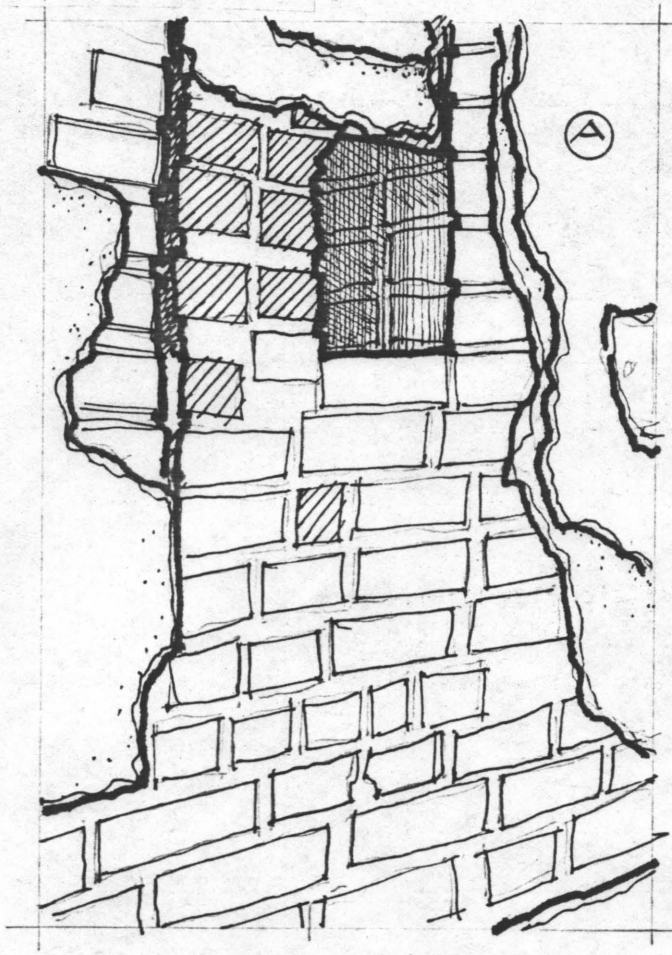
18



The top quarter of this masonry feature abruptly develops distinct construction joints at the elevations shown. The north edge shows an almost perfectly vertical construction joint to within three courses of the ceiling. There the northern head of each brick slightly overhangs the one below, forming a corbeled effect.

Opening believed to have been created during the 1980-81 architectural investigation. Bricks in this area do not bond to the adjacent wall surface, nor do they appear to bond to the outermost course of brick which forms the east wall surface of RM 101.

17A



snapped headers

In general the vertical alignment of snapped headers below the construction joints exactly parallels the formed plaster edge of the former partition/wall. However, in several instances snapped headers actually lie partially below the formed plaster edge.

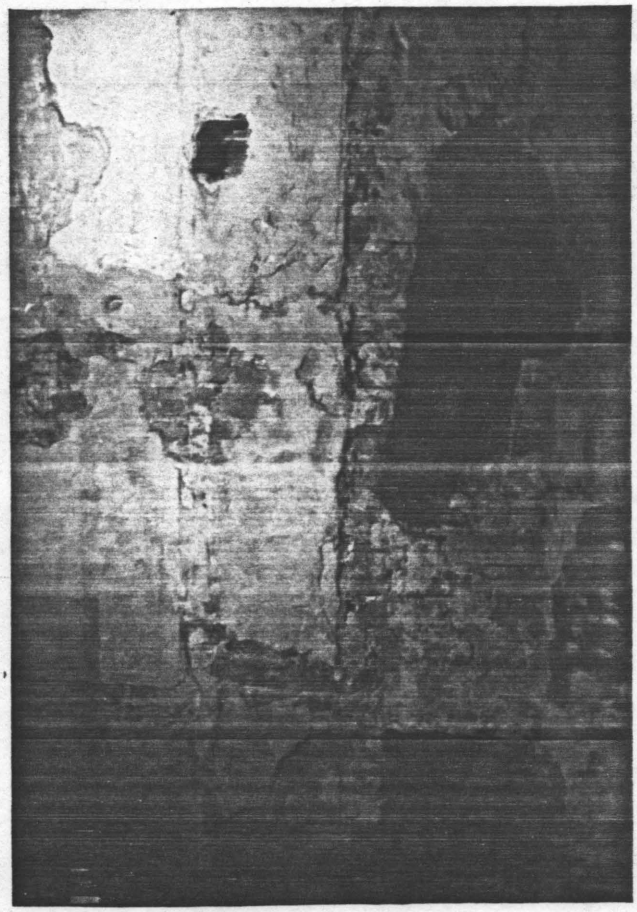
Masonry between partition lines is distinctly inferior in quality to other areas visible on the face of the chimney breast. It is characterized by use of unfired, low fired, and broken bricks laid without discernable bonding pattern.

18A



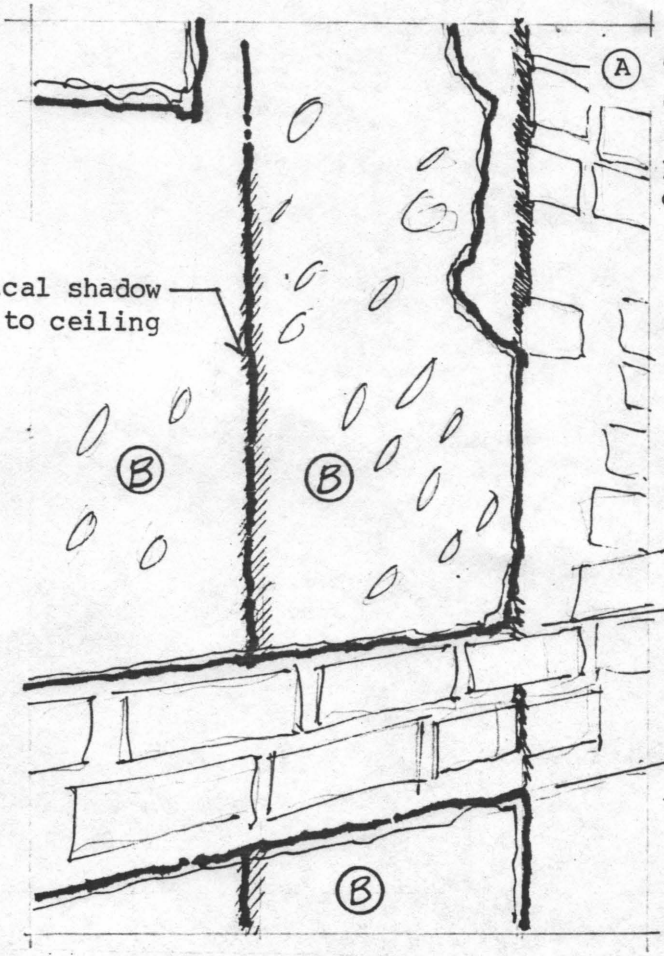
West wall RM 105, plaster detail at west face of chimney breast

19



West wall RM 105, plaster at west face of chimney breast

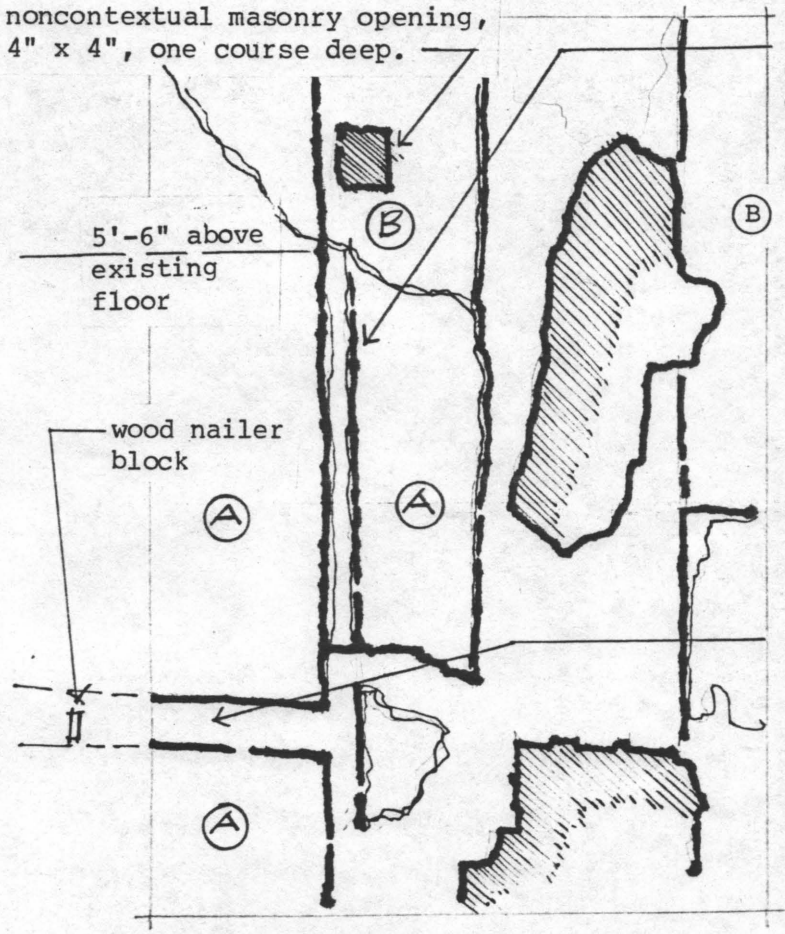
20



This first plaster against brick consists of a thin single coat bearing wallpaper fragments having a stylized wood grain pattern and boarder, just above the shadow of a baseboard at the existing floor level.

Note: a single infilled masonry opening approx. 3"x6", occurs about 6" from the south edge of the chimney breast at the same height as the joist pockets shown in illustration 12A.

19A

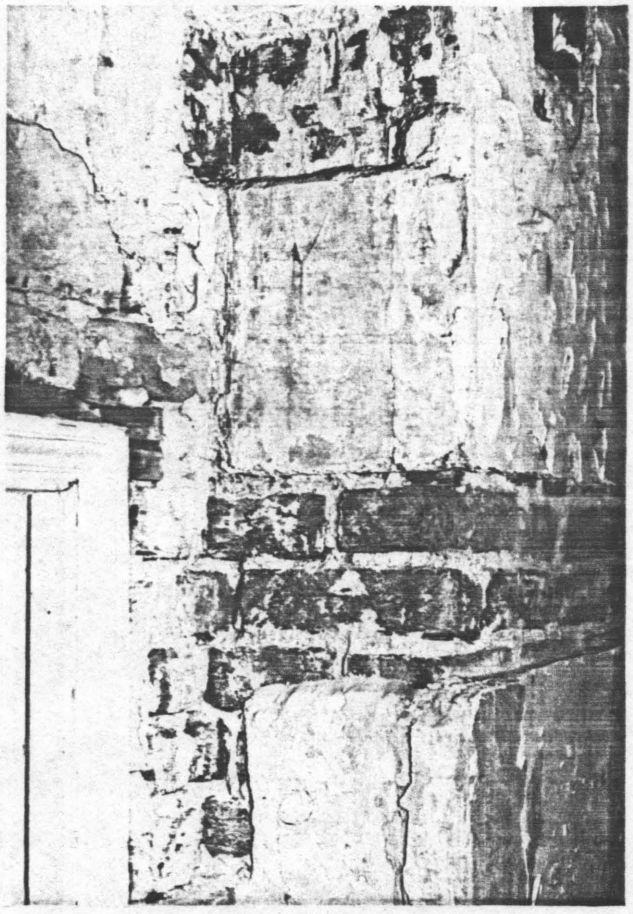


3 1/2" wide partition shadow on top of first finish coat of plaster on brick. This shadow clearly bears the shadow of both partition faces.

(B) This plaster, also the first series on brick, is distinct from plaster (A), and begins in an irregular patch approx. 5'-6" above the existing floor and continues to ceiling height. It shows a continuous vertical shadow on its surface, following the same line as the south edge of the partition shadow below. This plaster bears fragments of the same wallpaper seen in illustration 31A. Some areas of this plaster are scored to receive a later finish coat.

Exposed brick and formed plaster edges defining a 3½" wide channel, indicate a former post floor reduction chair rail location, terminating at the partition scar. A single wood nailer block remains between two stretchers.

20A



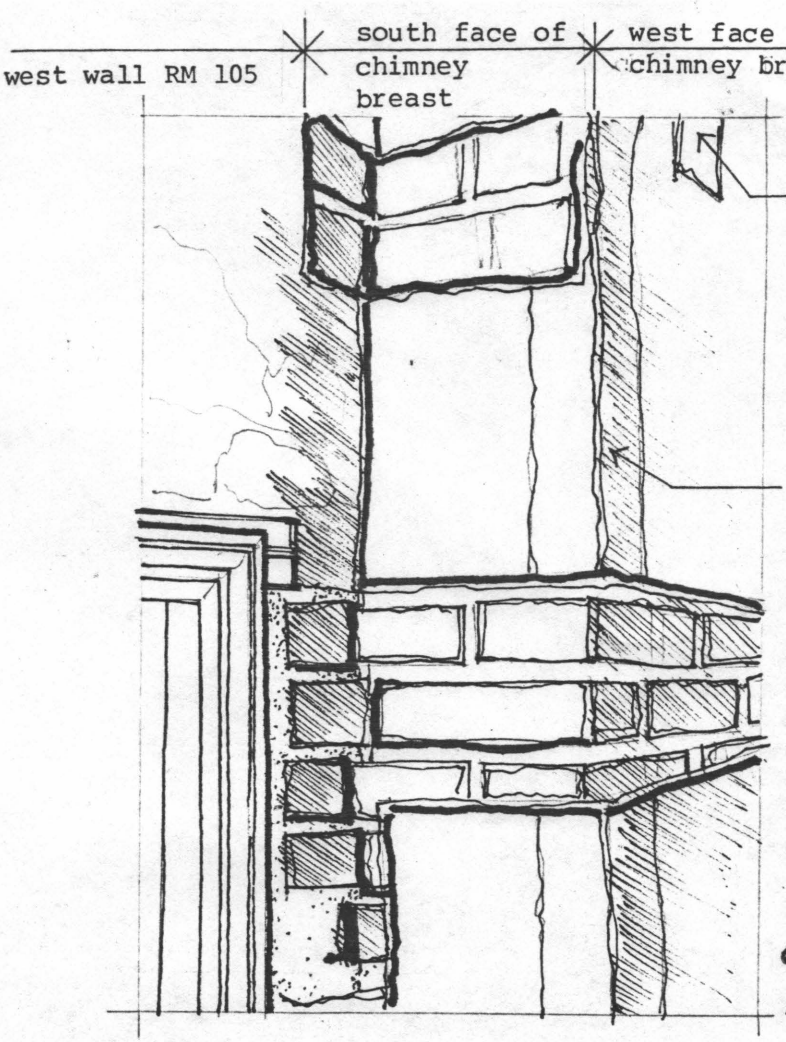
West wall RM 105,
south face of
chimney breast

21



West wall RM 105,
wall adjacent to
south face of chimney
breast

22



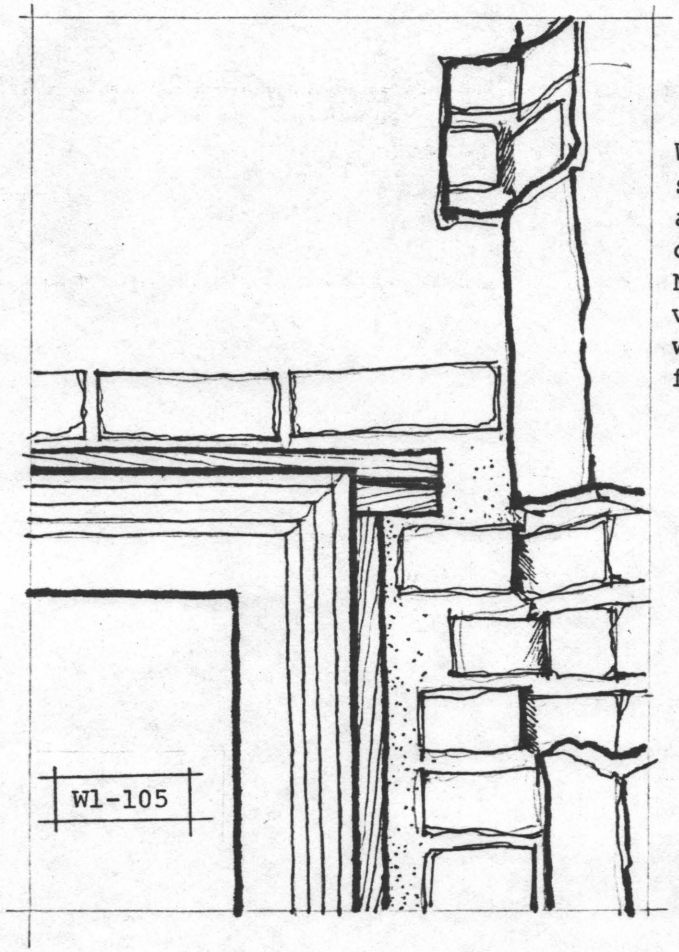
Steel plate, 1980, structural stabilization of loggia by NPS.

The brick at the south face of the chimney breast can conclusively be seen to bond with the brick on the west wall of RM 105. Note the half lapped brick at alternate courses.

Plaster at the intersection of the south and west faces of the chimney breast appears to be cut to an indeterminate depth and patched.

The south face of the chimney breast shows two series of plaster. The first layer on brick is interrupted by a chair rail scar, as at the west face of the chimney. The series above is the same finish layer found on the entire surface of the chimney breast. Both series are continuous onto the west wall south of the chimney breast.

21A



Window W1-105 is not original to construction of the wall. Sheared bricks at both masonry jambs show that the opening was broken through the wall. Note also, mortar infill to patch voids between the masonry opening and window frame. The head of the window frame serves as a lintel.

22A



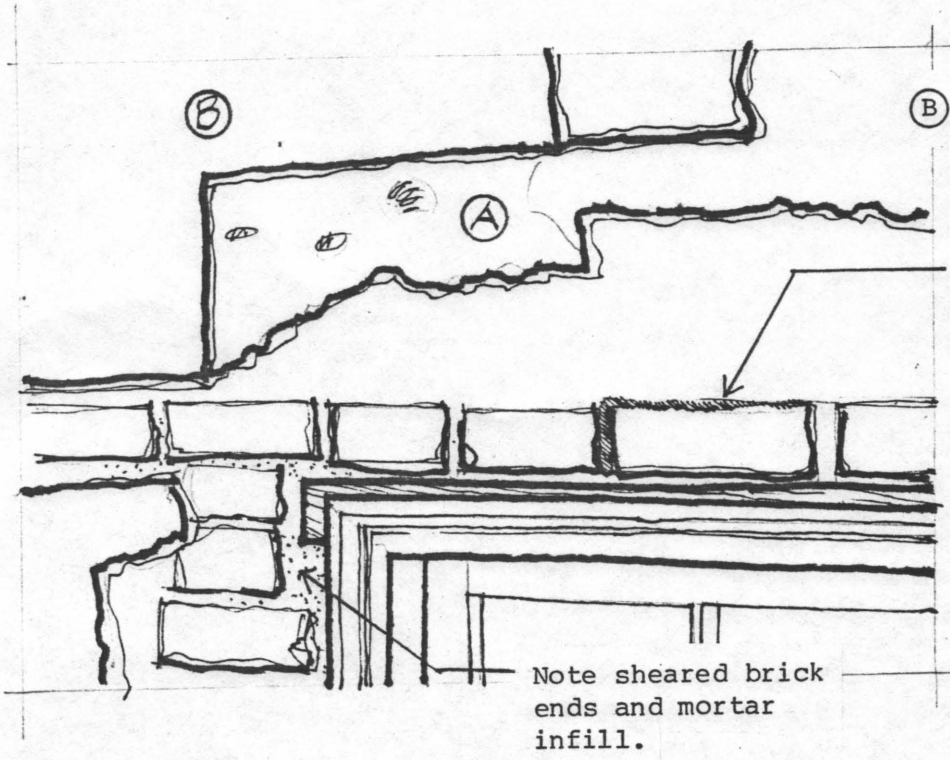
West wall RM 105,
south half of
Window W1-105 head

23



West wall RM 105,
north half of
Window W1-105 head

24



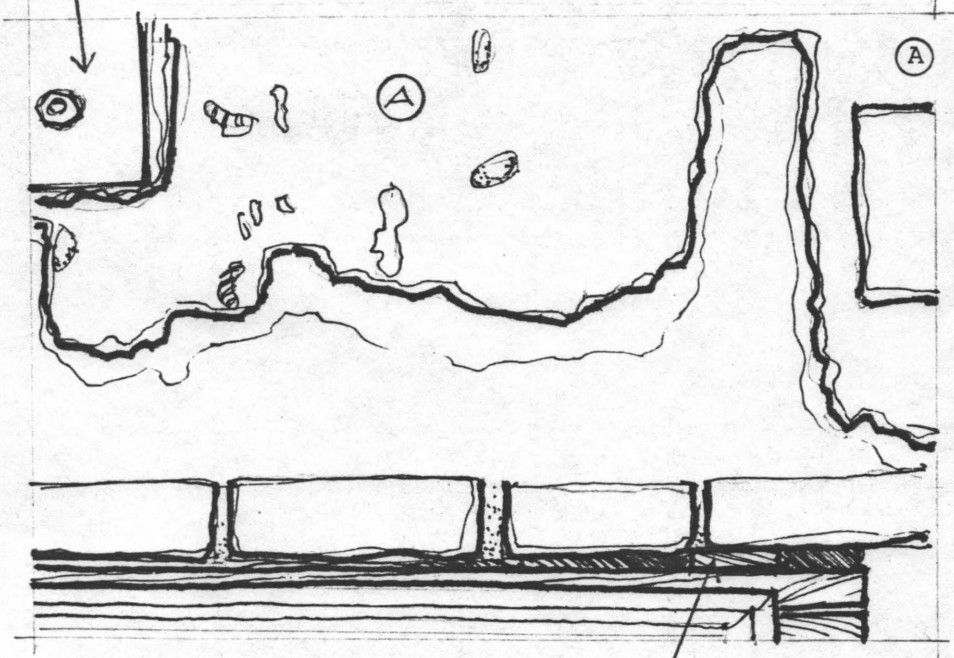
Ⓑ Most recent plaster series, continuous with with top layer on chimney breast.

Note stretcher dropped from bed joint above.

Note sheared brick ends and mortar infill.

23A

Steel plate, 1980, structural stabilization of loggia by NPS



Ⓐ First layer of plaster on brick bears fragments of same red and black wallpaper seen in illustration 31A. The irregularly broken lower edge of this plaster suggests that this finish predates window W1-105, as installation of the window would have required removal of adjacent plaster.

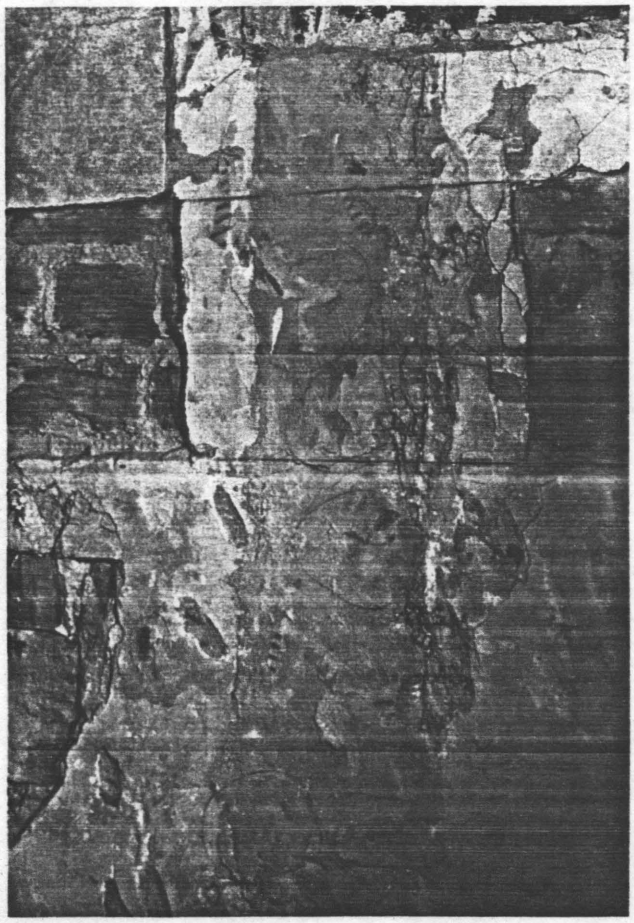
24A

wood shim



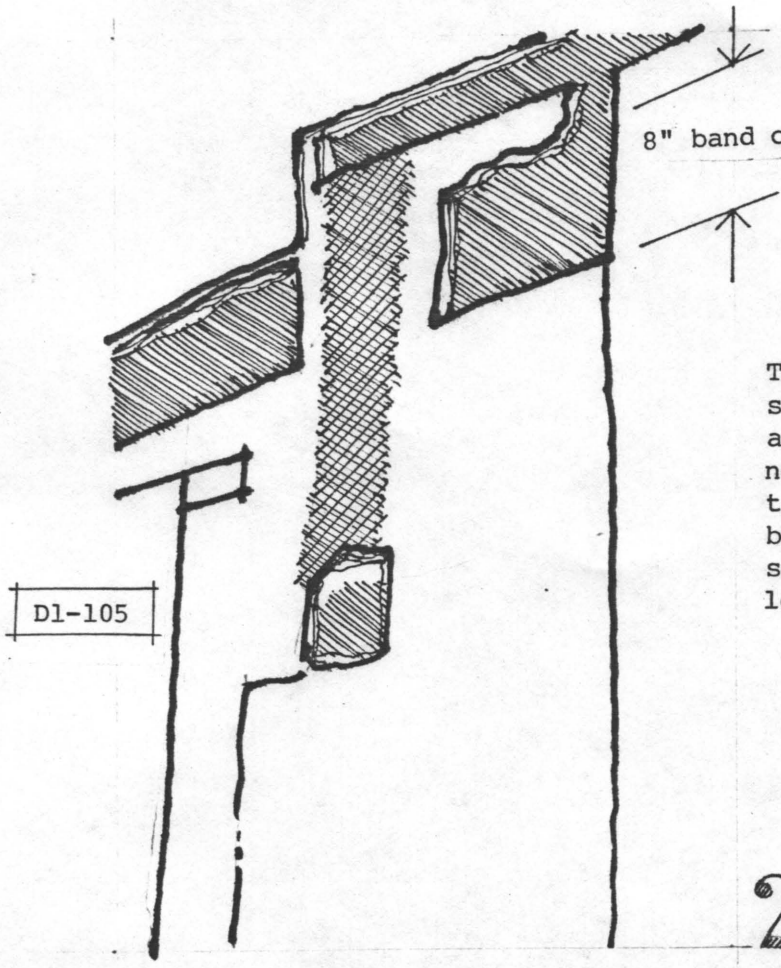
West wall RM 105,
between window W1-105
and door D1-105

25



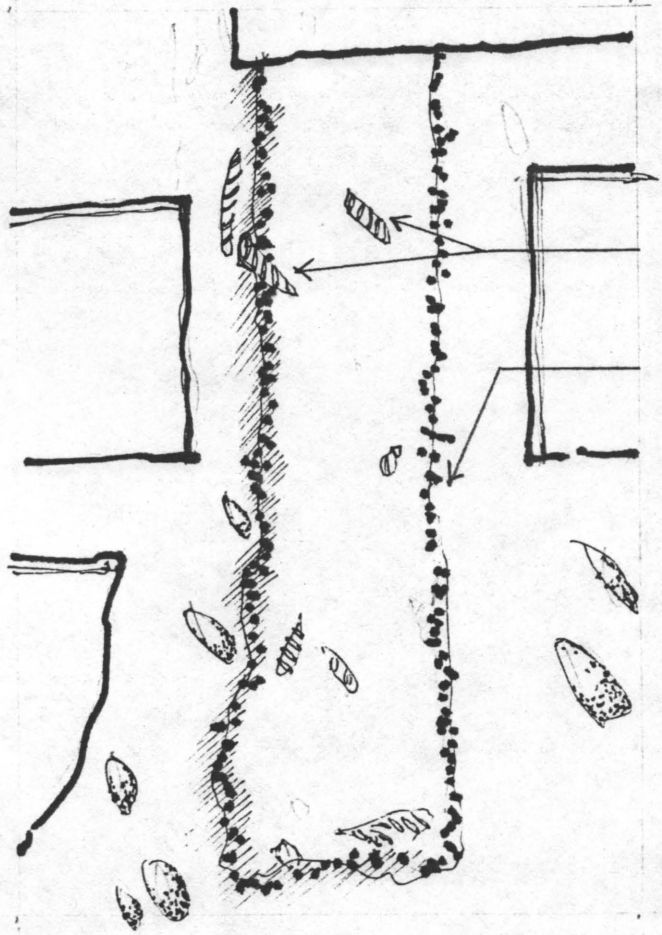
West wall RM 105,
detail of plaster
patch at partition
scar

26



The first layer of plaster on brick shows a vertical channel filled with a hard plaster patch. The patch does not extend below a height 5'-0" above the existing floor. Therefore it can be concluded that this feature represents a pre- floor reduction partition location.

25A

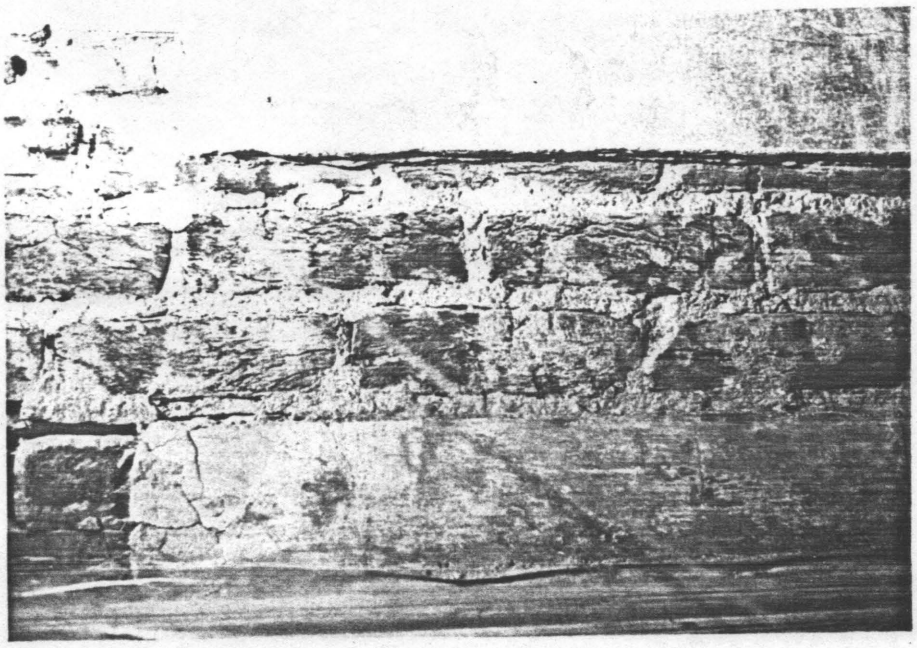


Fragments of red and black wallpaper, (see illustration 31A), applied after removal of partition.

Outline of plaster patch at partition scar.

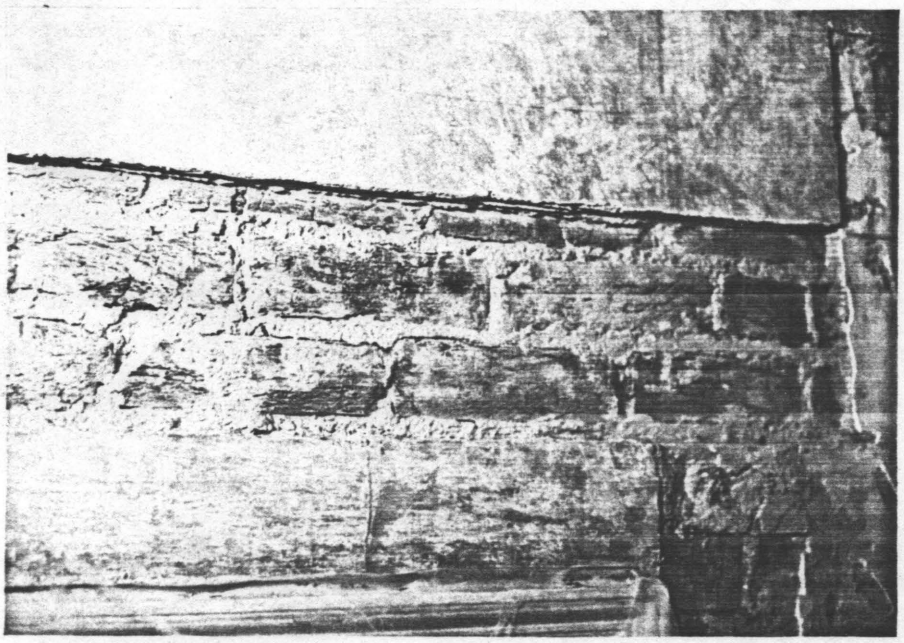
Note: the area of plaster bearing the partition scar and wallpaper fragments was left <u>in situ</u> where it intersects the 8" plaster band.

26A



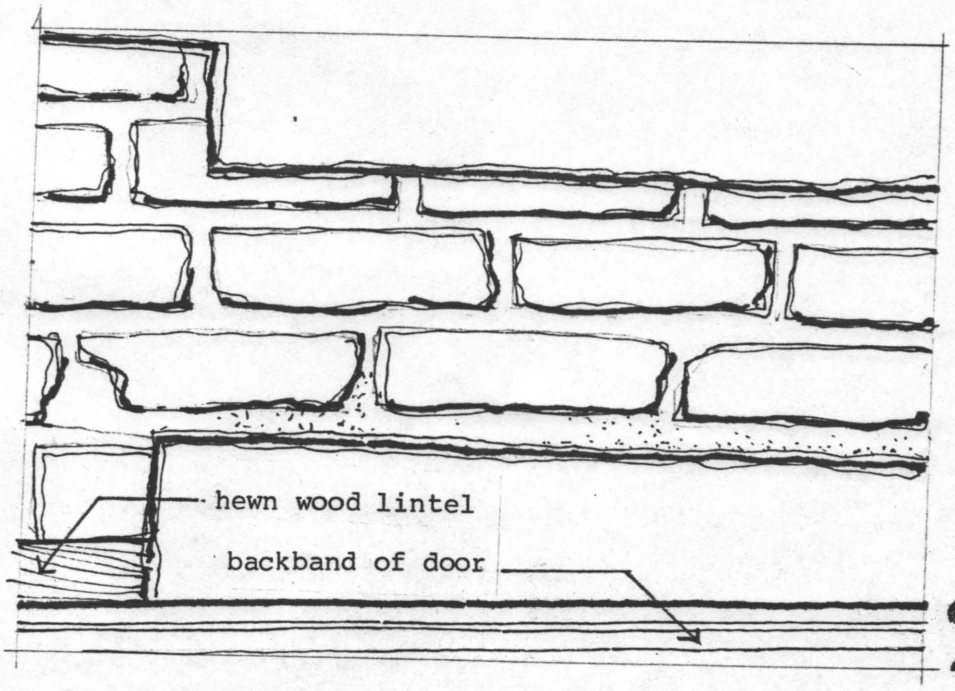
West wall RM 105,
north middle quarter
of door D1-105 head

27



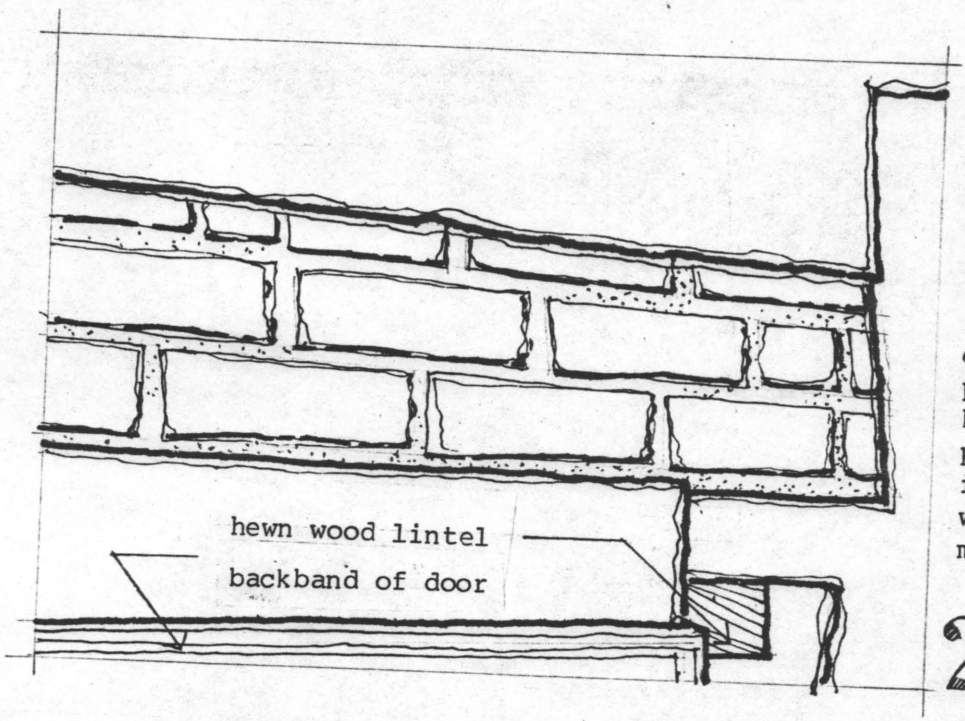
West wall RM 105,
north quarter of
door D1-105 head

28



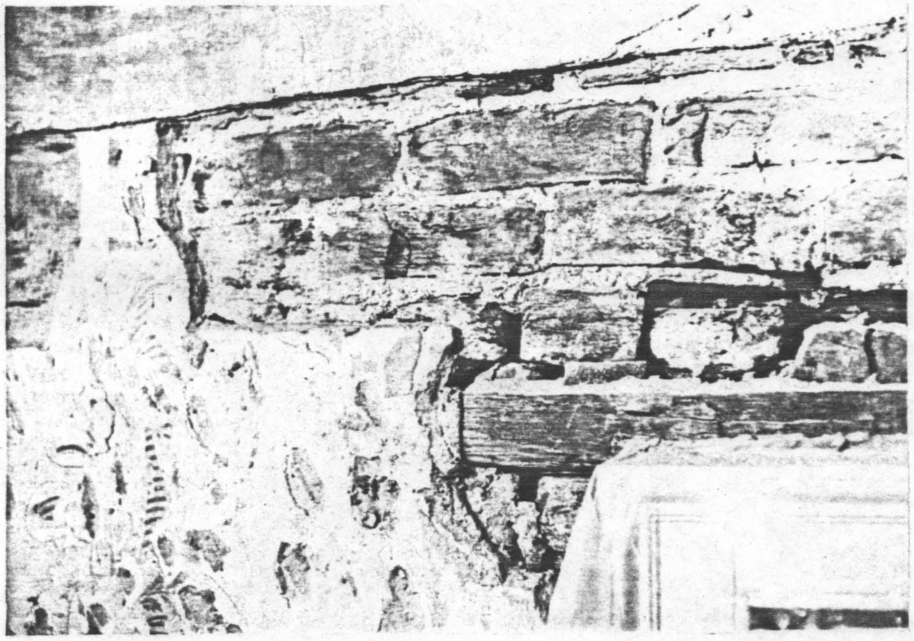
Note the absence of construction joints and the relatively uniform bonding pattern.

27A



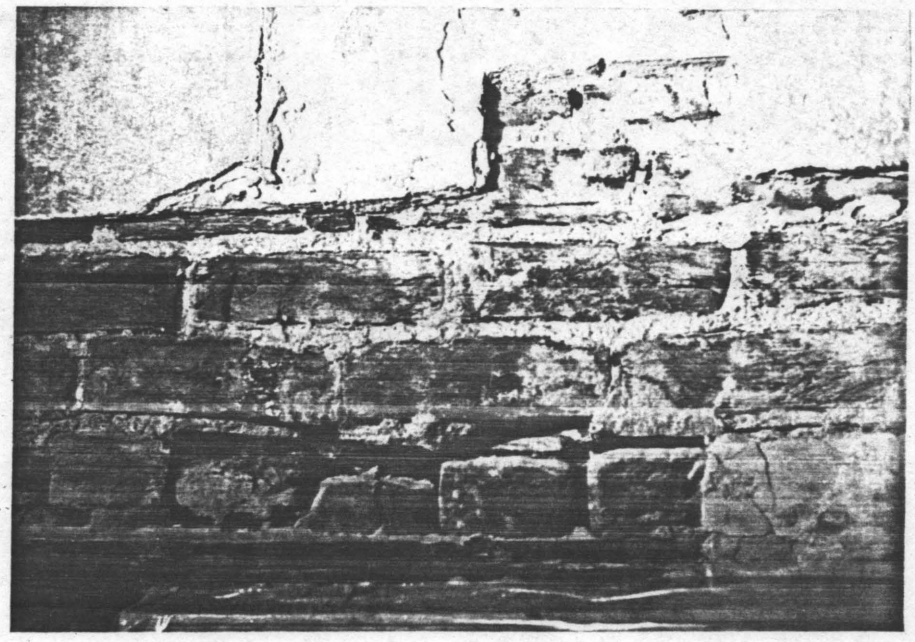
Note the absence of a construction joint in the exposed brick above the door jamb. If, as has been suggested, an opening relating to the previous floor level had been located at this point, the required additional vertical opening would have required masonry infill.

28A



West wall RM 105,
south quarter of
door D1-105 head

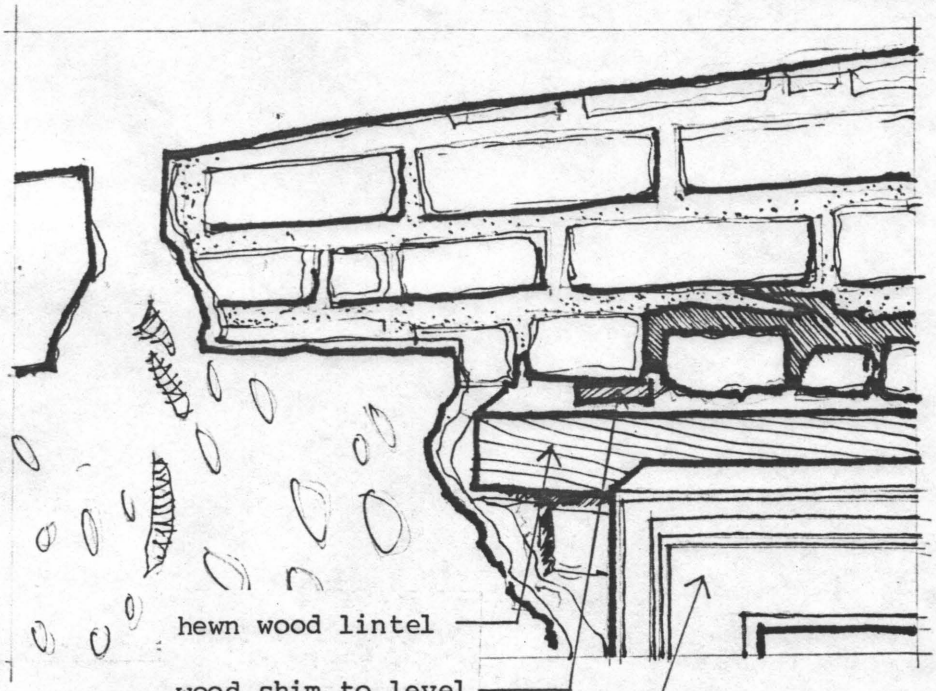
29



West wall RM 105,
south middle quarter
of door D1-105 head

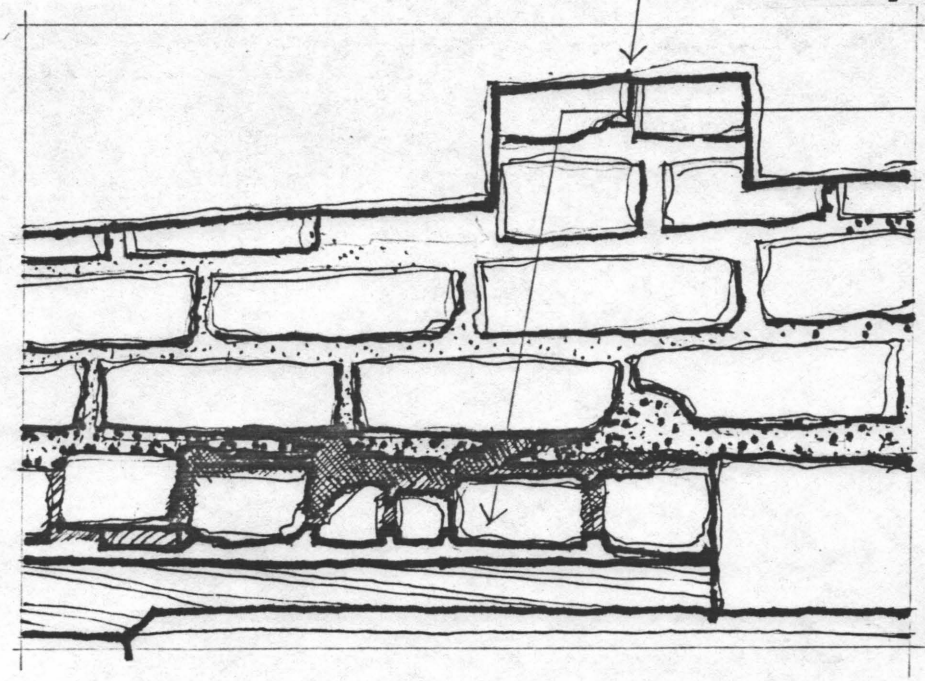
30

Note the absence of construction joints or changes in masonry rhythm apart from the line of dropped headers above door head.



29A

stacked head joint, but no evidence of masonry infill or patch.



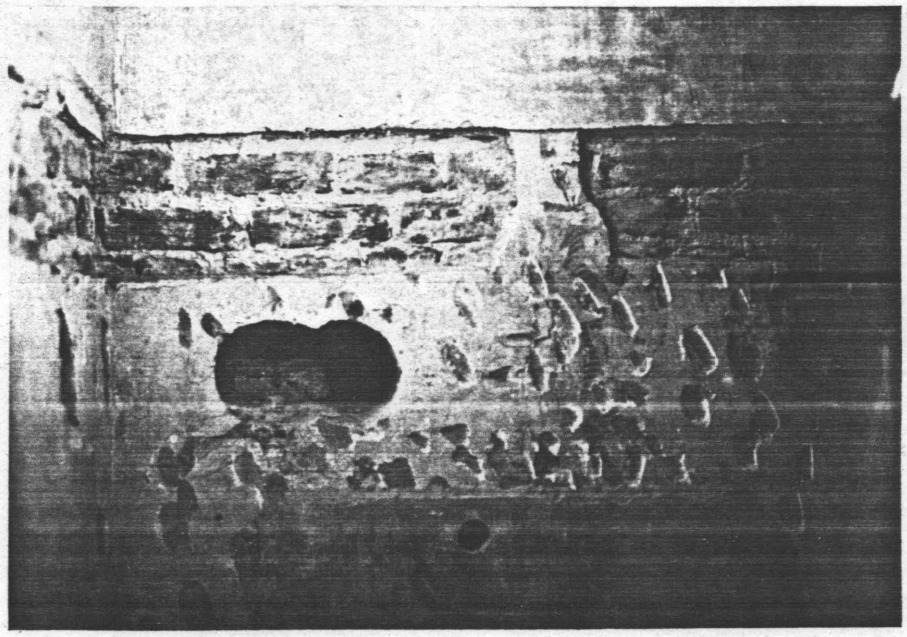
Line of dropped headers fallen from mortar joint above due to lack of support following creation of masonry opening. In addition, masonry at jambs (where visible), shows broken bricks and mortar patches, indicating that this door is not original to construction of the wall.

30A



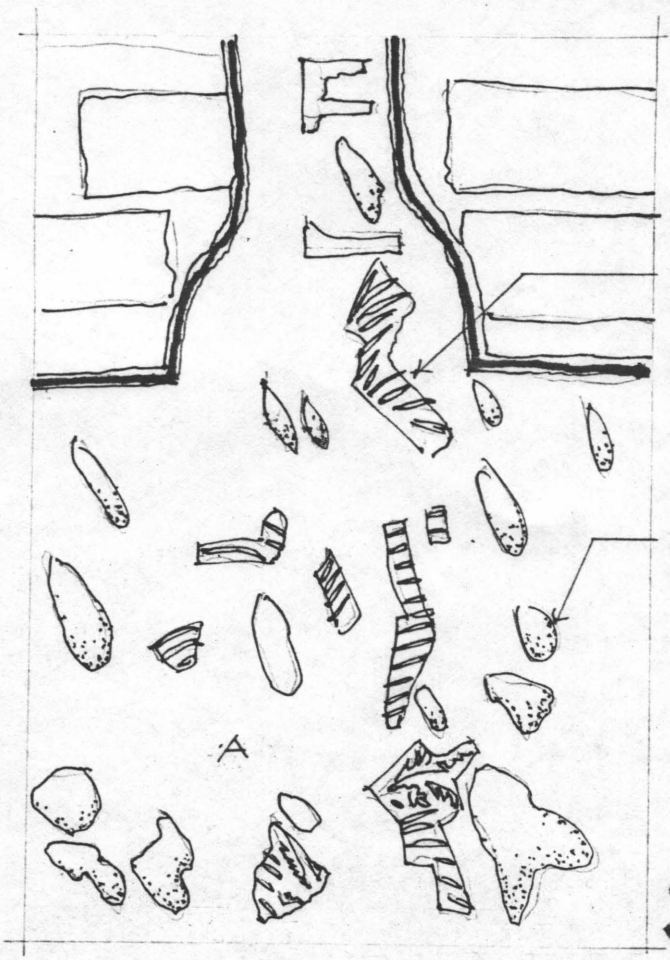
West wall RM 105,
detail of wallpaper
fragments

31



West wall RM 105,
between door D1-105
and cheek wall

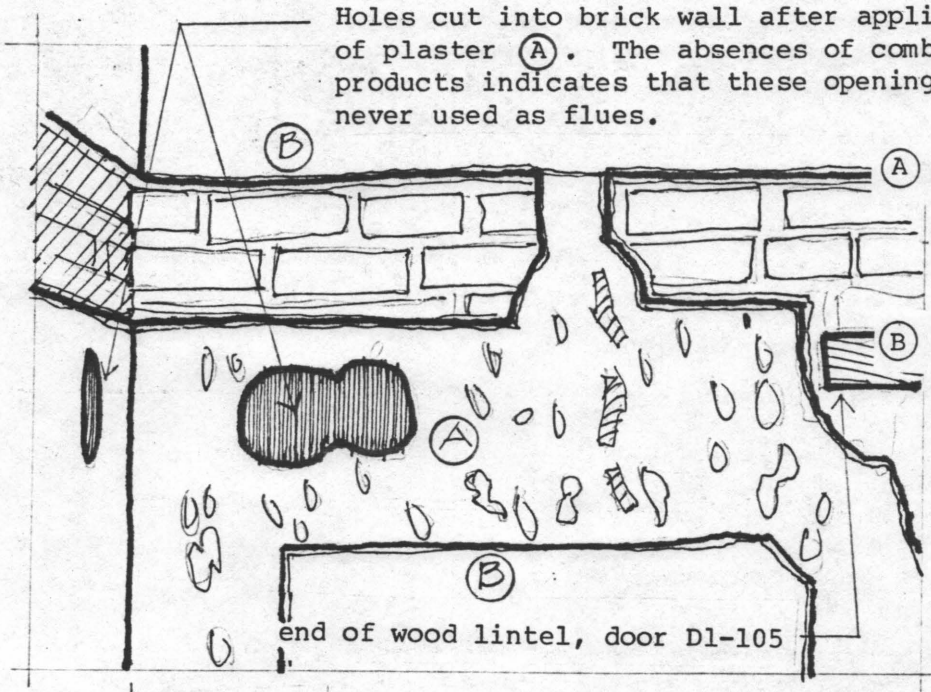
32



Red and black wallpaper fragments on first series of plaster on brick. Stylized floral pattern. This area of plaster was left <u>in situ</u>.

Hack marks where plaster was scored to receive subsequent coats.

31A



Holes cut into brick wall after application of plaster (A). The absences of combustion products indicates that these openings were never used as flues.

(A) First layer of plaster on brick. Was nowhere found to extend below a line 5'-0" above the existing floor.

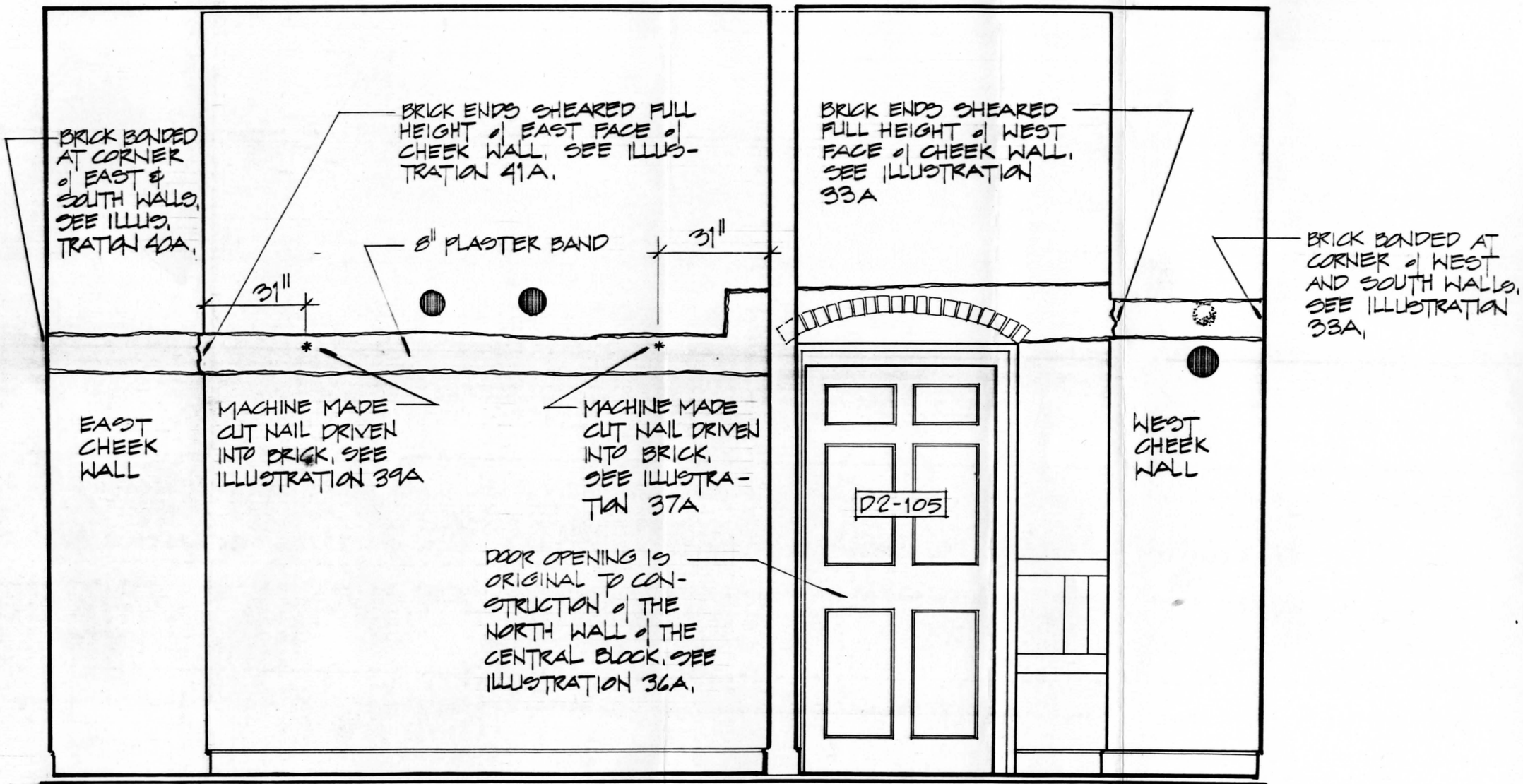
(B) First finish coat of plaster on brick below a line 5'-0" above the existing floor. Above that line plaster (B) is on top of plaster (A).

end of wood lintel, door D1-105

32A

south cheek wall RM 105 / west wall RM 105

Masonry features -- note the absence of constructed joints or infilled openings.



SOUTH WALL ELEVATION

SCALE: 1/2" = 1'-0"

0 1 2 3 4 8 FEET

RED & BLACK WALLPAPER SEE ILLUSTRATION 31A.

PLASTER PATCH AT PRE-FLOOR REDUCTION PARTITION LOCATION. SEE ILLUSTRATION 25A.

WINDOW NOT ORIGINAL TO CONSTRUCTION OF WALL. SEE ILLUSTRATION 22A.

CONSTRUCTION JOINTS. SEE ILLUSTRATIONS 17A & 18A

CORNICE SHADOW

NECK MOULDING SHADOW

8" PLASTER BAND

SHEARED END OF CHEEK WALL. SEE ILLUSTRATION 33A.

NORTH WALL OF CENTRAL BLOCK

D1-105

W1-105

DOOR OPENING NOT ORIGINAL TO CONSTRUCTION OF WALL. SEE ILLUSTRATIONS 27-30A

POST FLOOR REDUCTION PARTITION LOCATION. SEE ILLUSTRATIONS 19A & 20A

FLUE OPENING SEE ILLUSTRATION 15A

PLASTER PATCH AT PRE-FLOOR REDUCTION CHAIR RAIL. SEE ILLUSTRATION 11A

PRE-FLOOR REDUCTION JOIST POCKETS. SEE ILLUSTRATION 12A.

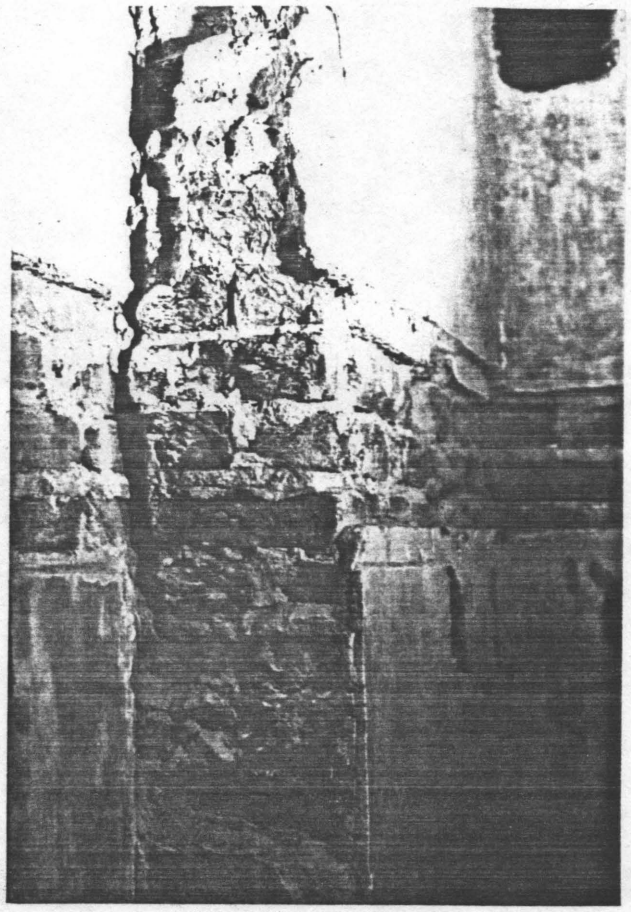
POST FLOOR REDUCTION PARTITION LOCATION. SEE ILLUSTRATIONS 5A & 6A.

MITERED END OF CHAIR RAIL. SEE ILLUSTRATIONS 7A & 8A.

WEST WALL ELEVATION RM 105

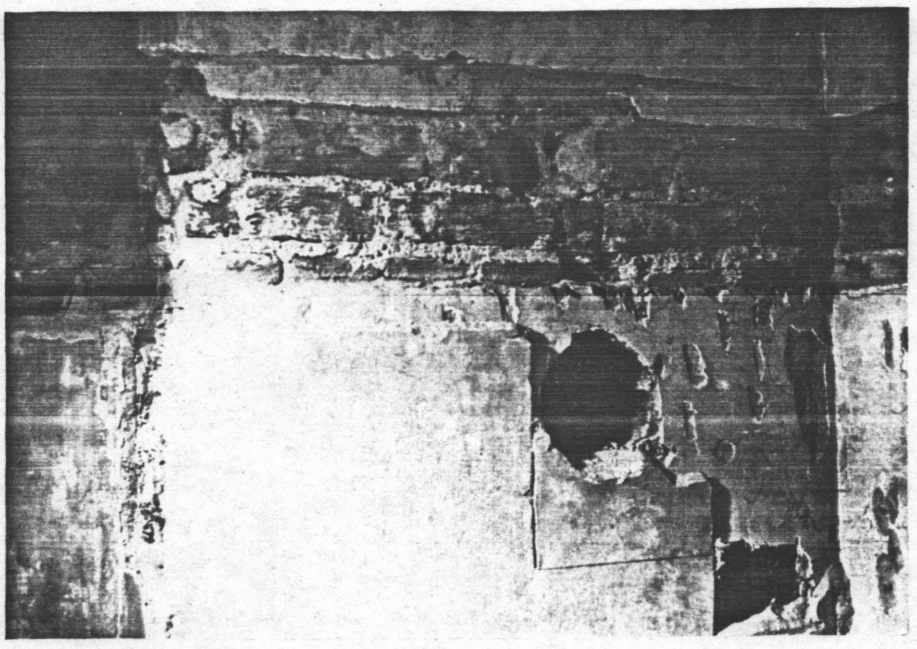
SCALE: 1/2" = 1'-0"

0 1 2 3 4 8 FEET



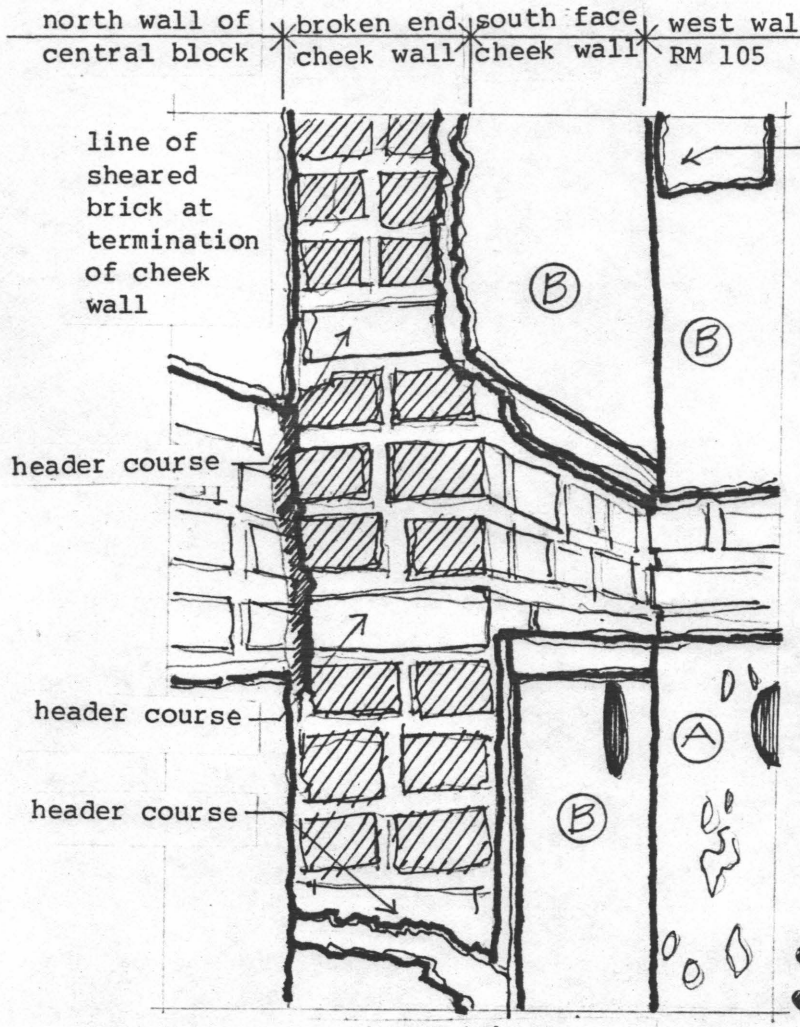
Rm 105, southwest corner

33



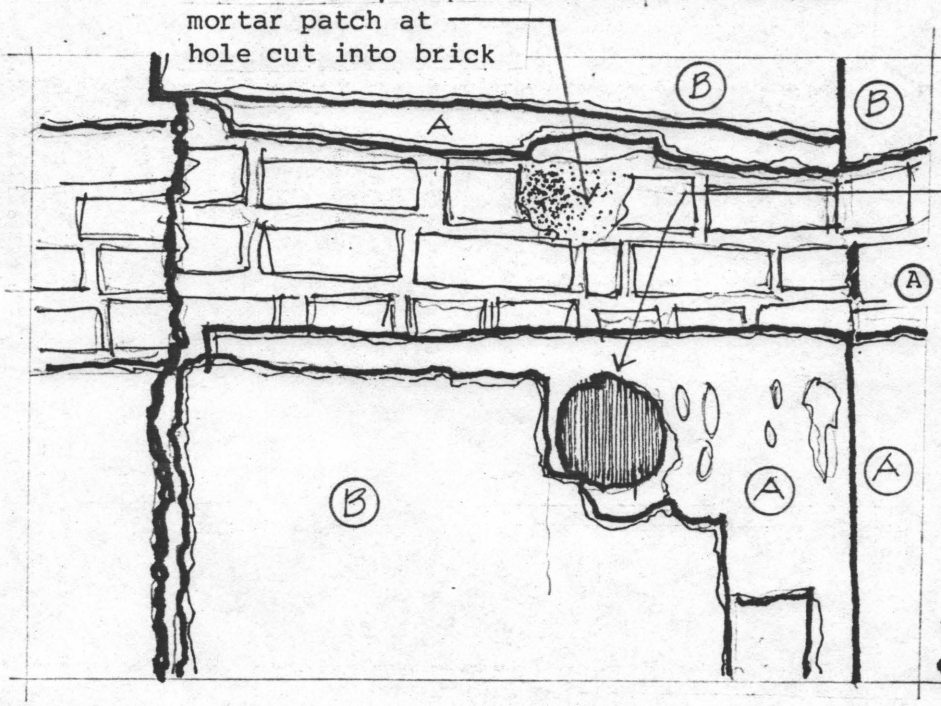
RM 105, south cheek wall

34



The cheek wall represents the remainder of the terminal wall of the north wing. Evidence of any openings original to construction of the wall disappeared when the wall was breached. It seems probable that the abutting wall of the central block was constructed before the wall was breached. The principle physical evidence supporting this conclusion is the fact that the mortar joints in the exposed masonry of the central block wall are not struck, as this would be impossible were the wall built flush against an existing surface.

33A



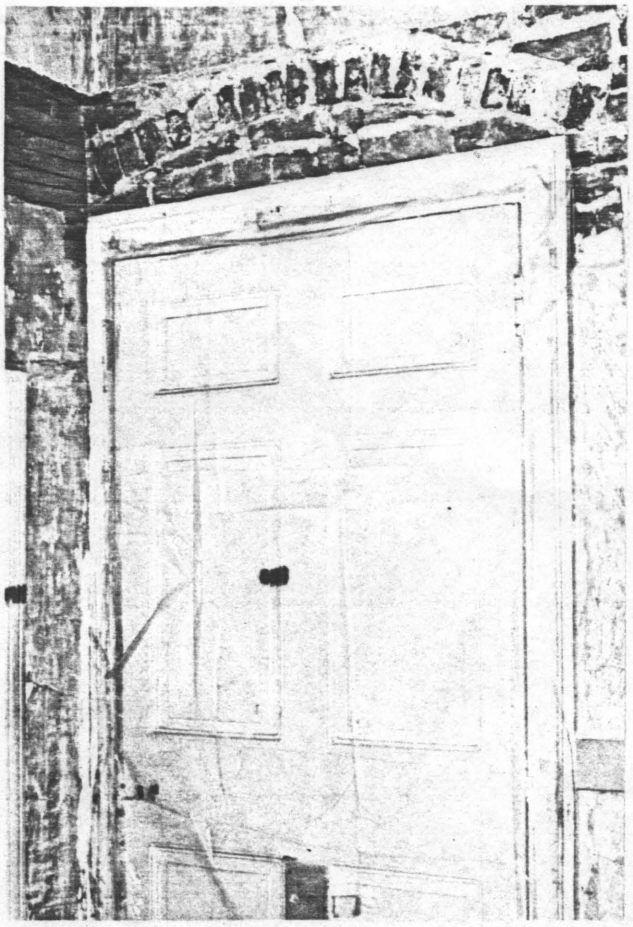
The brick at the intersection of the west and south walls is bonded, showing a half lap at alternate courses

hole cut into brick

(A) First series of plaster on brick is continuous at the corner formed by the south and west walls. This plaster bears traces of the red and black wallpaper seen in illustration 31A.

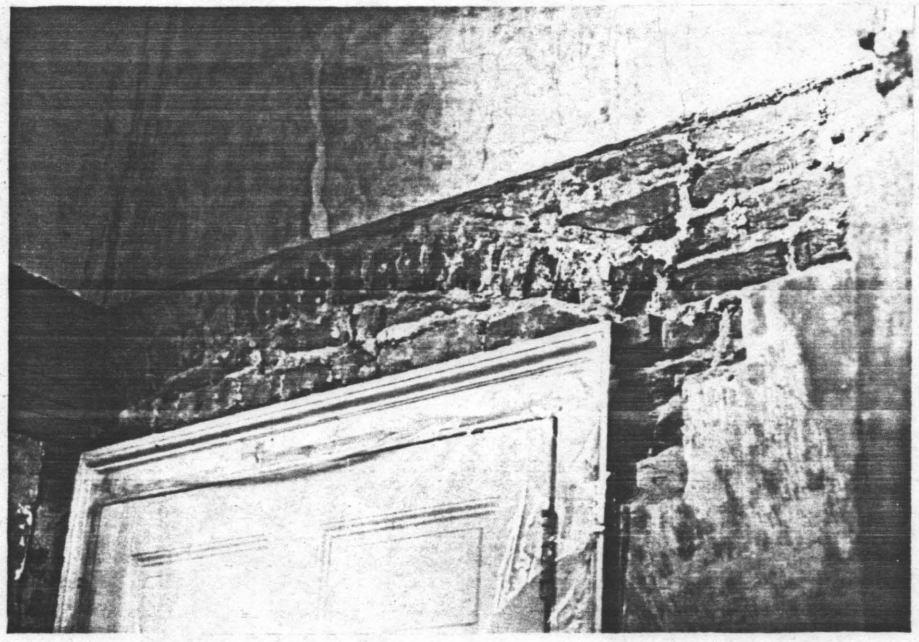
34A

(B) The most recent series of plaster on the west wall and south cheek wall continues onto the central block wall, where it is the only plaster series.



South wall Rm 105,
(north wall of central
block), door D2-105

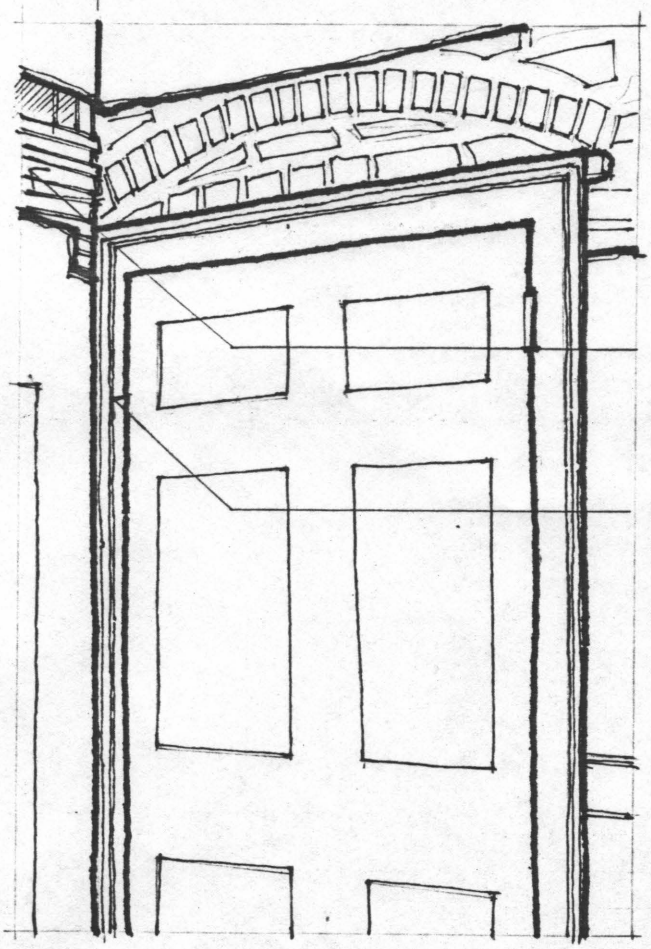
35



South wall RM 105,
north wall of central
block

36

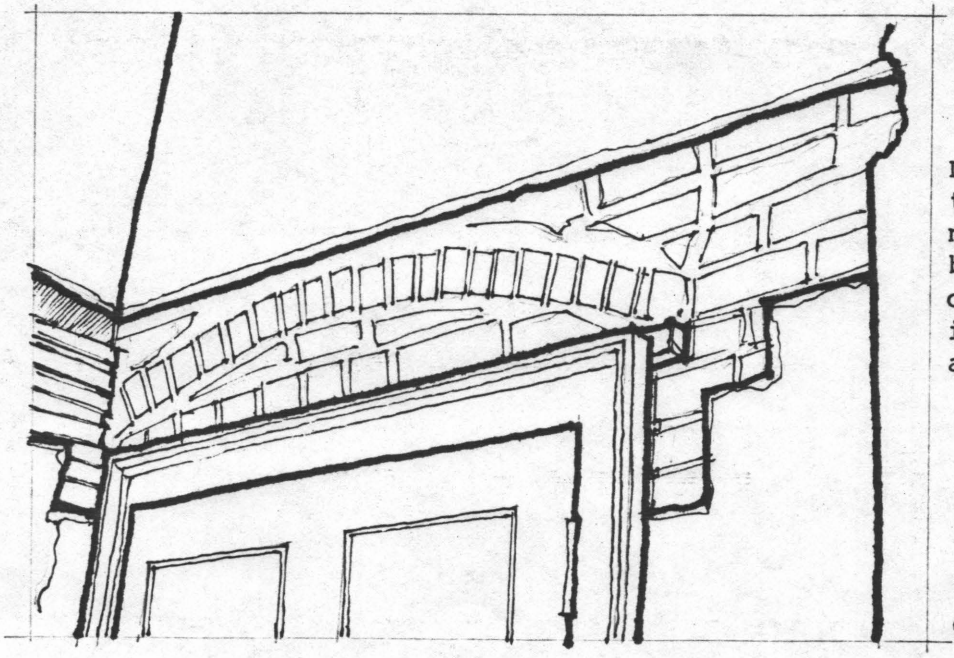
east partition wall RM 105 / south wall RM 105



single series of plaster on split wood lath at partition. Corners cut full height and patched over expanded metal lath.

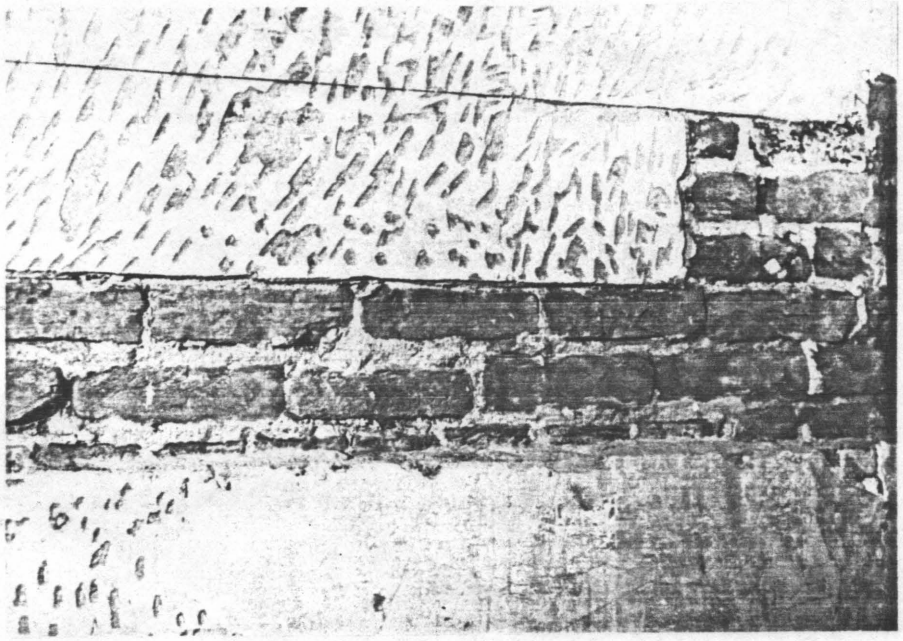
back band of door cut down on lock side

35A



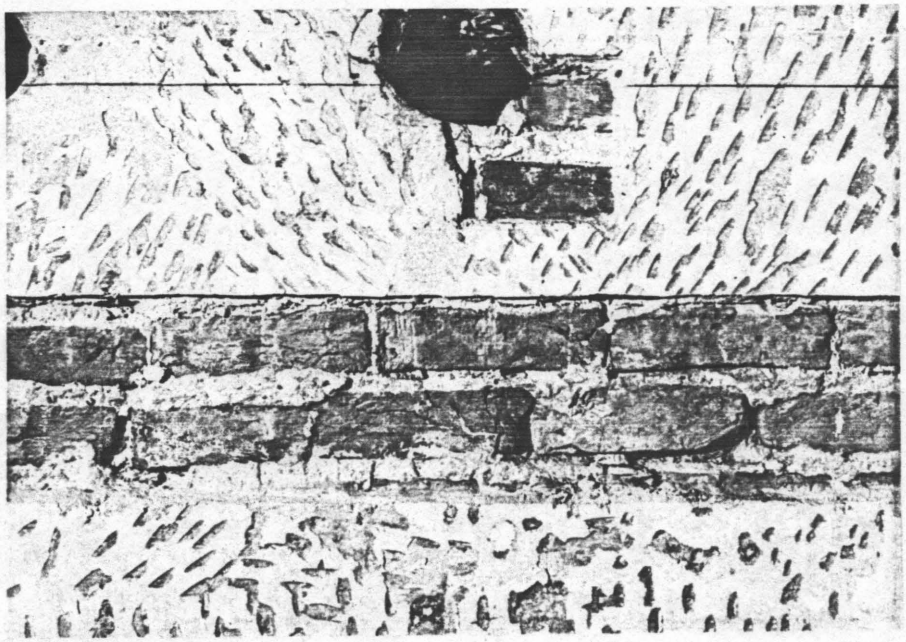
Door opening is original to construction of the north wall of the central block, as evidenced by constructed brick jambs, integral masonry relieving arch and wood lintel.

36A



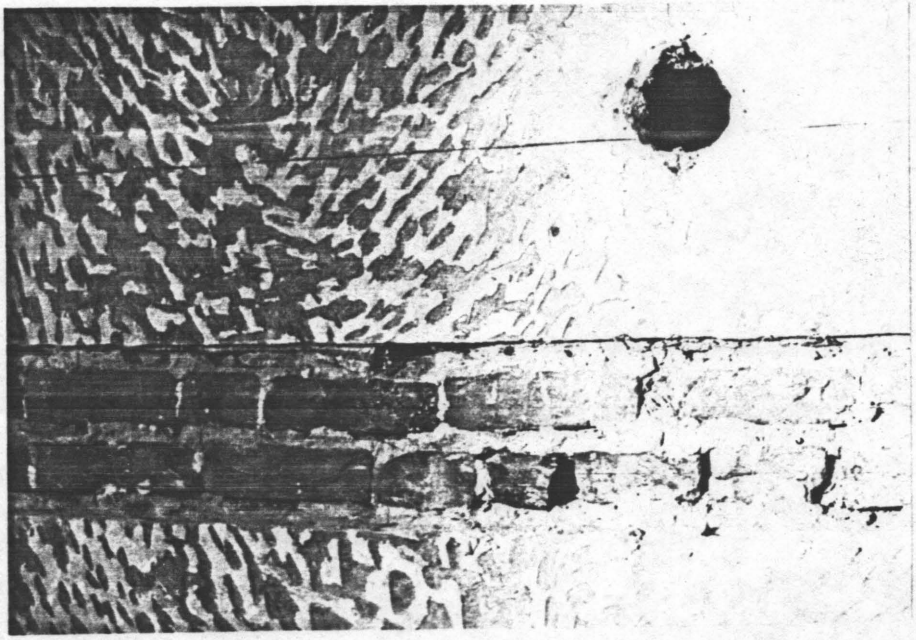
South wall RM 107, (north wall of central block), western third of plaster band

37



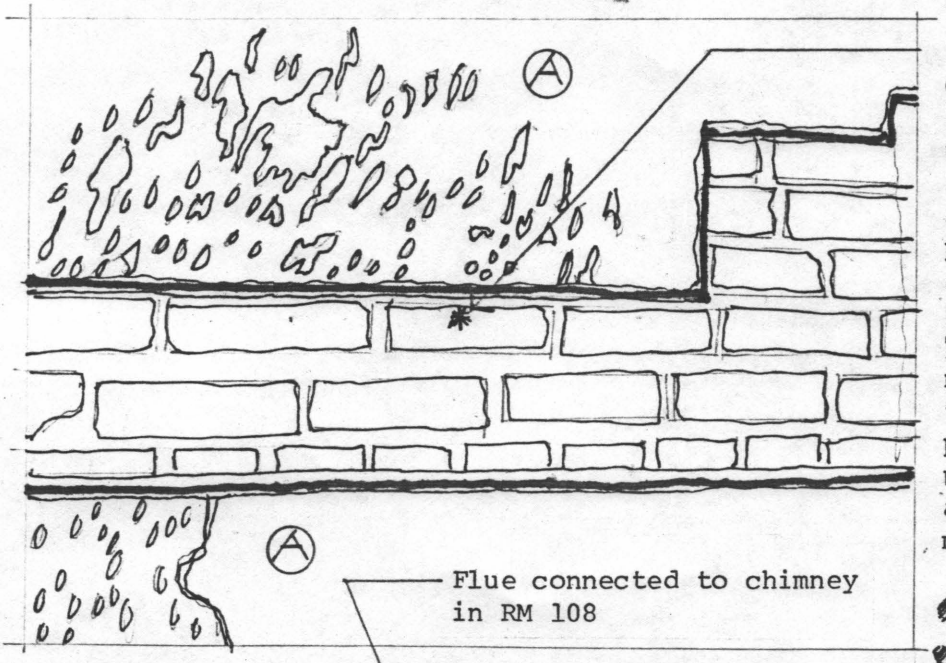
South wall RM 107, central third of plaster band

38



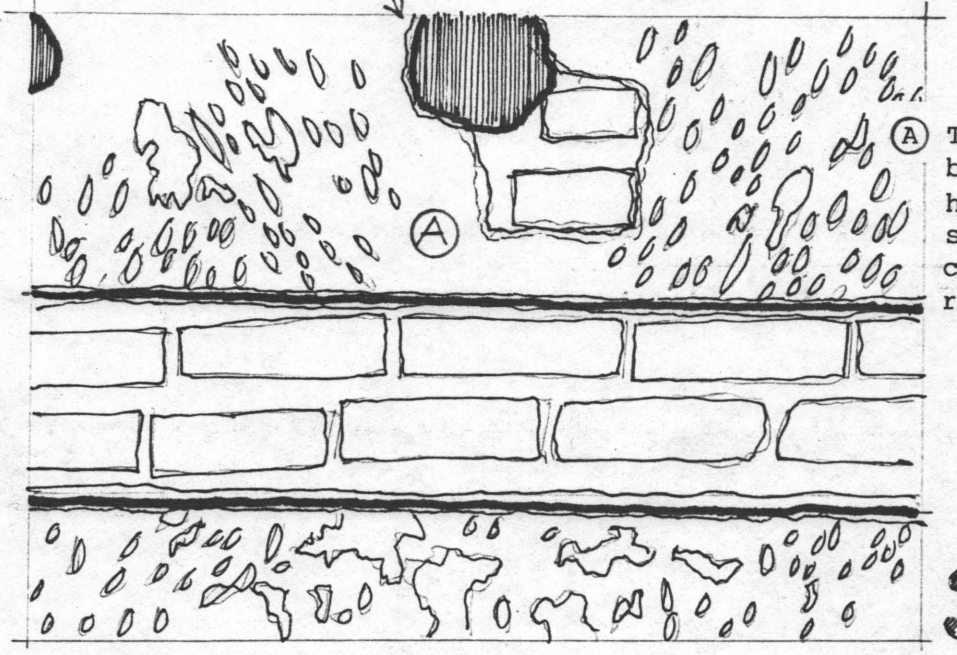
South wall RM 107, eastern third of plaster band

39



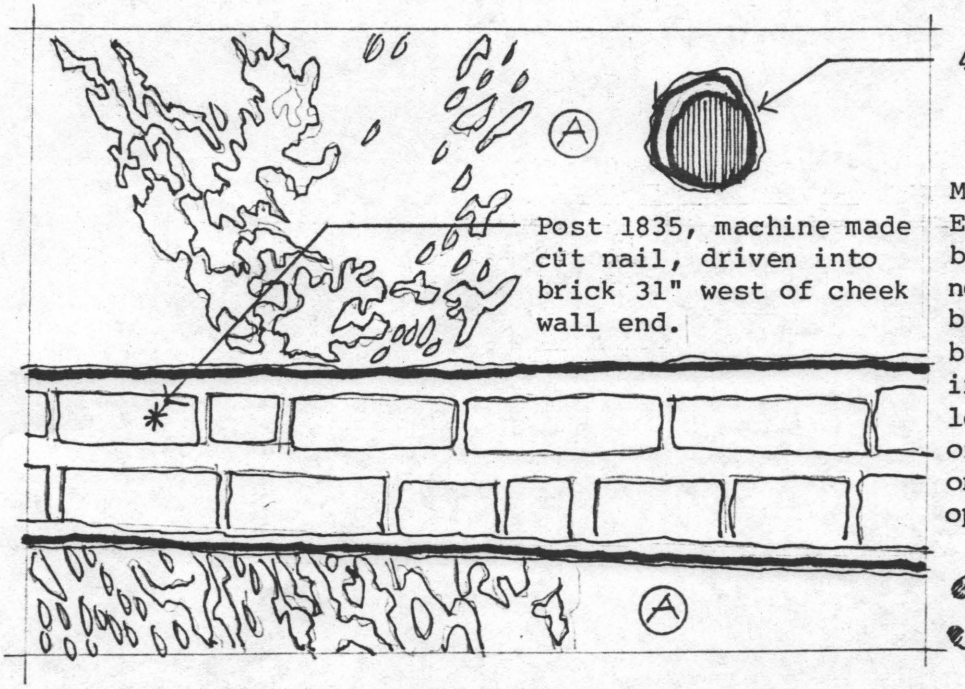
Post 1835, machine made cut nail, driven into brick 31" east of the west partition wall. Plaster A was applied after the nail was in place as evidenced by adhesion of plaster to the nail. See also 39A. The purpose of these nails is unknown, but the regularity of their placement suggest the possibility of a mechanically applied finish material such as paneling.

37A



Two series of plaster on brick. First finish coat heavily scored to receive subsequent single white coat, which is mo st recent finish.

38A

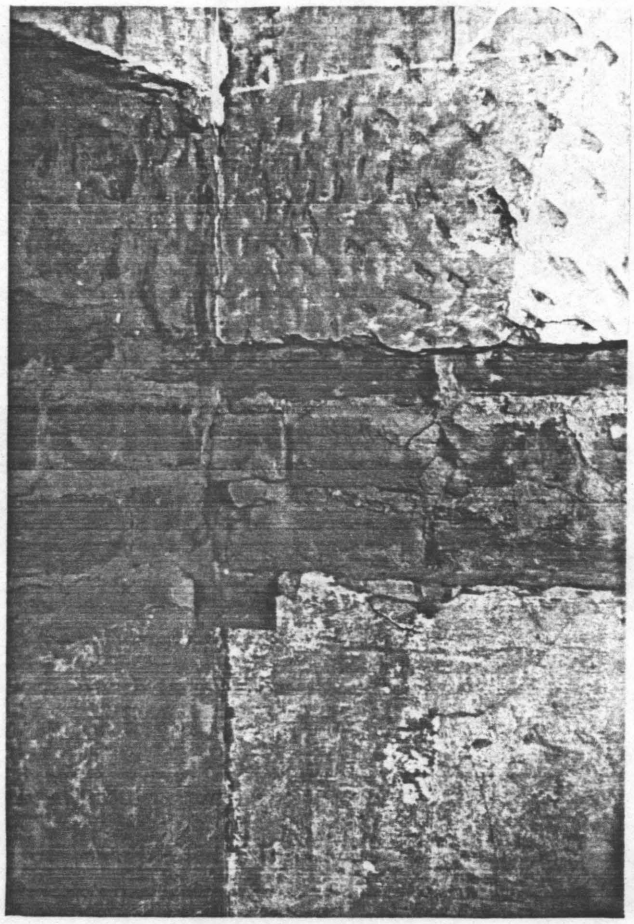


4" diameter hole

Post 1835, machine made cut nail, driven into brick 31" west of cheek wall end.

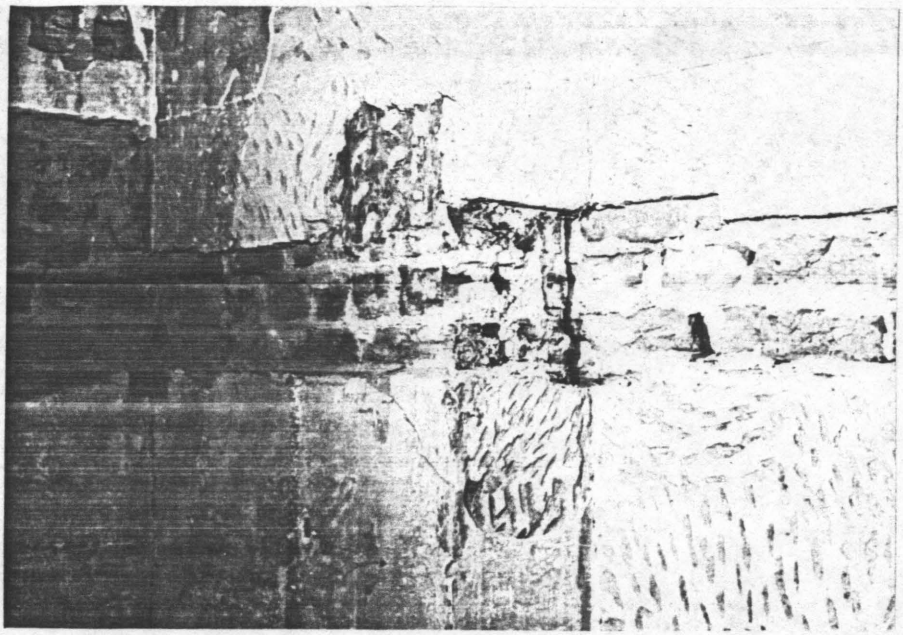
Masonry features -- Exposed wall is the bearing wall for the north end of the central block. Extensive use of broken bricks. Bed joints irregular and poorly leveled. Note the absence of construction joints or infilled masonry openings.

39A



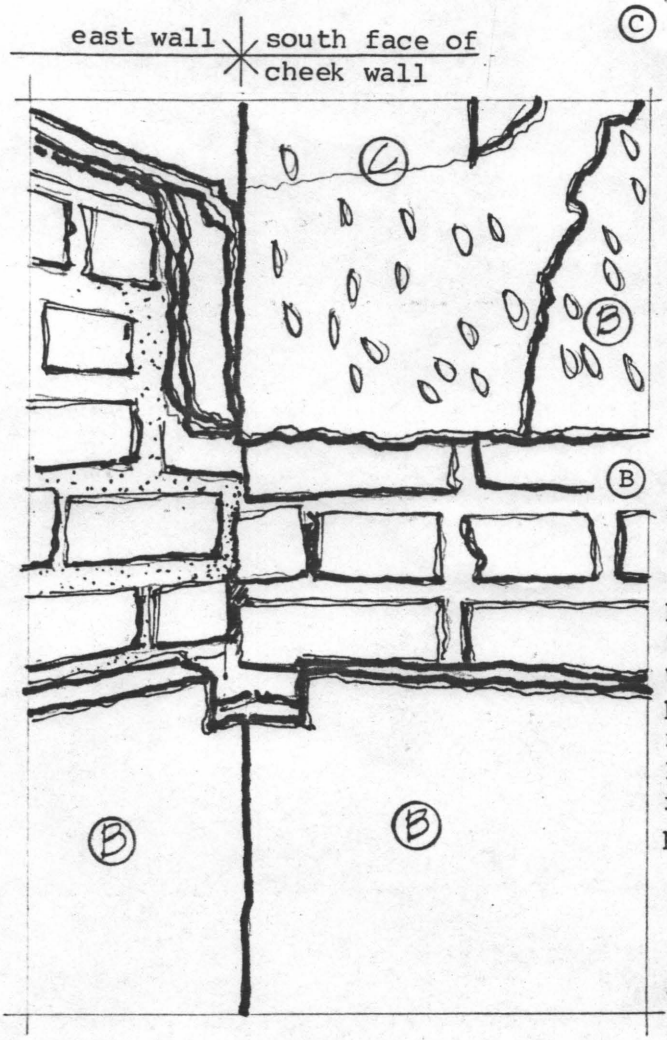
RM 107, masonry detail at southeast corner

40



RM 107, southeast corner

41



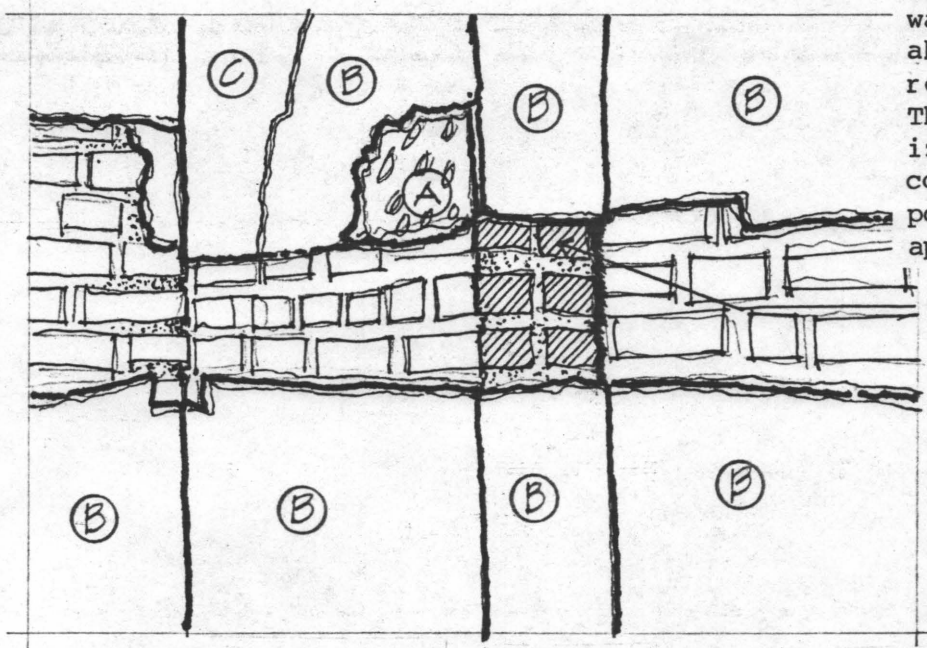
Ⓒ A single layer of white coat generally covers plaster series Ⓑ. At area Ⓒ the white coat itself has been patched over an applied liquid bonding agent, as evidenced by the fact that the bonding agent laps over the edge adjacent to the patch.

The south and east walls show bonded brick construction at the corner, characterized by half lapped bricks. This indicates the same period of construction for both walls.

Ⓑ First series of plaster on brick on the face of the central block wall, where it is applied over the machine made, cut nails shown in illustrations 37A and 39A. This plaster appears to be continuous around the corner to the east face of the cheek wall, where it covers a thin layer of plaster which appears to be an earlier finish coat over the sheared brick ends. It then turns the corner onto the south face of the cheek wall where it covers plaster Ⓐ.

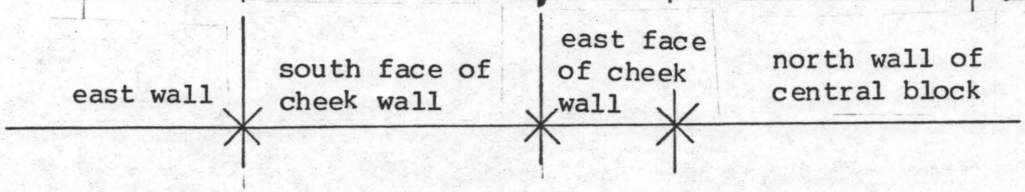
40A

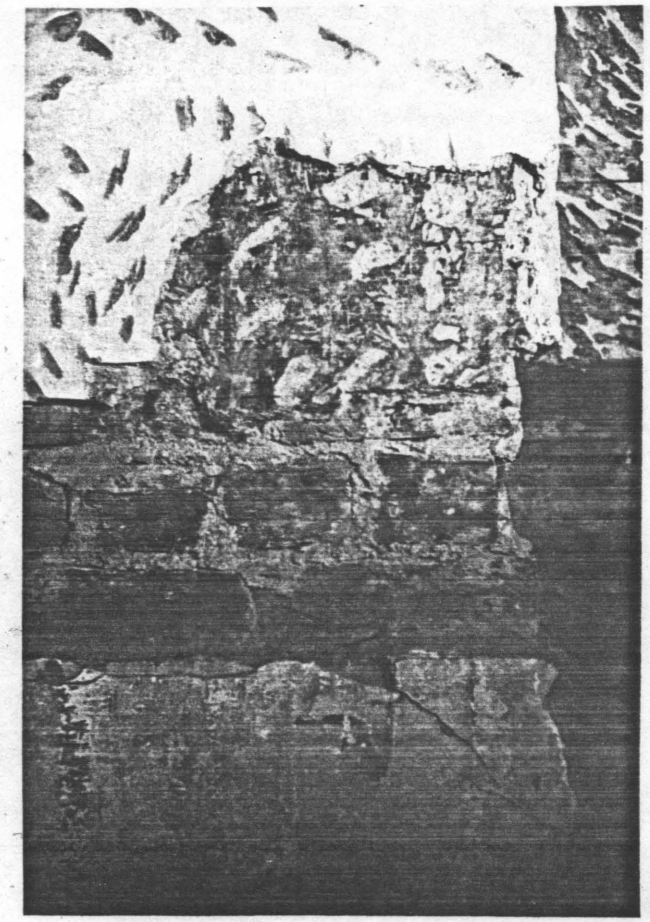
Ⓐ First series of plaster on brick, continuous around corner from south cheek wall to east wall. Appears elsewhere on east wall of RM 107 and RM 106, above the pre- floor reduction chair rail height. This plaster is characterized by a dark grey discoloration to its surface, possibly a reaction of applied wallpaper sizing.



Sheared bricks at the east face of the cheek wall mark the line at which the original terminal wall of the north wing was breached to make the connection to the central block.

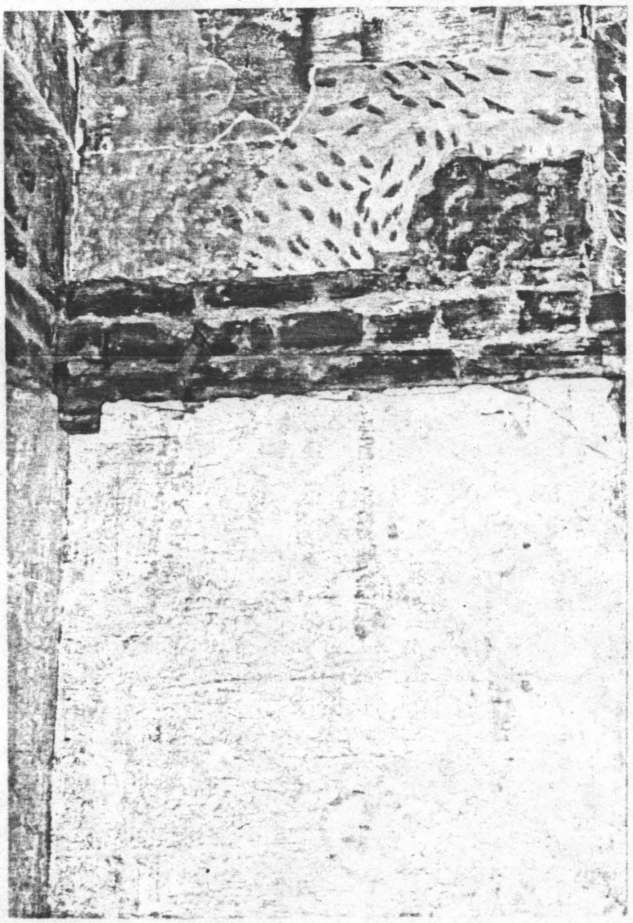
41A





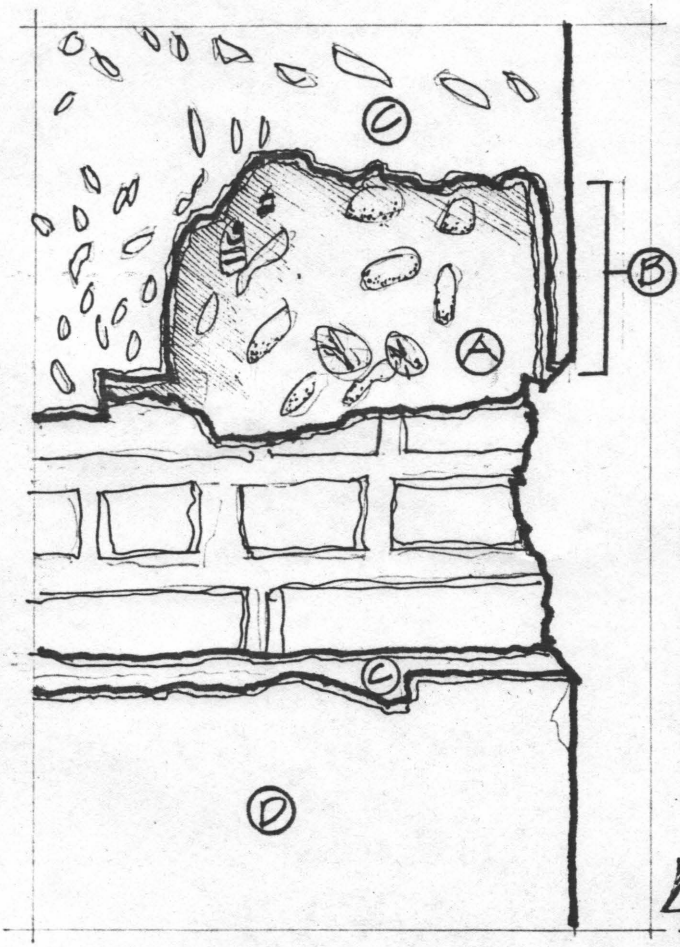
RM 107, western edge of south cheek wall

42



RM 107, south cheek wall

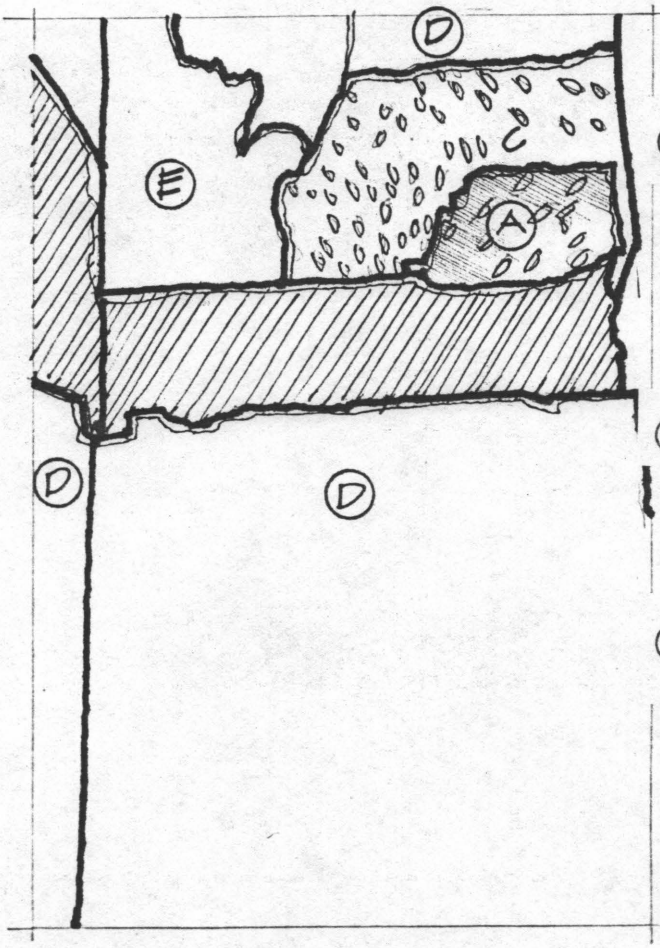
43



(A) First series of plaster on brick. See illustration 41A, plaster (A). This plaster shows fragments of the red and black wallpaper illustrated in 31A. This plaster appears also on the east wall of RM 107 and RM 106 just above the pre- floor reduction chair rail. On the cheek wall, the plaster is sheared off along the line of broken bricks. Therefore it was apparently the extant interior finish at the time the wall was breached. This series is scored to receive subsequent finish coats.

(B) A thin plaster edge is visible underneath plaster (C) on the east face of the cheek wall where it abuts the sheared edge of plaster (A). Where visible, this plaster appears to have a smooth hard finish. Therefore it may represent the first treatment after the north wall was breached.

42A

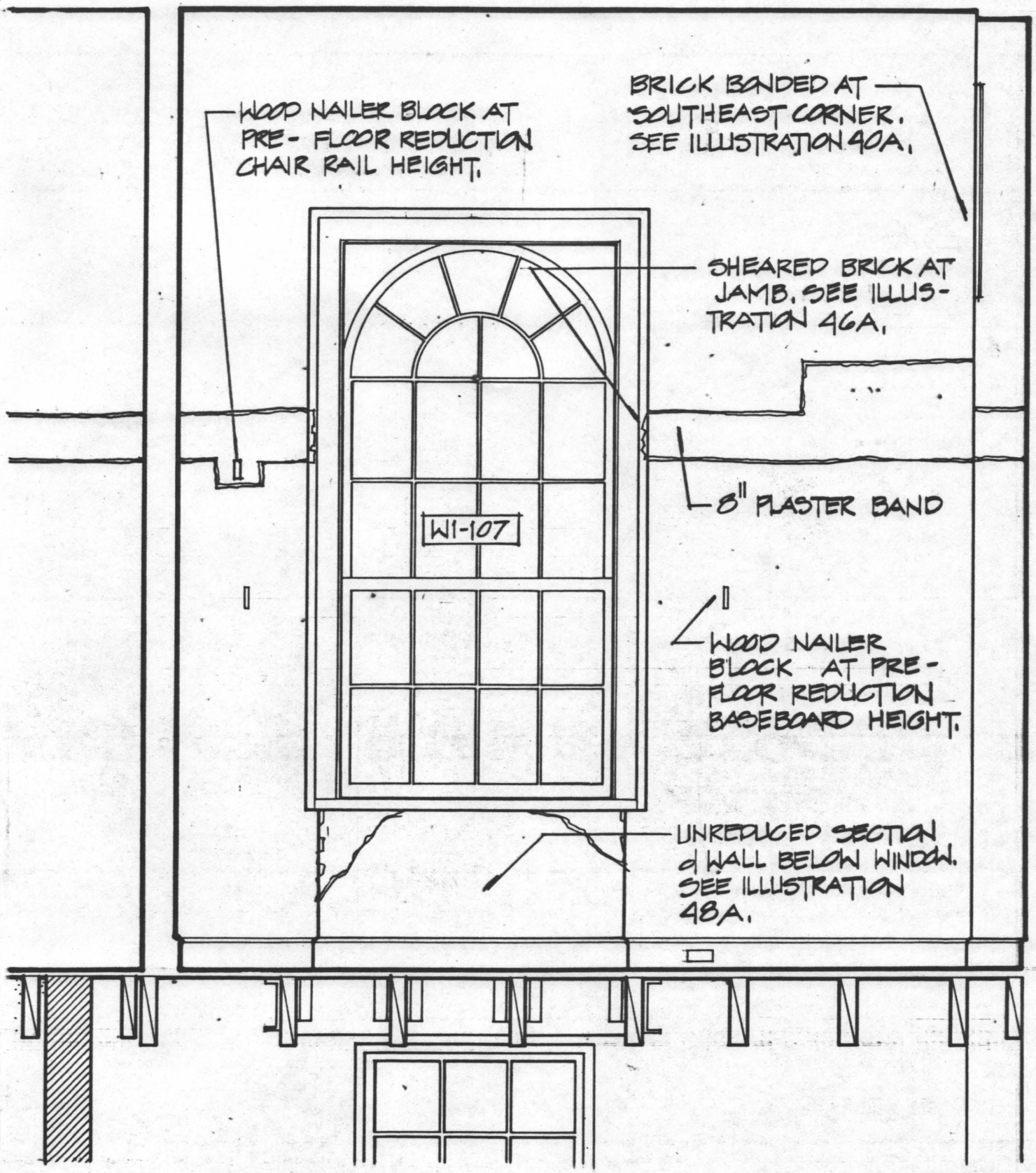


(C) This series of plaster represents a general finish coat on the east wall of RM 107 and the south and east faces of the cheek wall, as evidenced by continuity at corners. Also, it appears to make the transition to the face of the central block wall. See illustration 41A.

(D) A single layer white finish coat is the most recent plaster surface. It was applied over a metal corner bead at the corner of the cheek wall, suggesting a 20th century repair.

(E) Patch to white coat over applied liquid bonding agent.

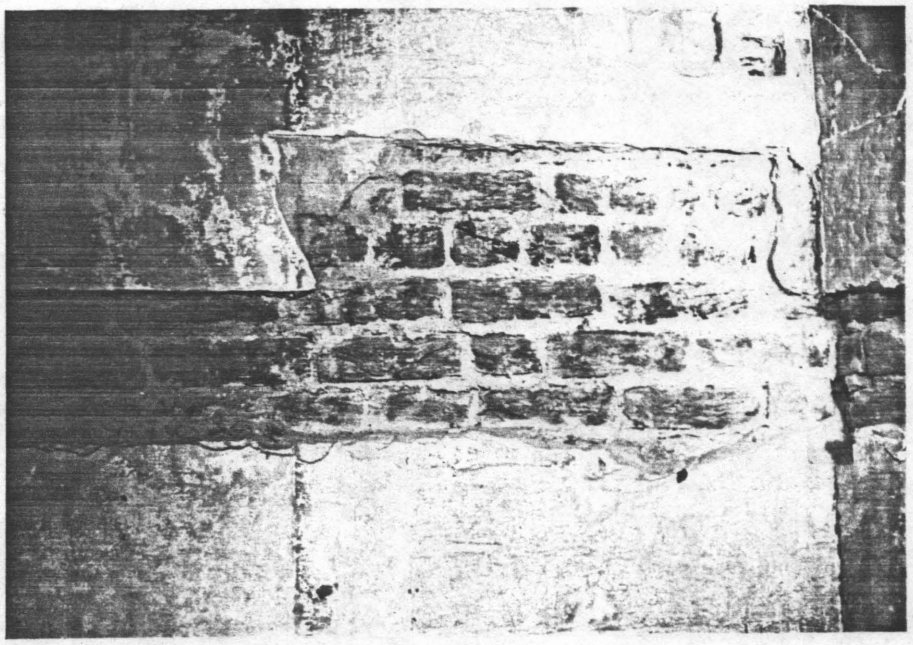
43A



EAST WALL RM 107 ELEVATION

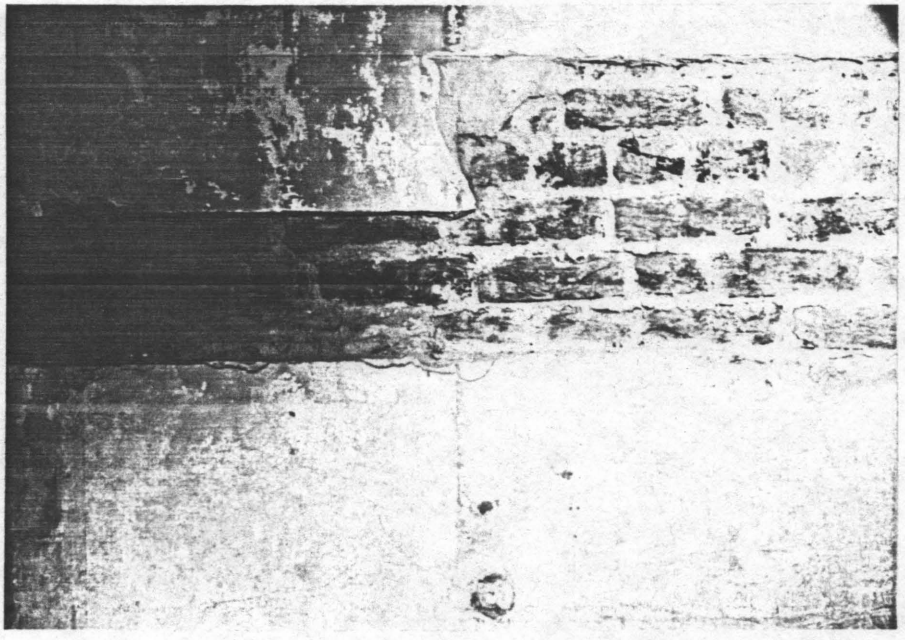
SCALE: 1/2" = 1'-0"

0 1 2 3 4 6 FEET



East wall RM 107, north of cheek wall

44

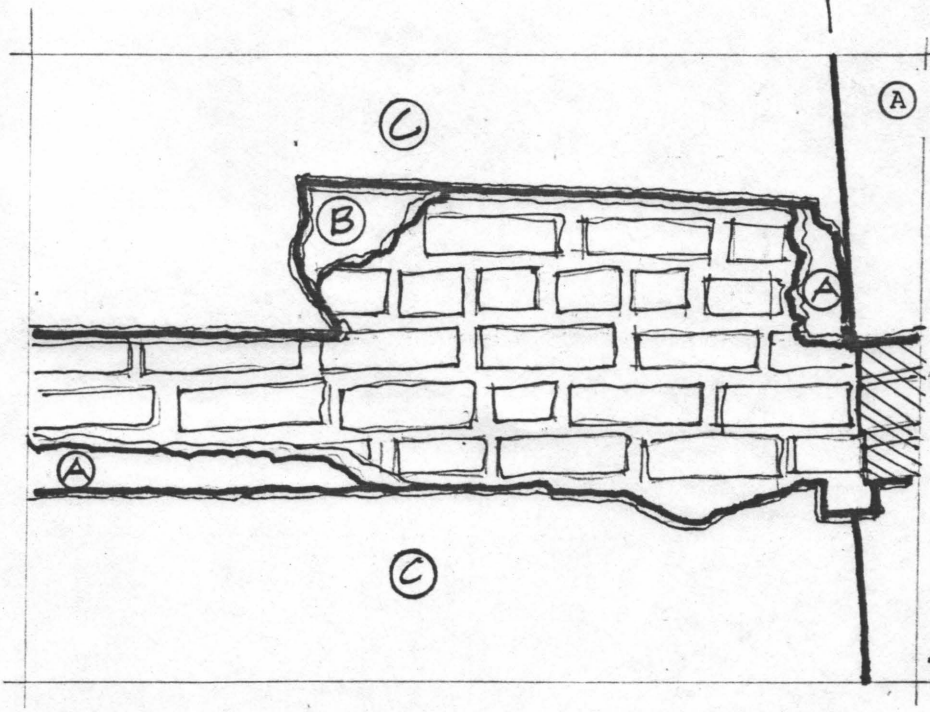


East wall RM 107, south of window W1-107

45

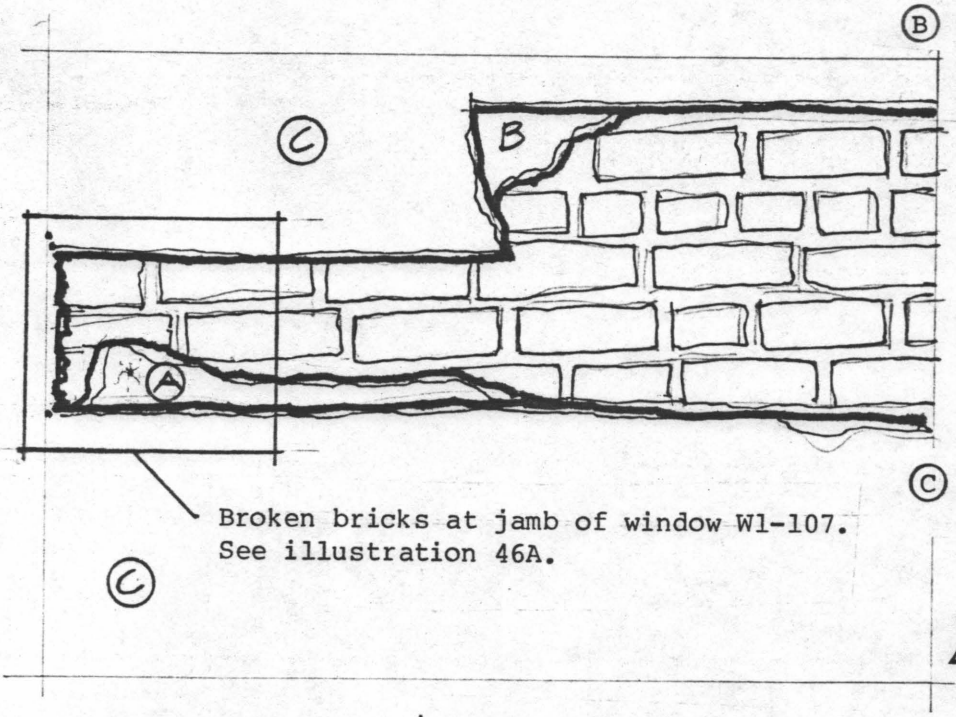
east wall
RM 107

south wall
RM 107



(A) First series of plaster on brick. Dark grey surface discoloration. Continuous at southeast corner. Appears elsewhere above pre- floor reduction chair rail height on east wall of RM 106 and RM 107. One post floor reduction scored coat is the general finish above this series.

44A



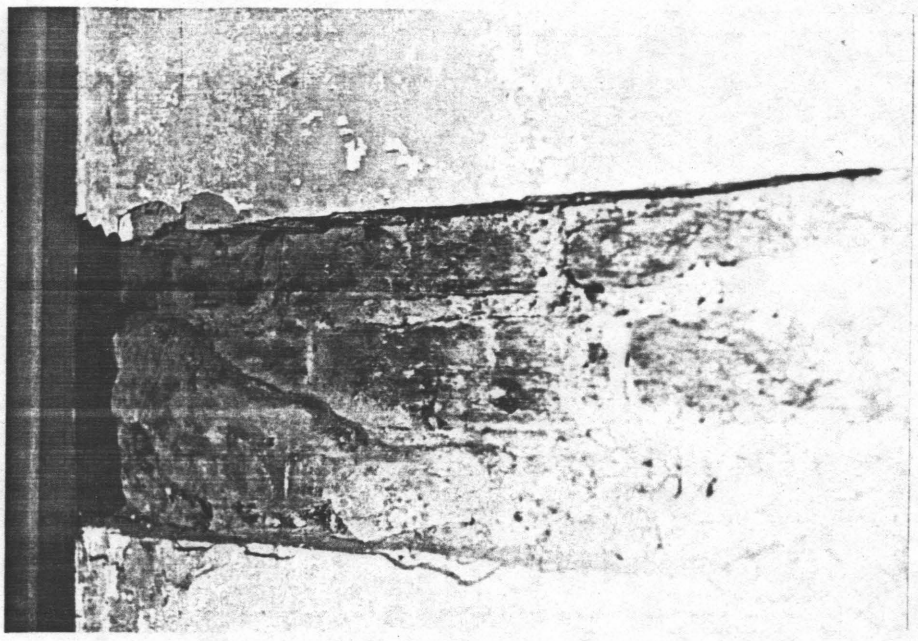
(B) Hard grey plaster patch applied against brick. Extent unknown.

(C) White coat. Most recent finish throughout wing.

Broken bricks at jamb of window W1-107. See illustration 46A.

45A

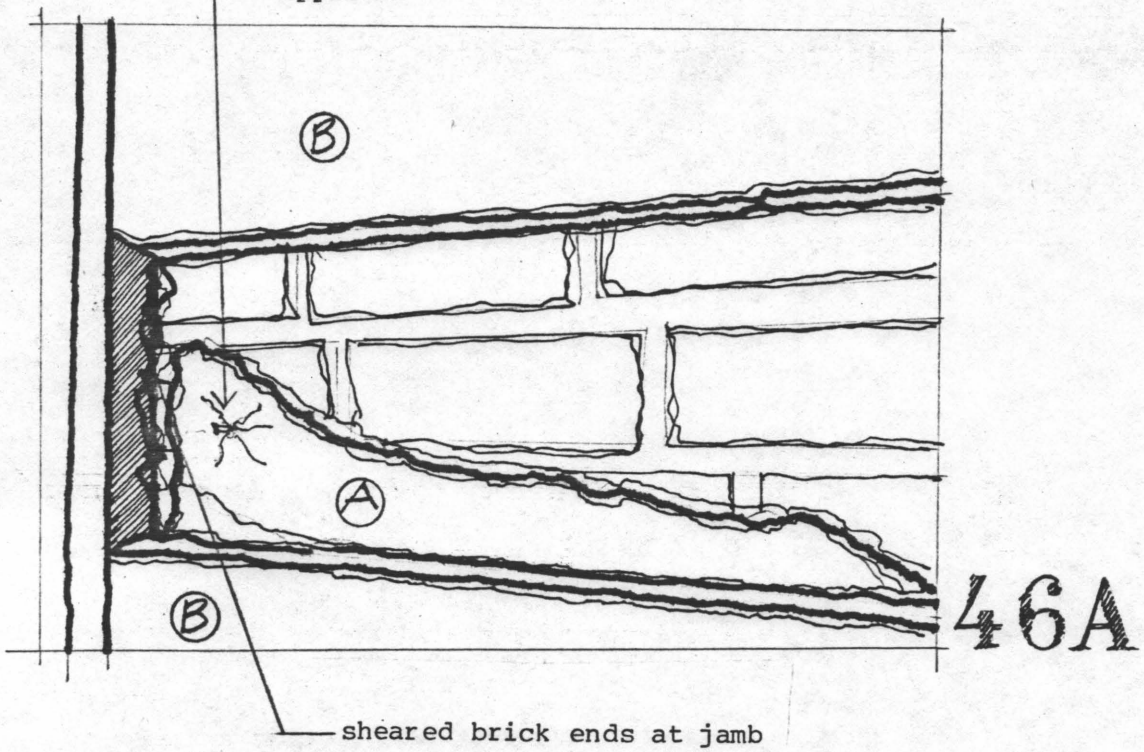
Masonry features -- Note brick header course and absence of construction joints or infilled masonry openings.



East wall RM 107,
exposed brick at
south jamb of window
W1-107

Note: the north jamb of the masonry opening at window W1-107, is integral to construction of the wall, as shown by flush vertical alignment of exposed bricks. Also, the mortar joints are formed flush at the heads of the brick, suggesting that the wall was laid against a wood frame.

Machine made cut nail. The pattern of radial cracks in the surrounding plaster (A) indicate that the nail was driven into the wall after this plaster was in place. Plaster (B), which was removed during the course of the investigation was found to adhere to the surface of the nail, and completely covered it. Therefore, the nail was already in place when plaster B was applied.

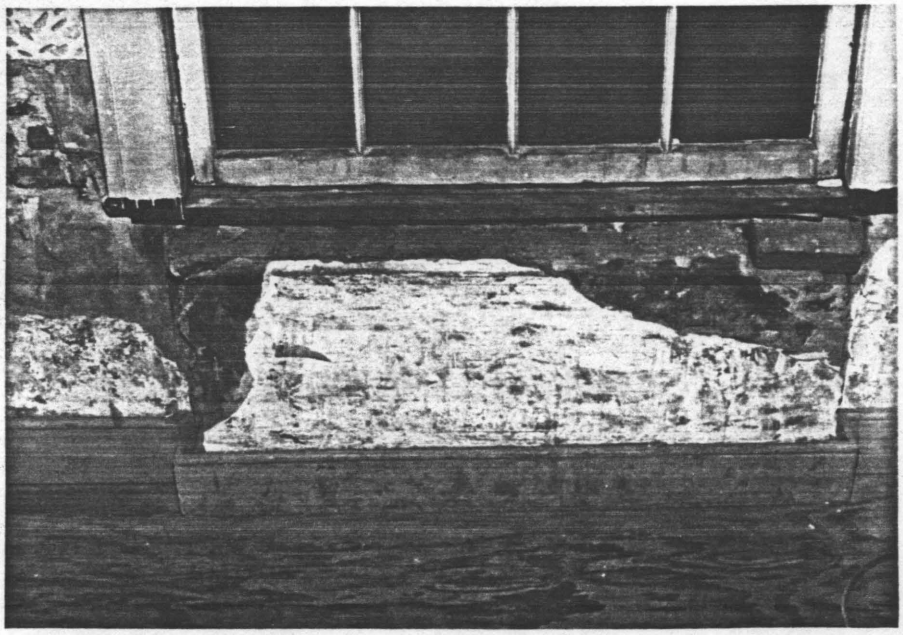


sheared brick ends at jamb



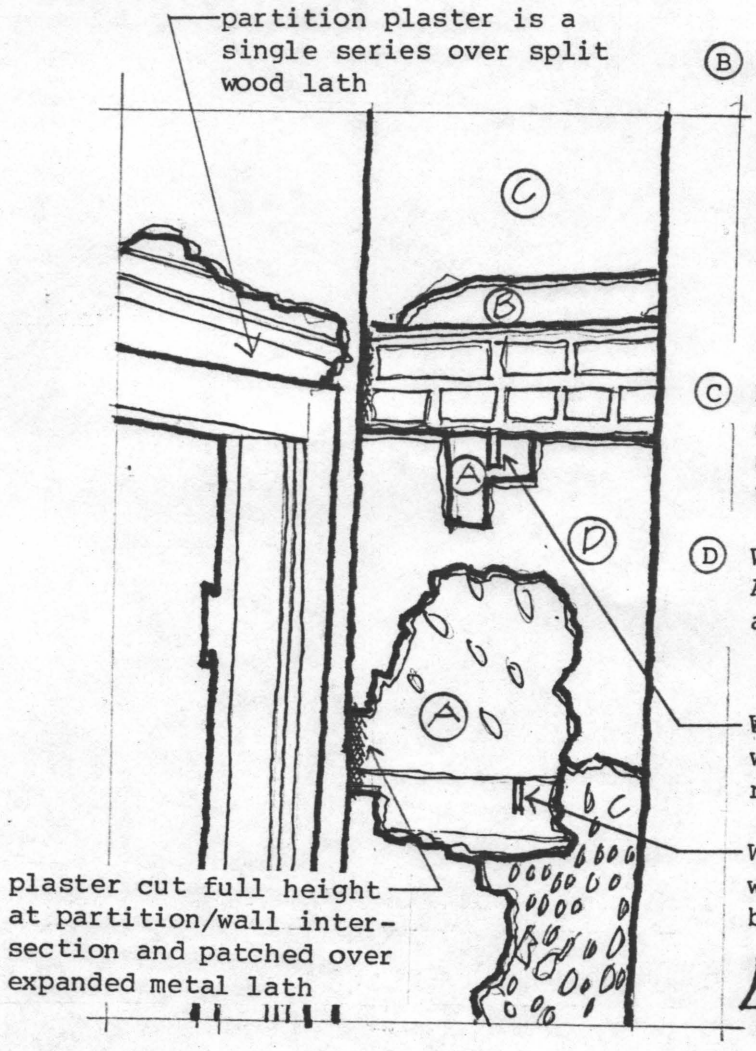
East wall RM 107,
between window W1-107
and north partition
wall.

47



East wall RM 107,
below window W1-107

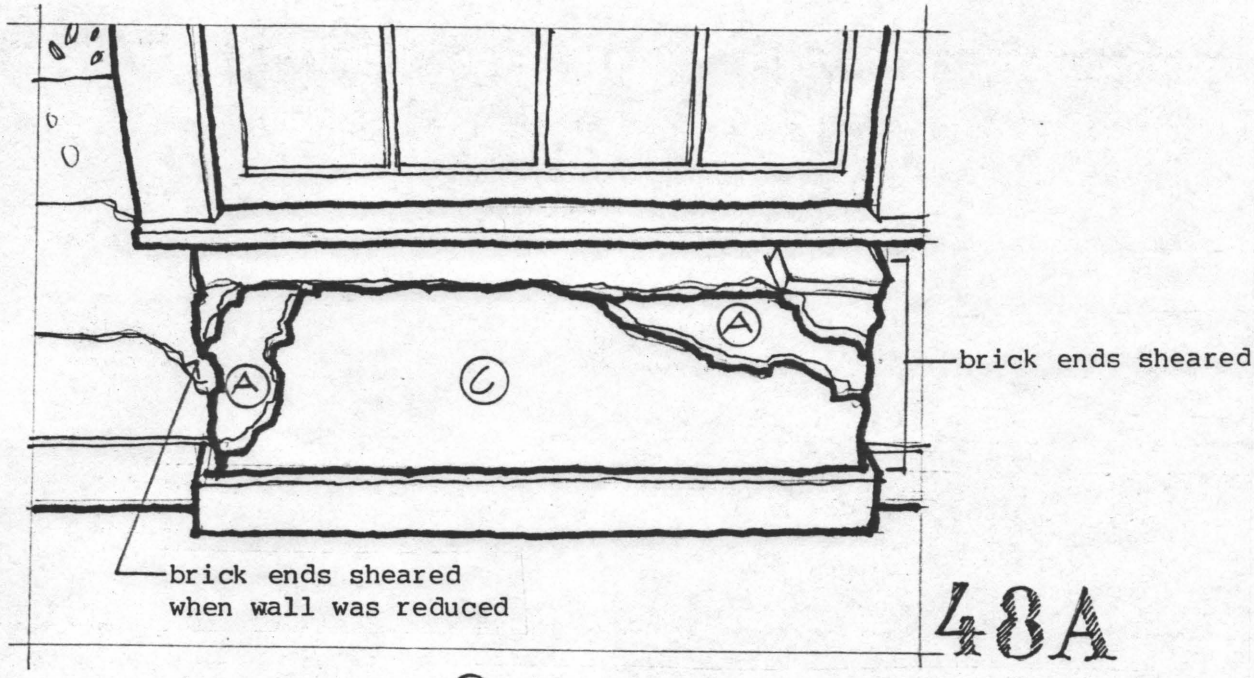
48



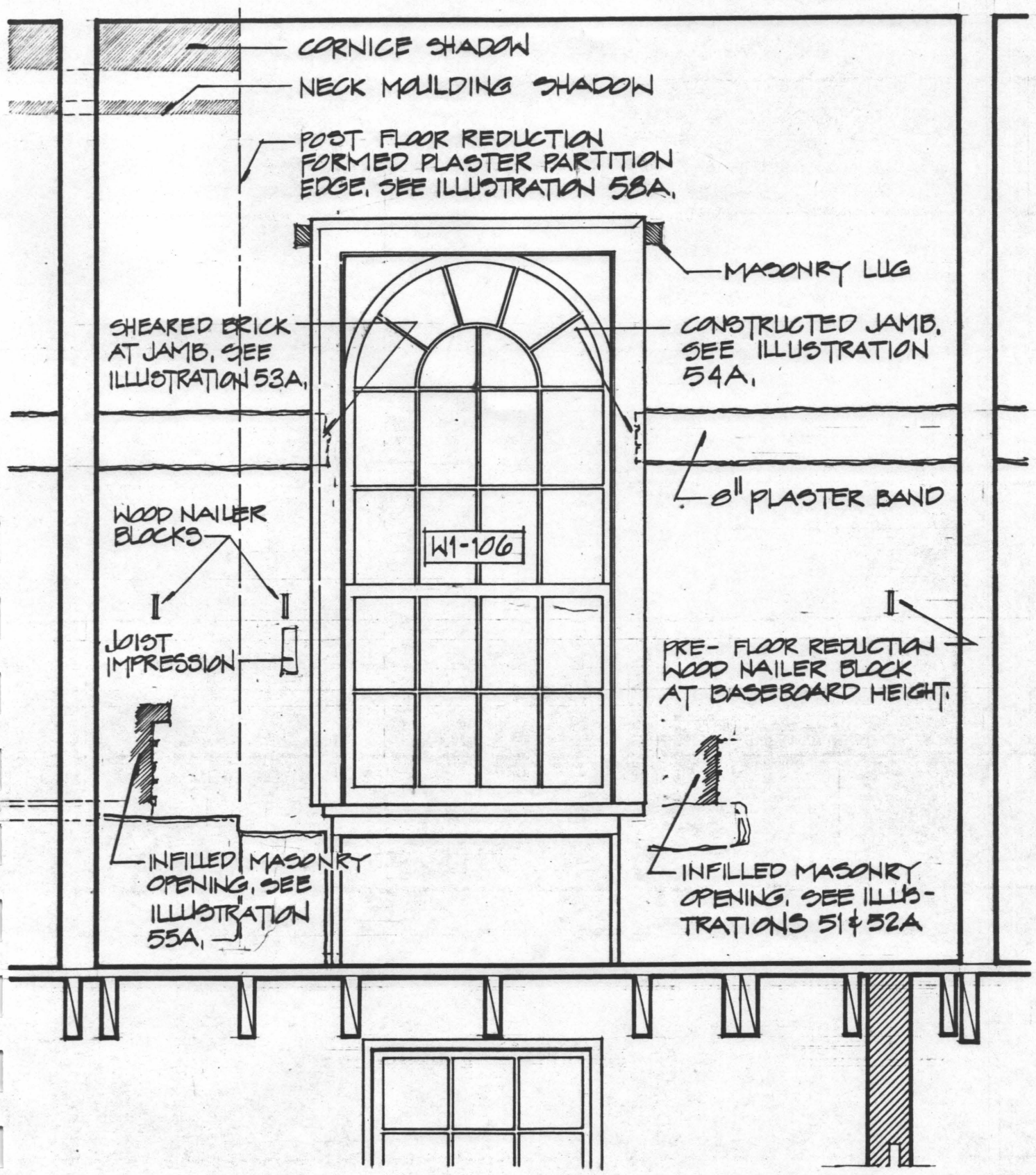
Ⓑ First layer of plaster on brick. Dark grey surface discoloration. This plaster was formed against the upper edge of the pre- floor reduction chair rail. It corresponds to the red surfaced plaster, found below chair rail height, formed against its lower edge.

Ⓒ First extant post floor reduction plaster series appears generally over entire wall surface above plaster Ⓐ and Ⓑ. Scored to receive subsequent finish.

Ⓓ White coat. Most recent extant finish. Appears generally over plaster Ⓒ on all wall surface.



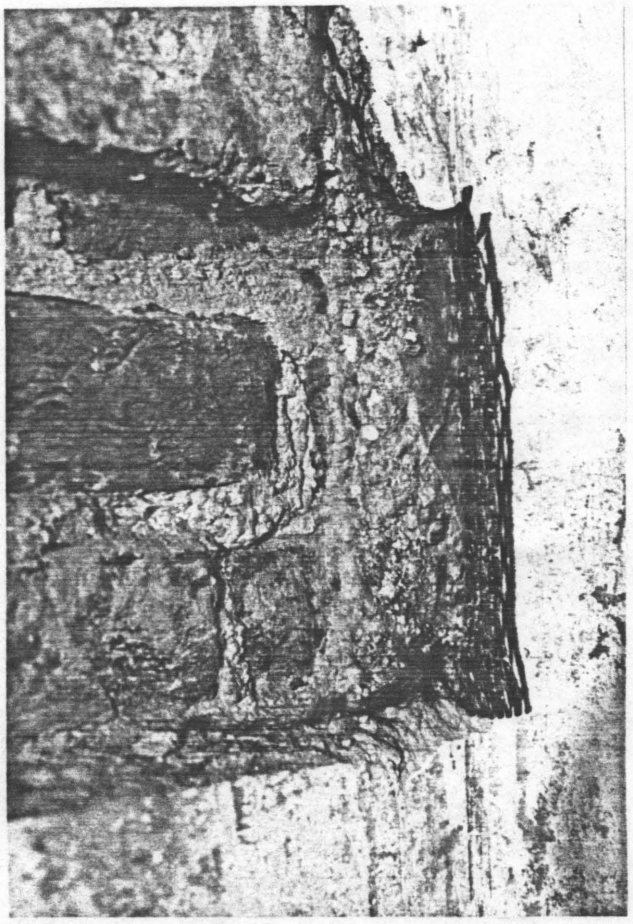
Ⓐ First layer of plaster on brick below pre- floor reduction chair rail height. Hard red finish, scored to receive subsequent coats. Appears also on the unreduced face of the wall below window W1-107. Sheared plaster at the broken brick ends corresponds to the line at which the wall was reduced adjacent to the window.



EAST WALL RM 106 ELEVATION

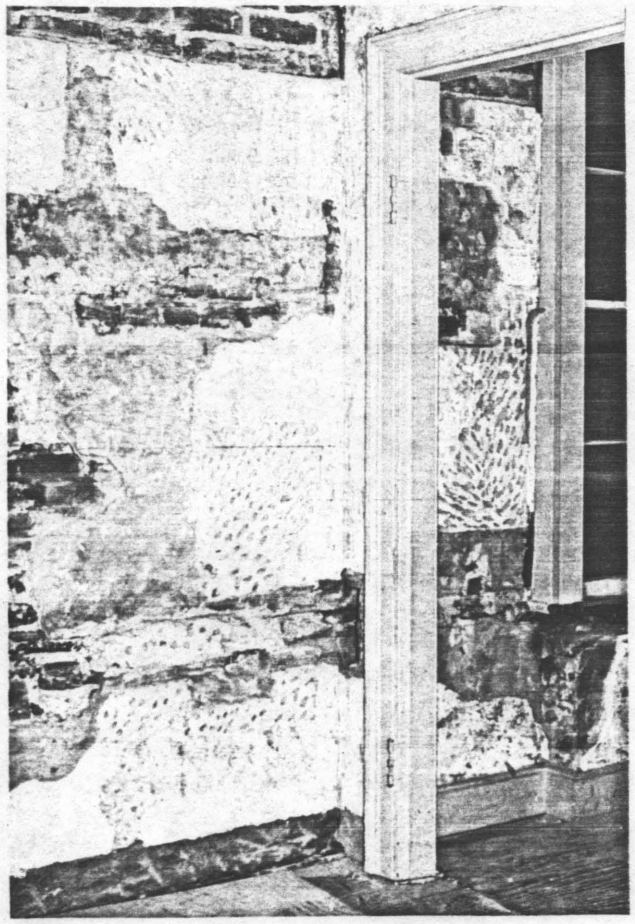
SCALE: 1/2" = 1'-0"

0 1 2 3 4 6 FEET



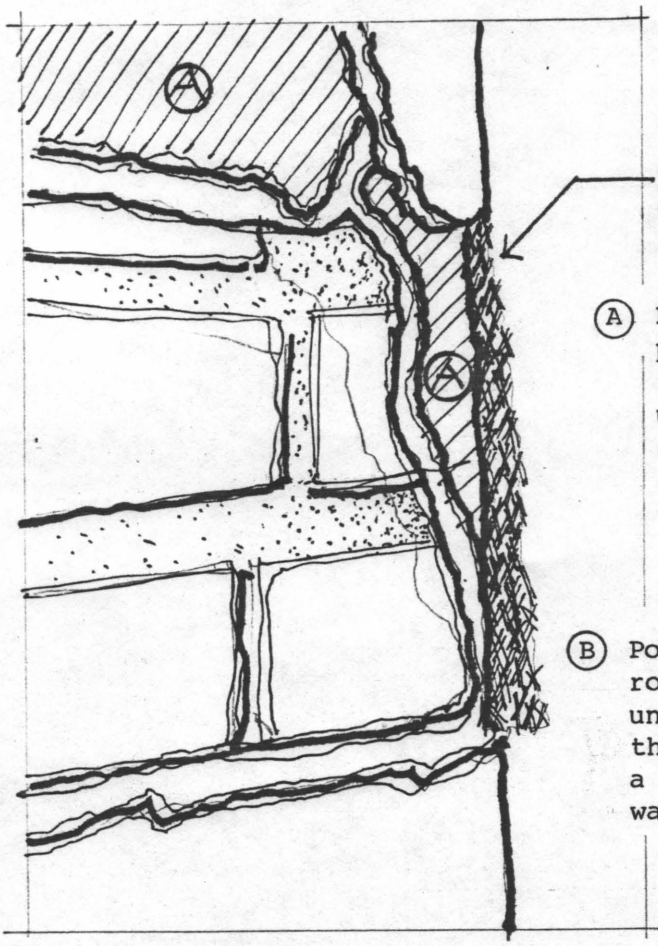
East wall RM 106,
detail at partition/
wall intersection

49



East wall RM 106,
between window W1-106
and south partition

50

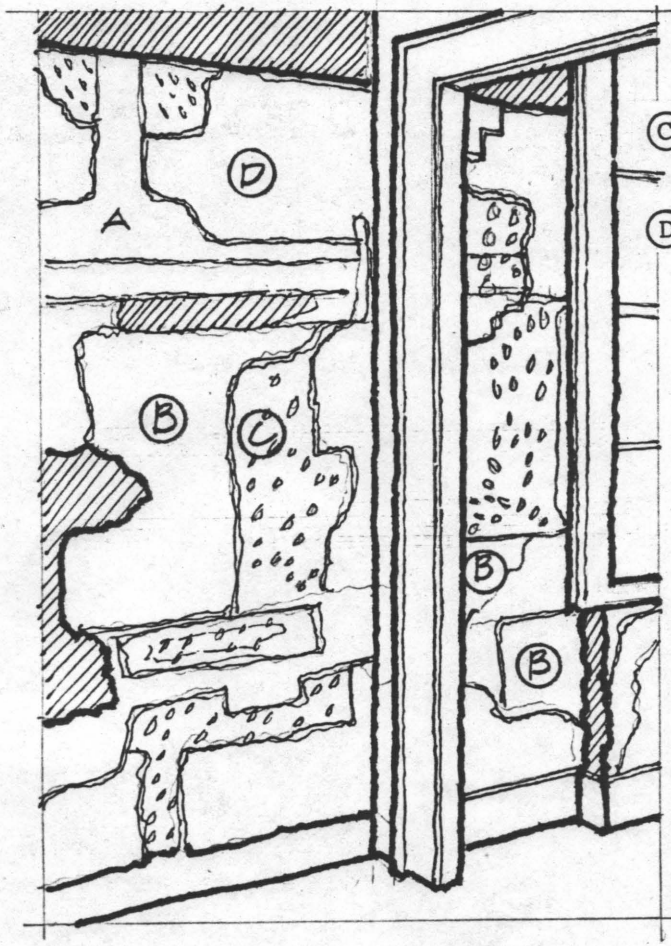


Plaster cut full height at partition/ wall intersection and patched over expaneded metal lath.

(A) First plaster on brick, hard grey finish plaster found in conjunction with pre-floor reduction chair rail is continuous underneath existing partition to RM 107 east wall. Again, the the grey plaster is found above chair rail height, with the corresponding hard red plaster below.

(B) Portland cement patch over lime plaster rough coat. The patch is continuous underneath the existing partition to the east wall of RM 107, where it carries a small fragment of an unidentified patterned wallpaper.

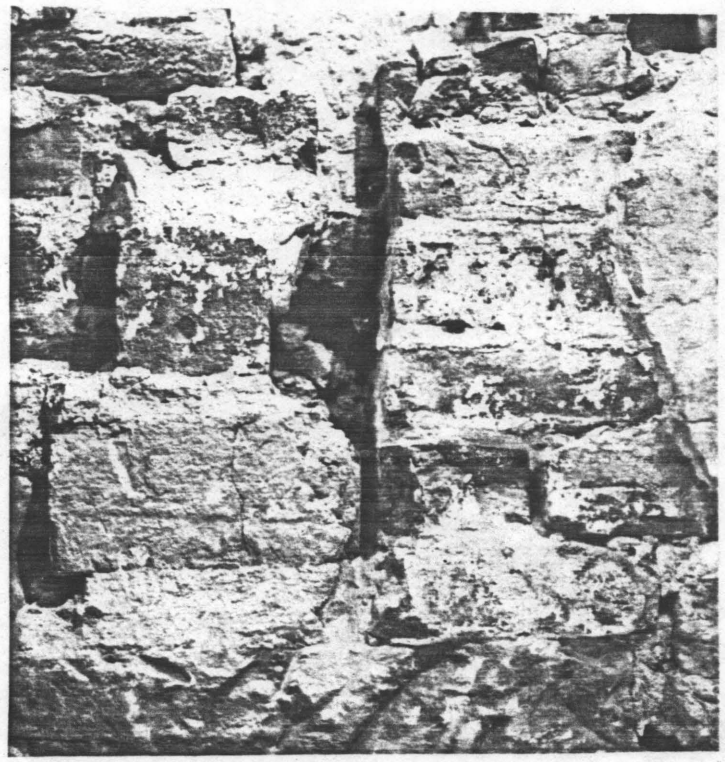
49A



(C) Post floor reduction, scored plaster coat general over (A) and (B).

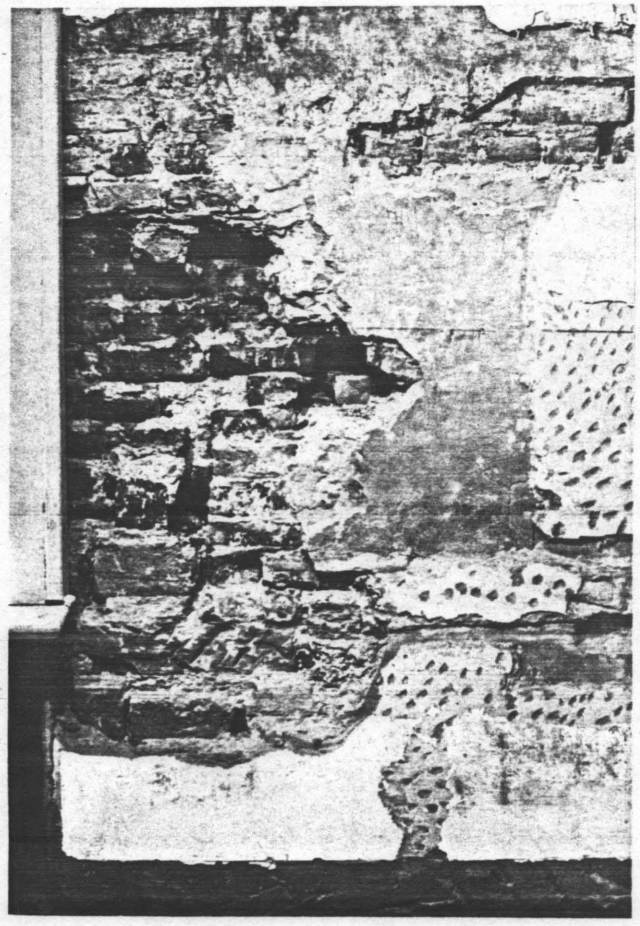
(D) White coat. Most recent finish.

50A



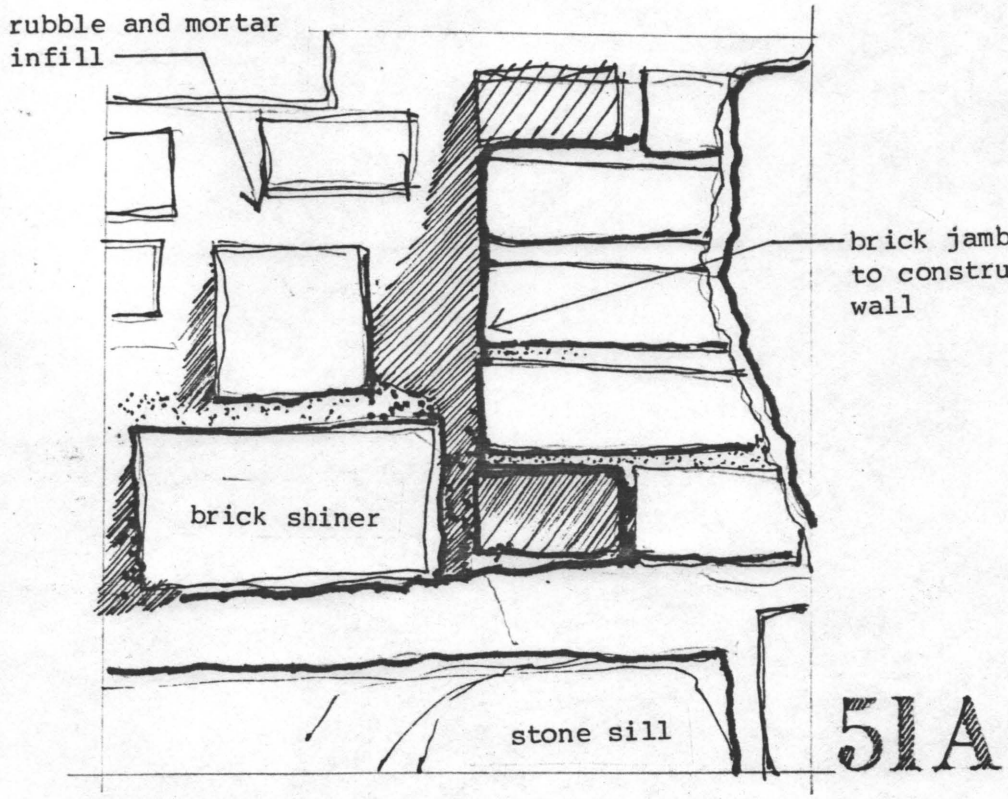
East wall RM 106,
detail of infilled
masonry opening

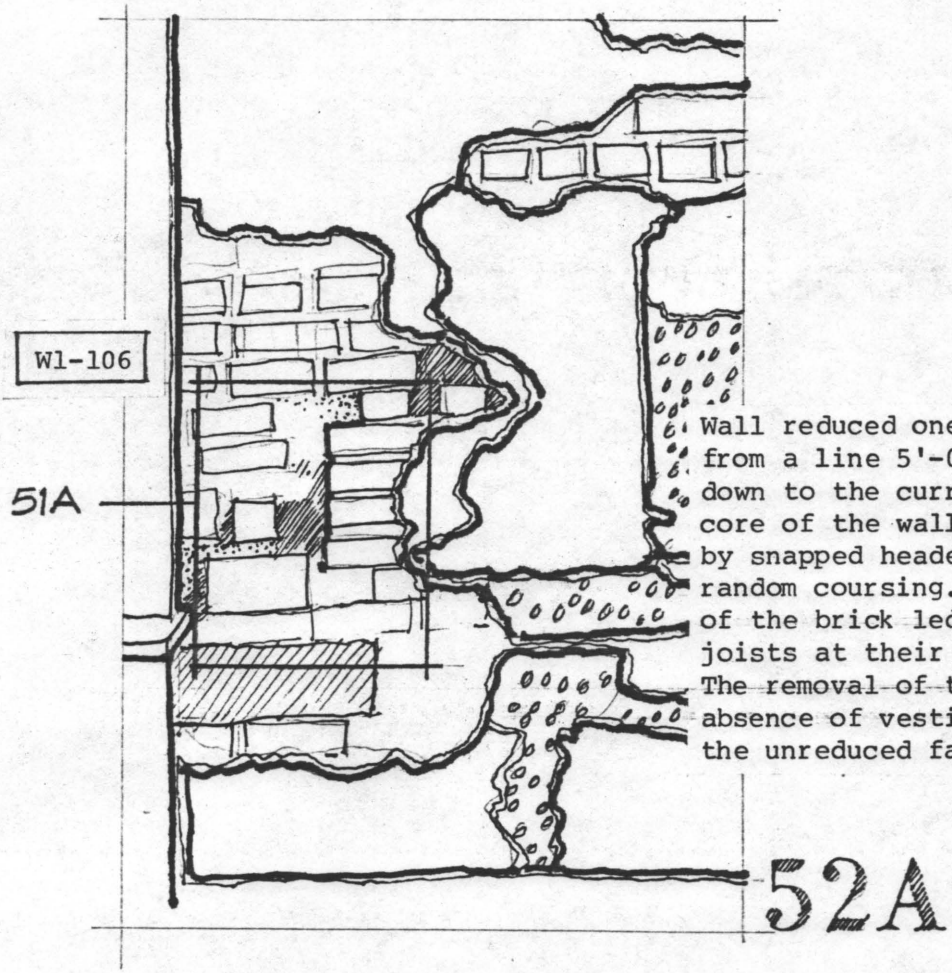
51



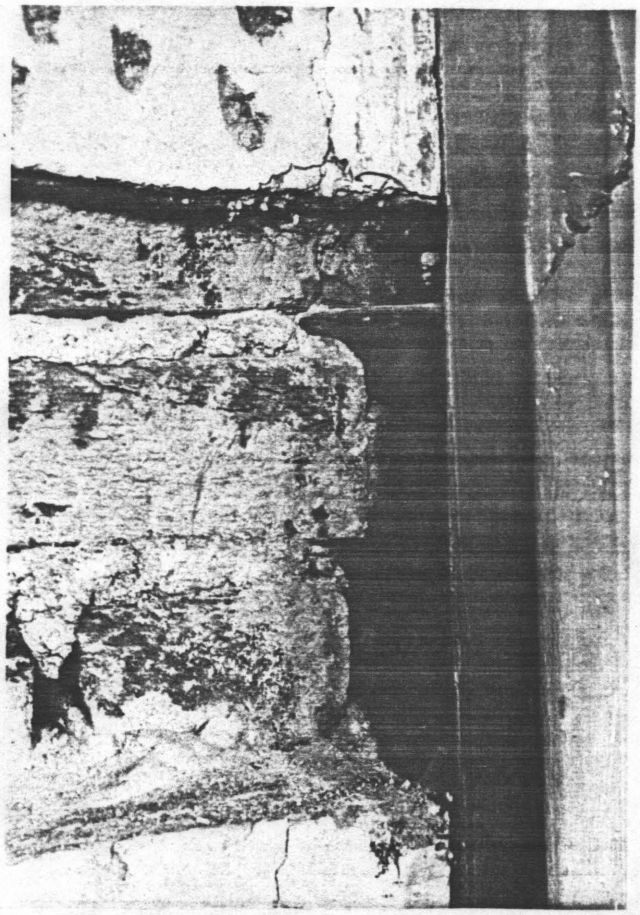
East wall RM 106,
south of window W1-106

52



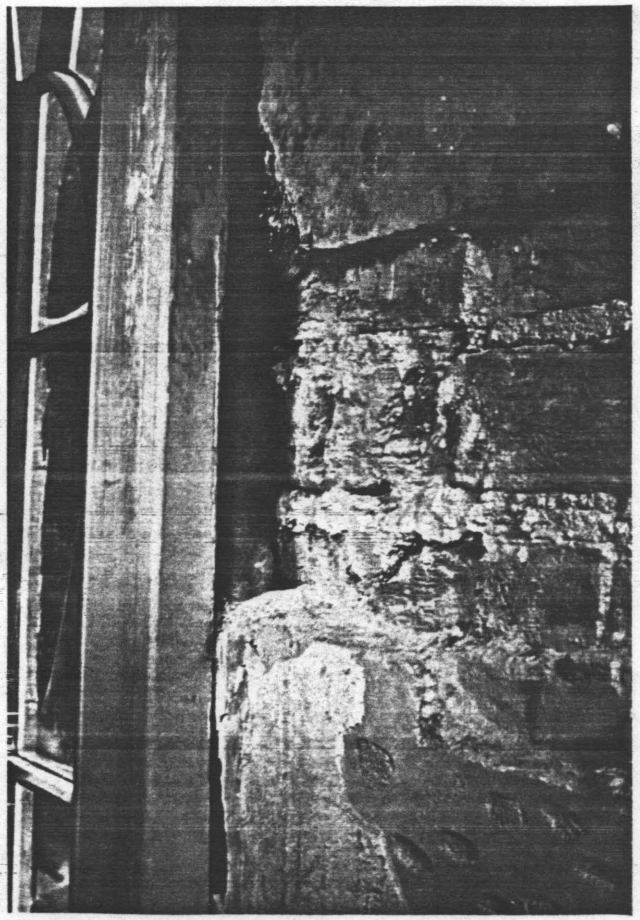


Wall reduced one course of brick in thickness from a line 5'-0" above the existing floor down to the current floor level. The inner core of the wall thus exposed is characterized by snapped headers and broken bricks laid in random coursing. This feature shows the line of the brick ledge wall which carried the floor joists at their originally constructed height. The removal of this ledge also explains the absence of vestigial joist pockets except at the unreduced face of the chimney breast.



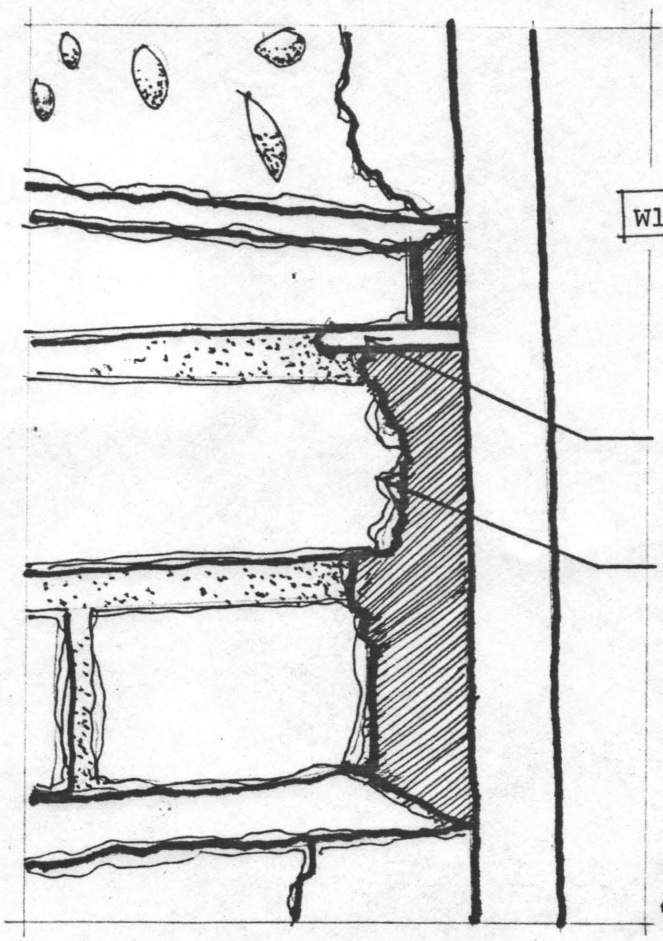
East wall RM 106,
north jamb at window
W1-106

53



East wall RM 106,
south jamb at window
W1-106

54

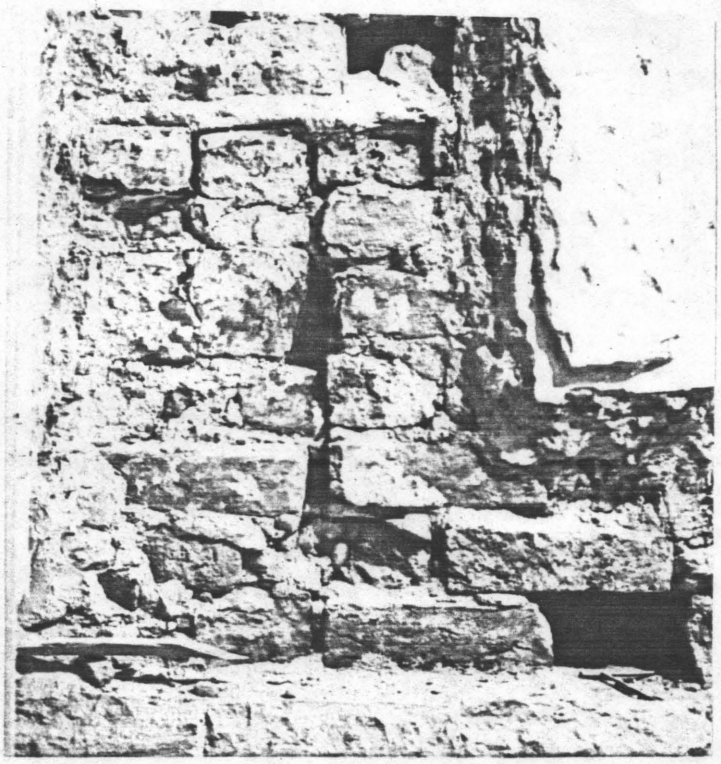


53A



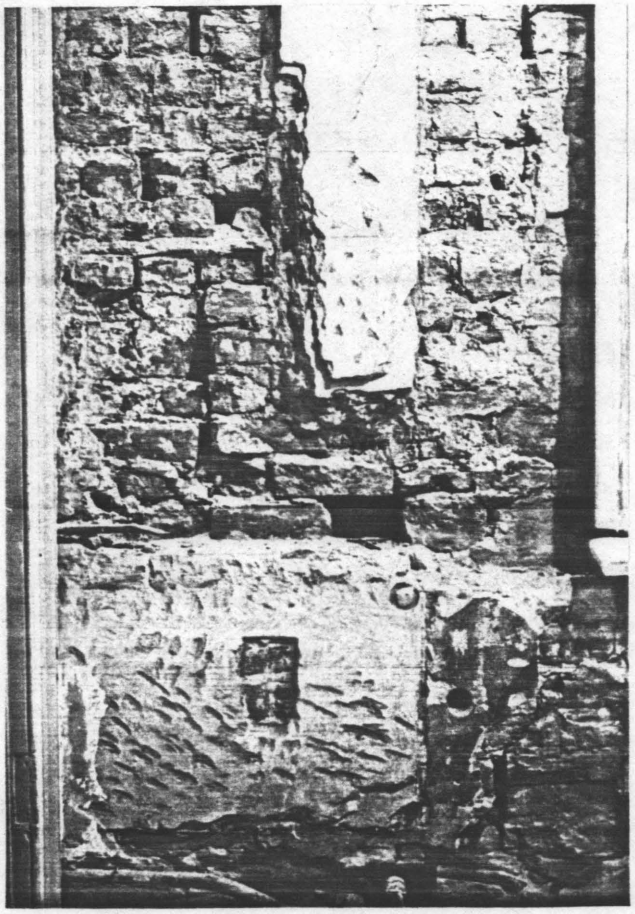
South jamb of masonry opening shows a flush vertical alignment of bricks. No sheared bricks were found at this jamb. Also, all visible mortar joints are formed flush at the head of the bricks, suggesting that the brick jamb was laid against a wood frame. Therefore, this jamb is believed to be original to construction of the wall. The masonry lugs and segmental relieving arch at the window head show no evidence of being later alterations. Given the evidence of the integral construction of the south jamb, it seems probable that the basic size and configuration of the window opening is original to construction of the wall. Documentary sources confirm a history of repair and replacement of windows. The sheared brick at the north jamb may be assumed to be the result of one of these alterations, probably the installation of counterweights, necessitating a wider masonry opening.

54A



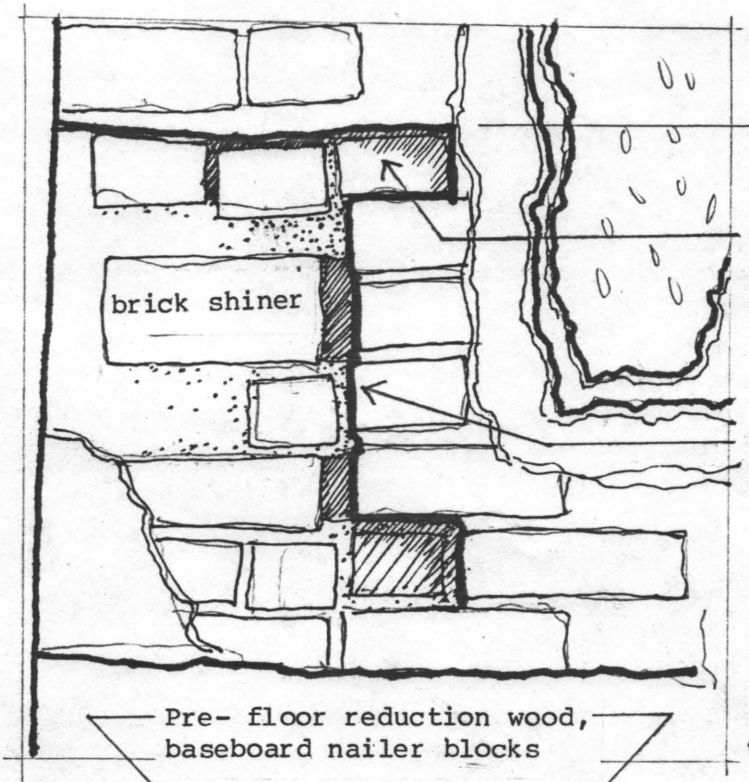
East wall RM 106,
detail of infilled
masonry opening

55



East wall RM 106,
between window W1-106
and north partition

56

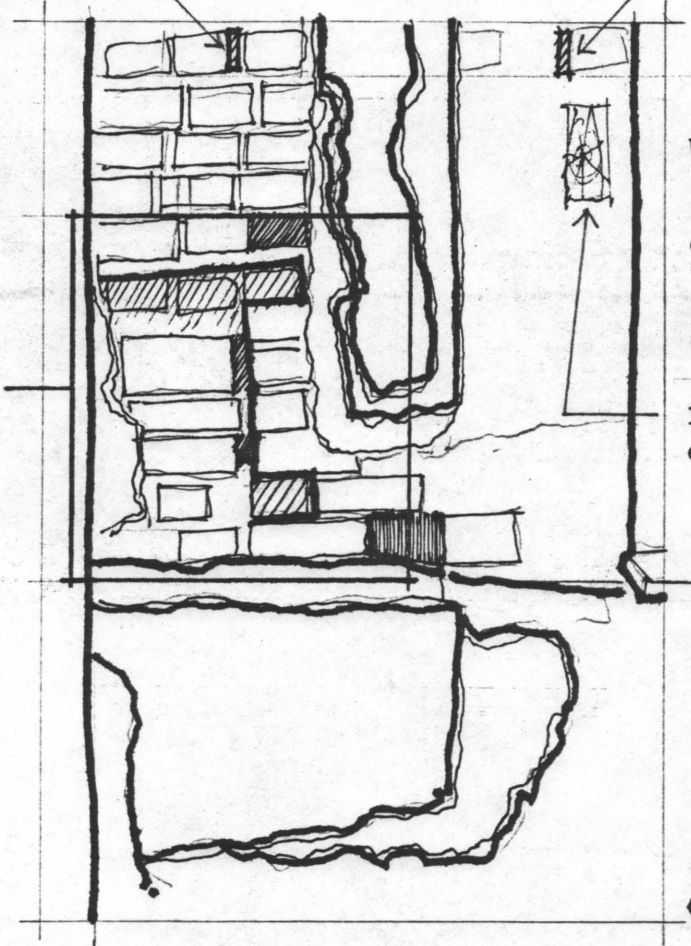


head height 4'-4" above existing floor

Formed recess infilled with mortar and brick rubble, believed to be masonry lug to carry wood lintel.

Brick jamb, original to construction of wall. Opening dimensions unknown.

55A



Wall reduced one course of brick in thickness from the original floor height to the level of the existing chair rail ledge. The inner core of the wall thus exposed, is characterized by snapped headers and random coursing.

Imprint of pre- floor reduction joist end grain in mortar.

chair rail height brick ledge 2'-2" above existing floor

56A

north partition wall

east wall RM 106



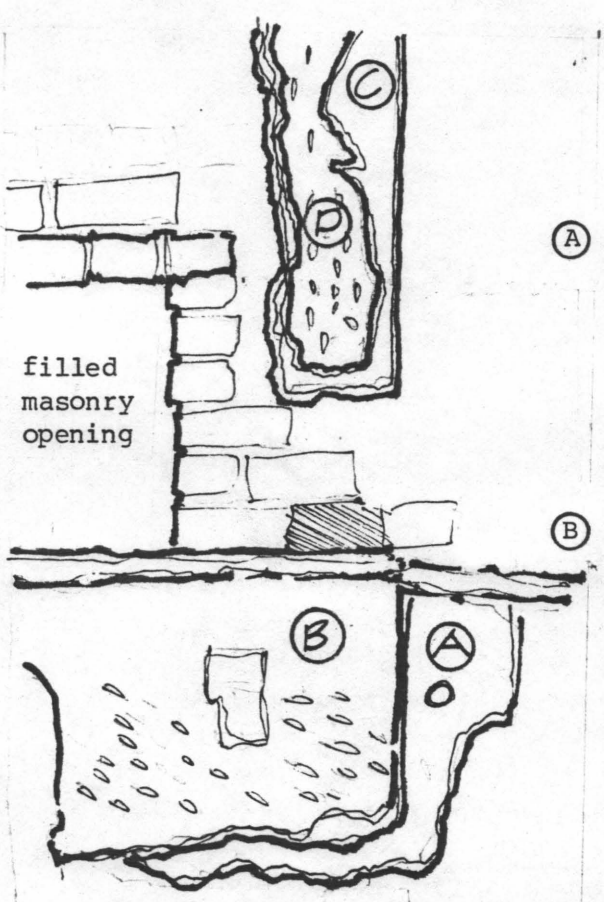
East wall RM 106
between window W1-106
and north partition

57



RM 106, northeast
corner

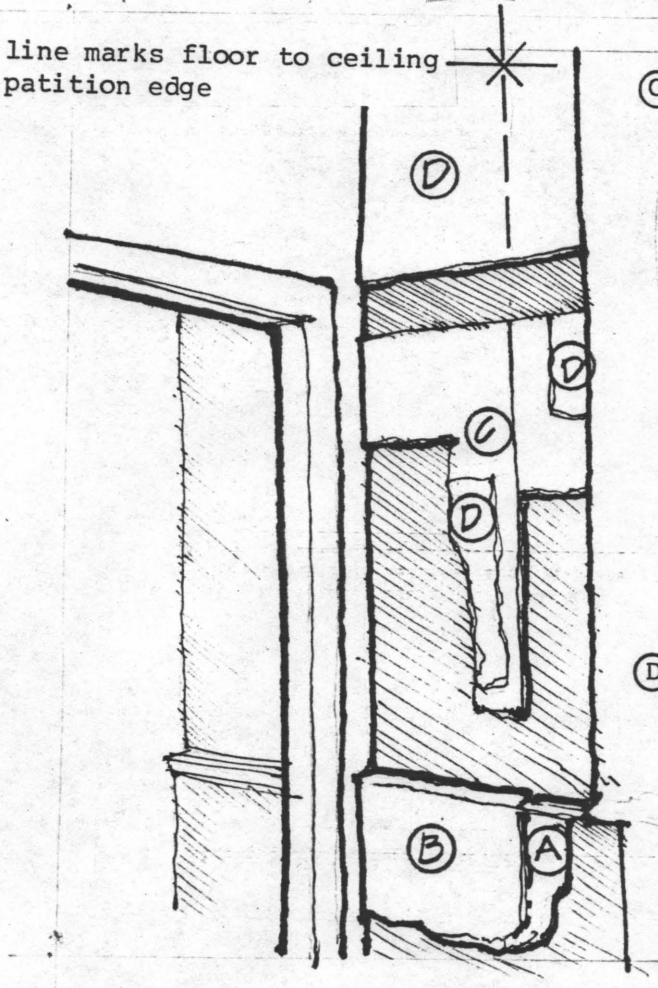
58



(A) First layer of plaster on brick. Applied red finish. Appears only on unreduced areas of wall below the height of the original floor level. The sheared upper edge of this plaster corresponds to the line of reduction in wall thickness to the height of the existing chair rail.

(B) First finish series on top of plaster (A). The south edge of this plaster is formed in the imprint of a partition edge. The upper edge of this plaster is also sheared at chair rail height, suggesting that it also predates the reduction in floor level.

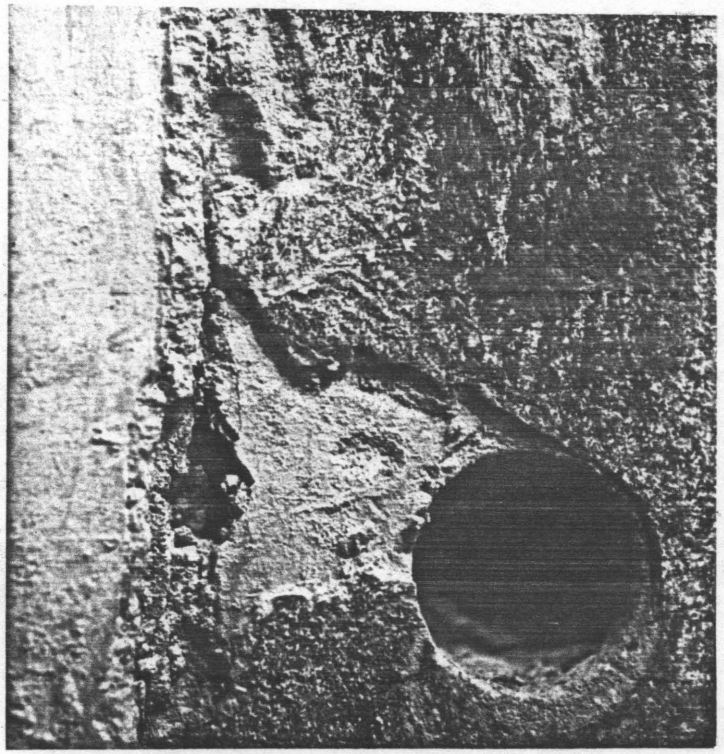
57A



(C) First seriesof plaster on brick above existing chair rail height. This plaster terminates abruptly in a formed vertical edge, continuous from chair rail height to the ceiling. This edge, if projected in a line perpendicular to the west wall of RM 105 intersects the former partition location at the north face of the chimney breast (see illustrations 5A and 6A). This plaster series carries the shadow of a cornice and neck moulding which is continuous on the east walls of RM 106A and RM 104. It turns the corner to the north and west walls of RM 104, and continues on the west wall of RM 105 to its termination at the north face of the chimney breast.

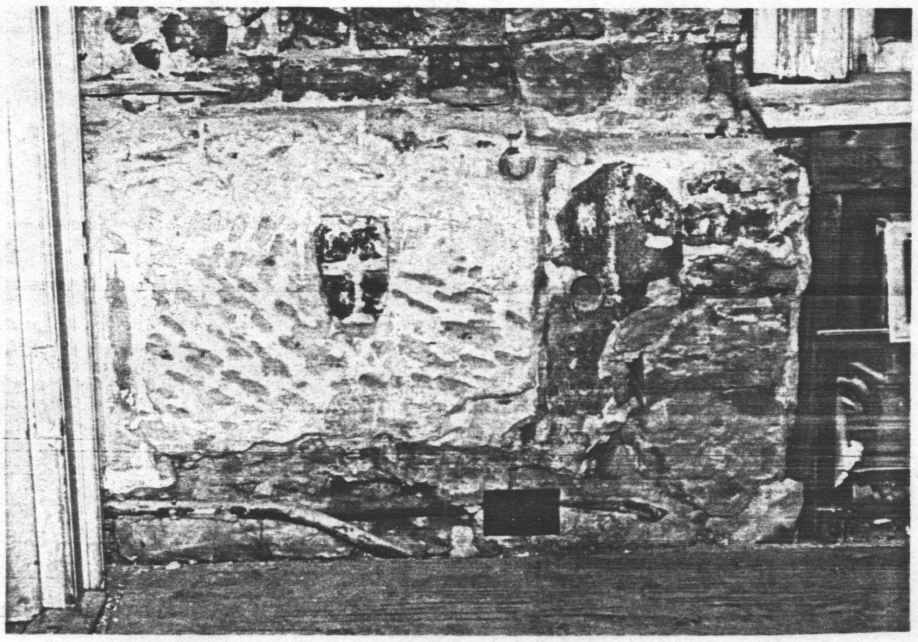
(D) First series of plaster on brick south of partition edge in plaster (C). North of the partition edge, it forms the first series on top of plaster (C), terminating at the north wall of RM 106. This series is covered with a white coat, which forms the most recent finish.

58A



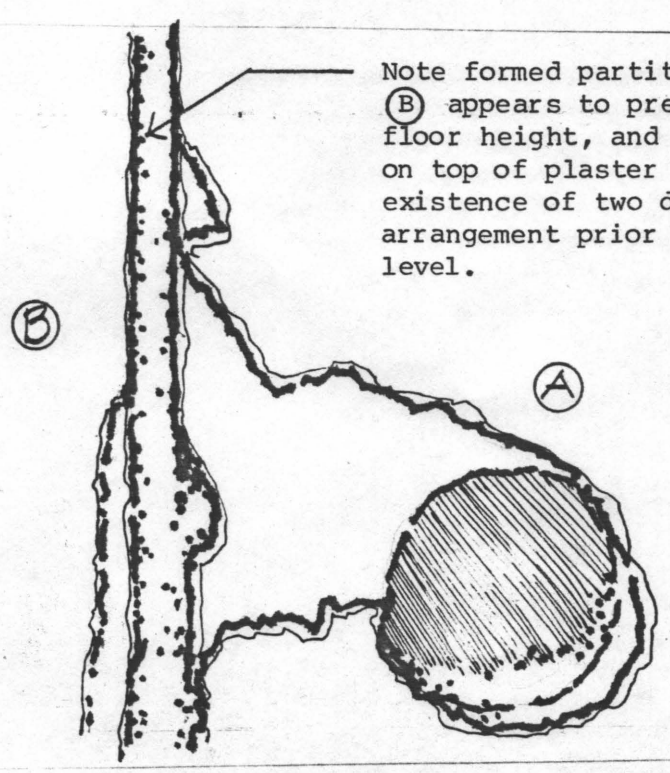
East wall RM 106, detail of plaster edge

59

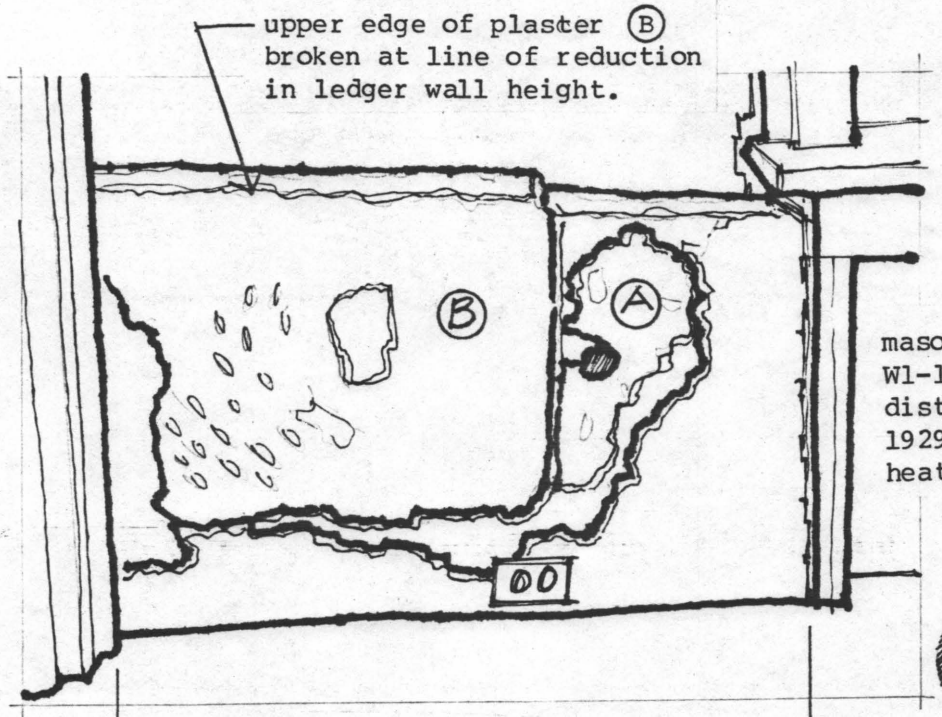


East wall RM 106, detail of chair rail ledger

60

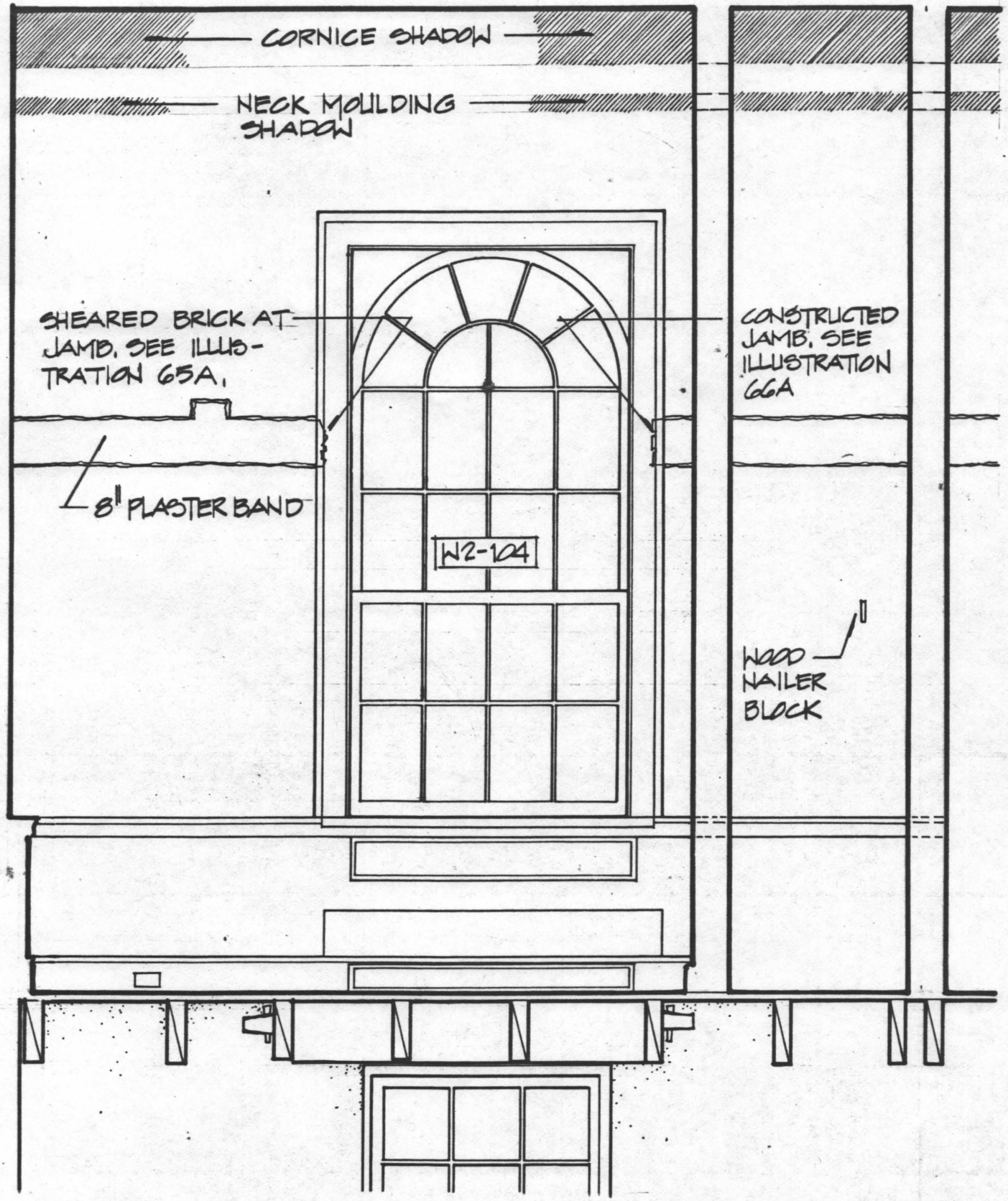


59A



60A

door D3-106 — east wall RM 106 — window W1-106



EAST WALL RM 104 ELEVATION

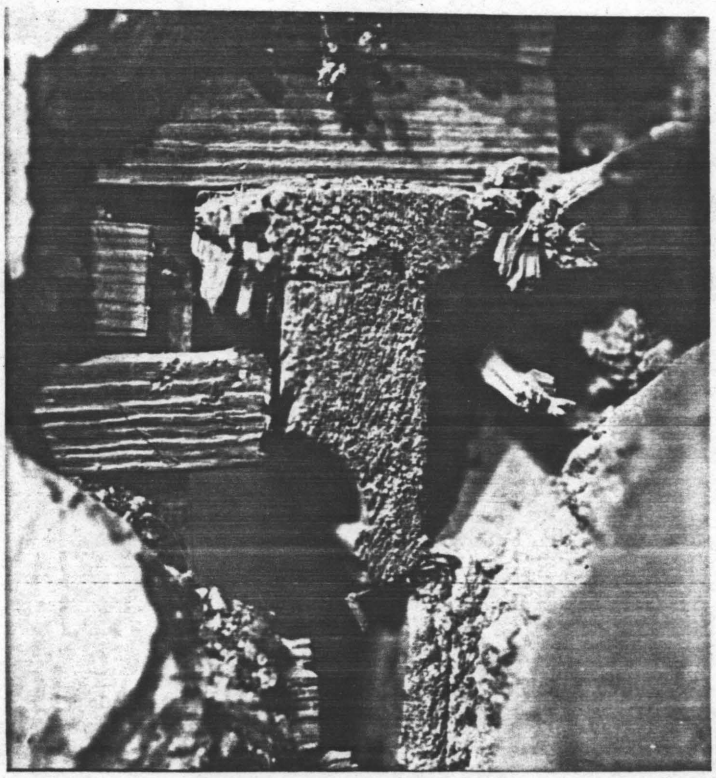
SCALE: 1/2" = 1'-0"

0 1 2 3 4 6 FEET



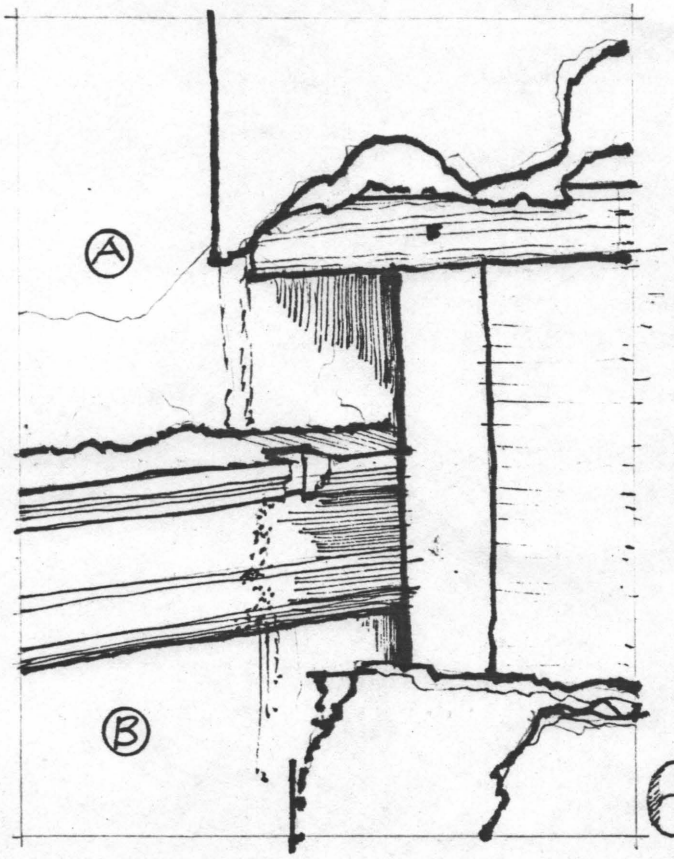
South wall RM 106A,
detail of chair rail

61



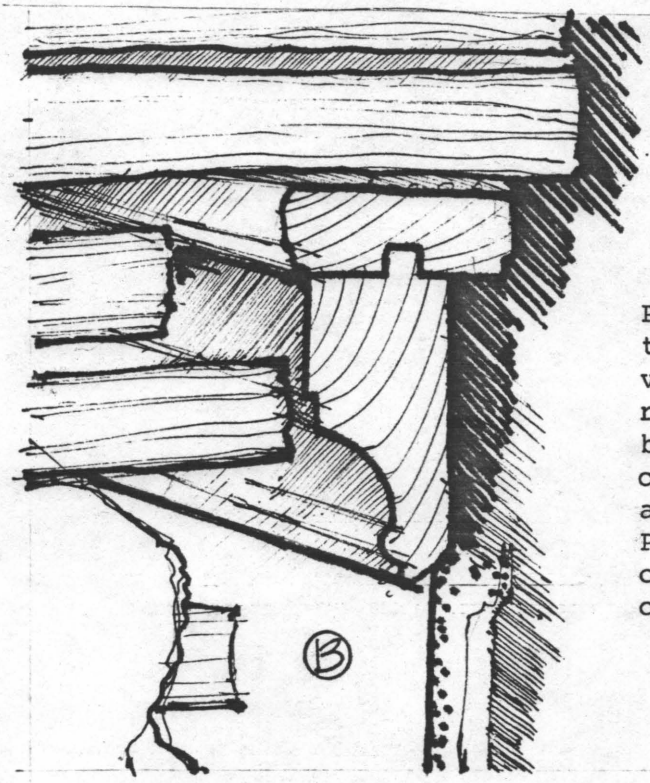
North wall RM 106 ,
detail of chair rail

62



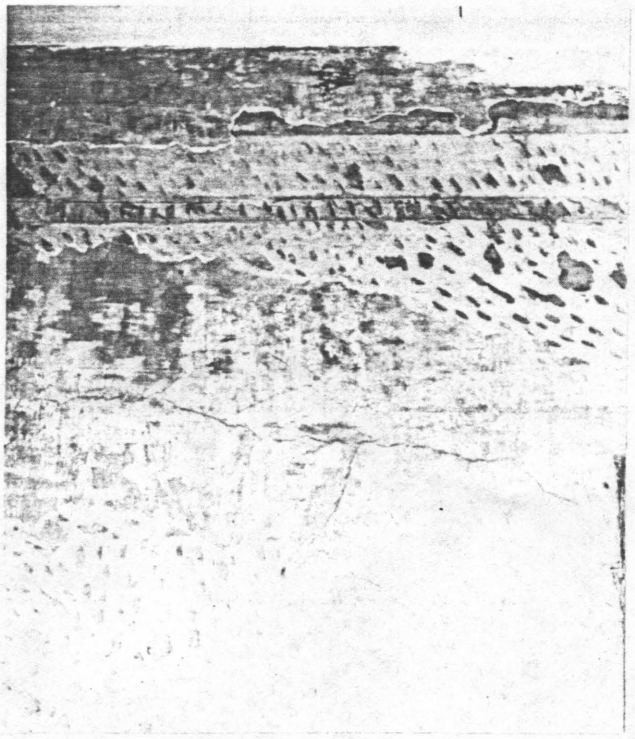
Chair rail is continuous through the partition separating RM 106A and RM 106. The partition, typical of all partitions in the north wing, is composed of a single series of plaster on split lath over reused whip sawn studs. The area of chair rail protected by the partition shows a green painted finish.

61A



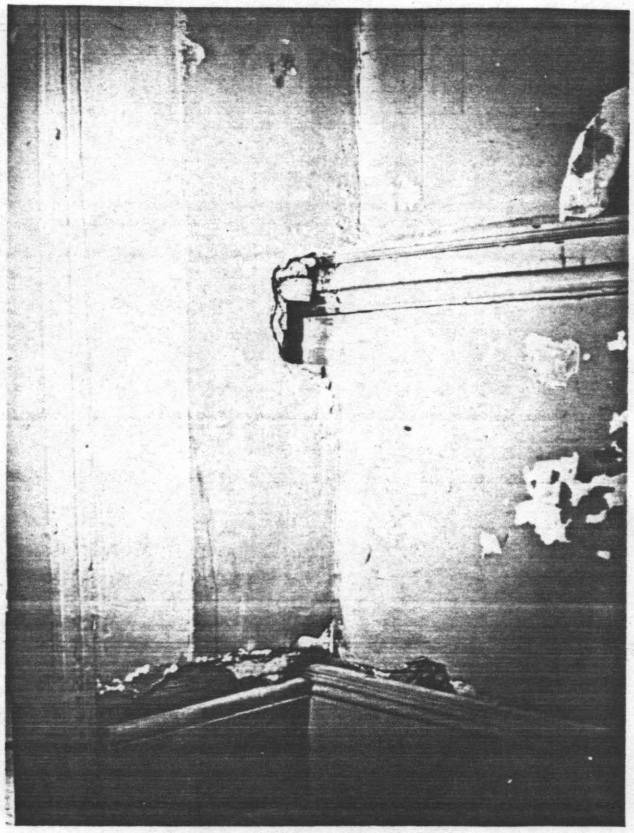
Plaster series (A) and (B) are both the first series on brick. The vertical element of the chair rail rests on top of plaster (B). The bottom edge of the chair rail is chamfered, possibly to facilitate application of a plaster skim coat. Plaster (A) is applied over the top of the horizontal surface of the chair rail.

62A



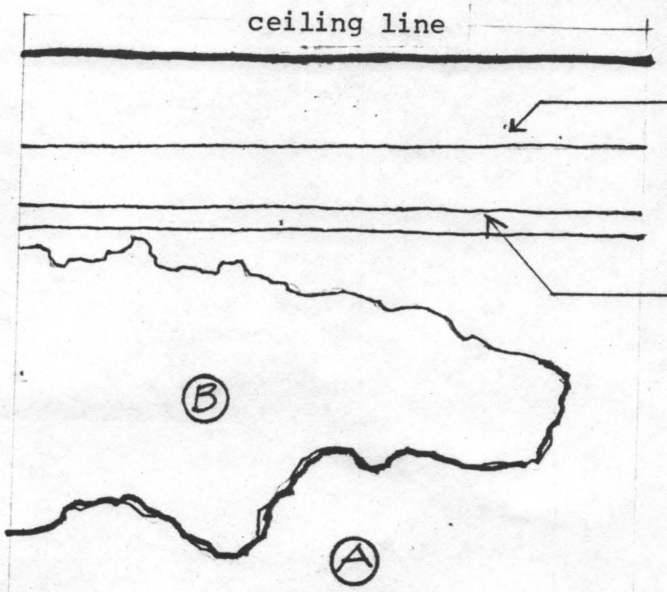
East wall RM 105,
detail of cornice
and neck moulding
shadow

63

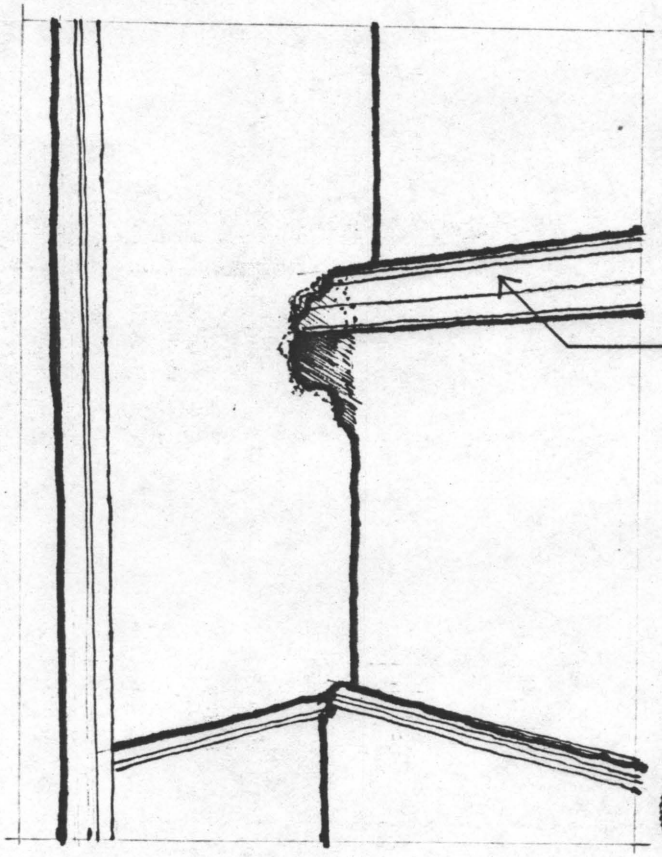


Northeast corner of RM 106A,
detail showing continuity of
chair rail under partition

64



63A

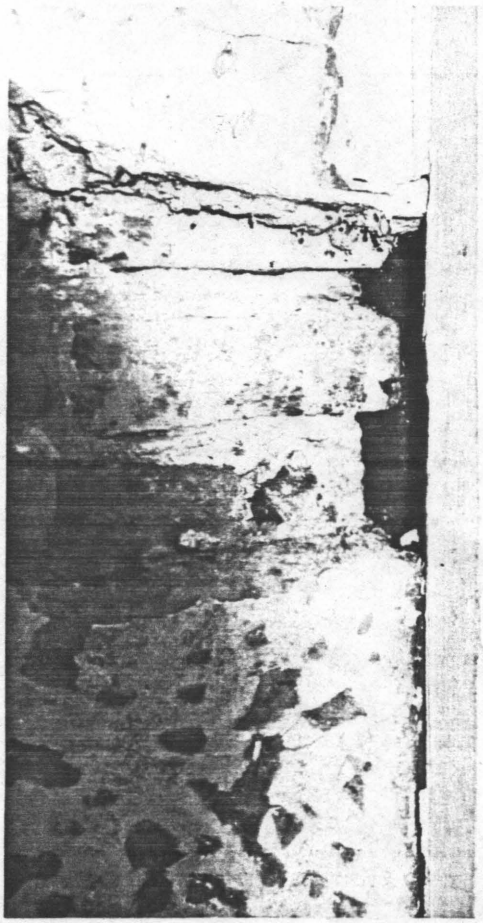


64A

Ⓐ First finish series of plaster on brick.

Ⓑ Extant area of white coat, which is the most recent finish.

Chair rail is continuous underneath the partition separating RM 106A and RM 104. The area of the chair rail protected by the partition shows a green painted finish.



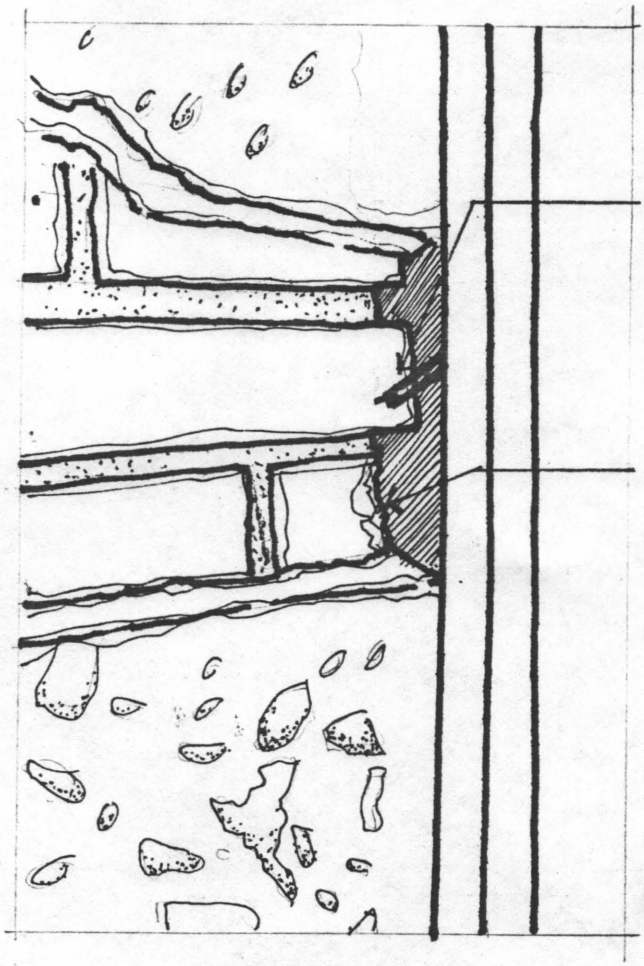
East wall RM 104,
north jamb of window
W2-104

65



East wall RM 104,
south jamb of window
W2-104

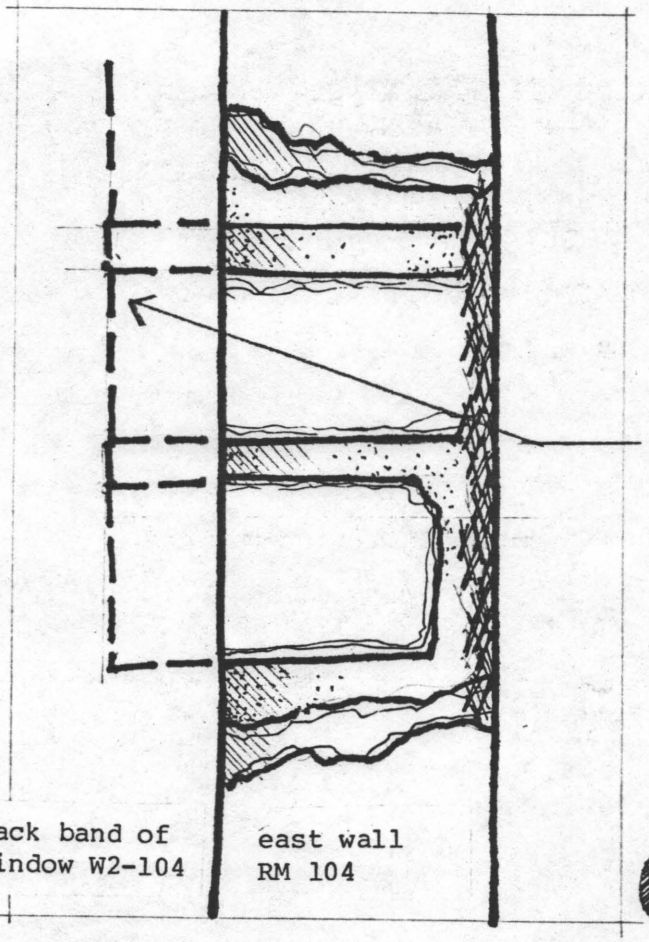
66



Metal anchor through window frame into brick jamb. A similar condition occurs at window W1-106, see illustration 53A.

sheared bricks at jamb

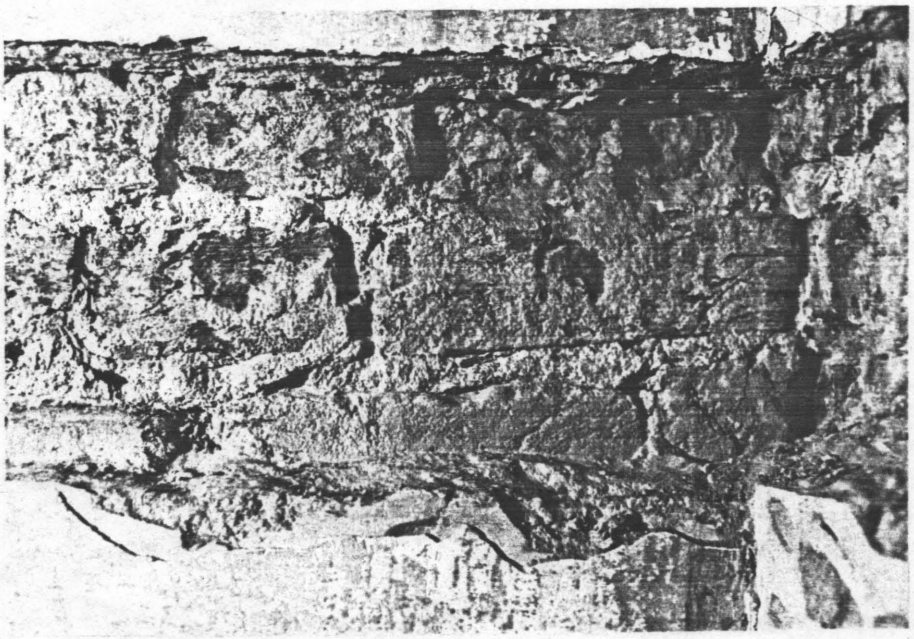
65A



This opening exhibits the same conditions shown at windows W1-106 and W1-107. Therefore, following the same reasoning, this opening in basically the same size and configuration, is assumed to be original to the construction of the wall.

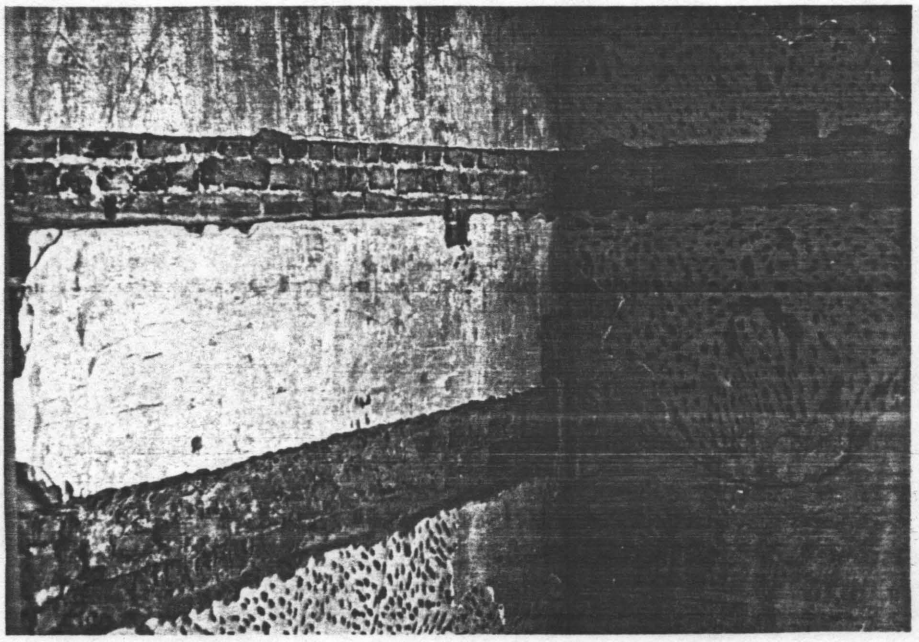
Brick jamb integral to construction of wall. See illustration 54A.

66A



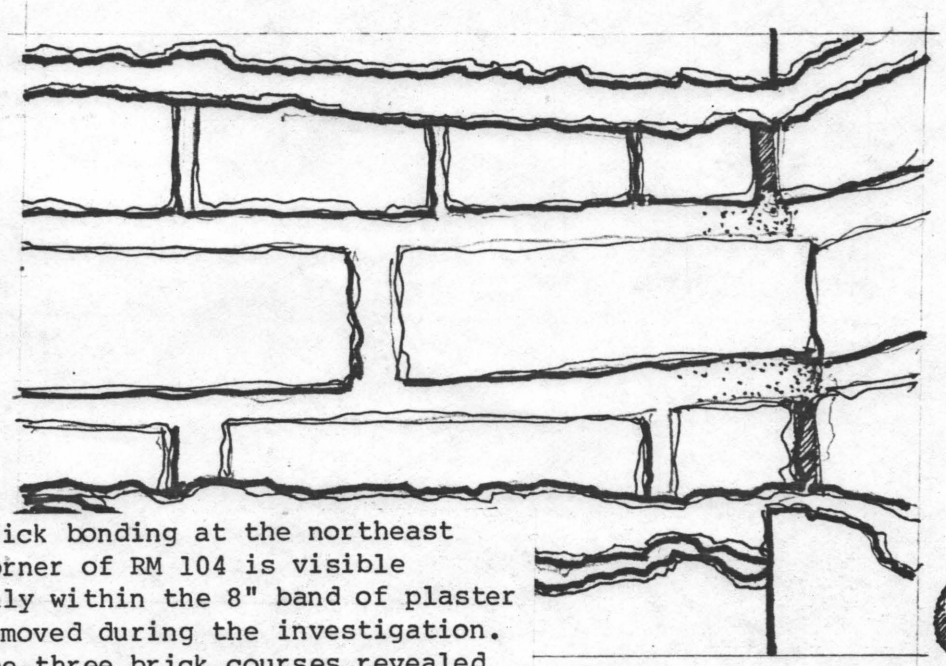
Northeast corner RM 104, masonry detail

67



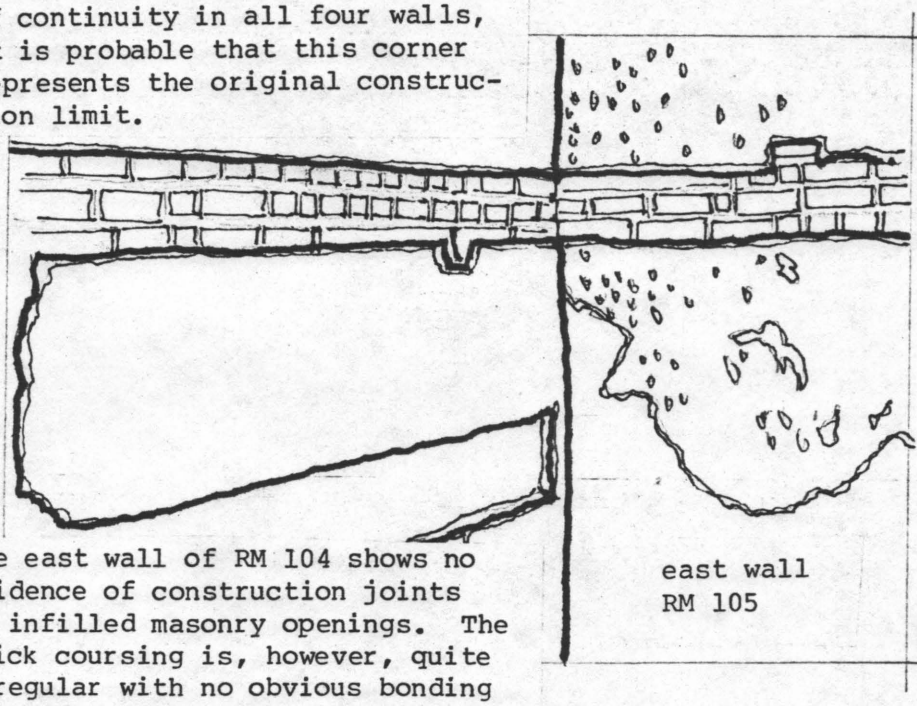
Northeast corner RM 104

68



67A

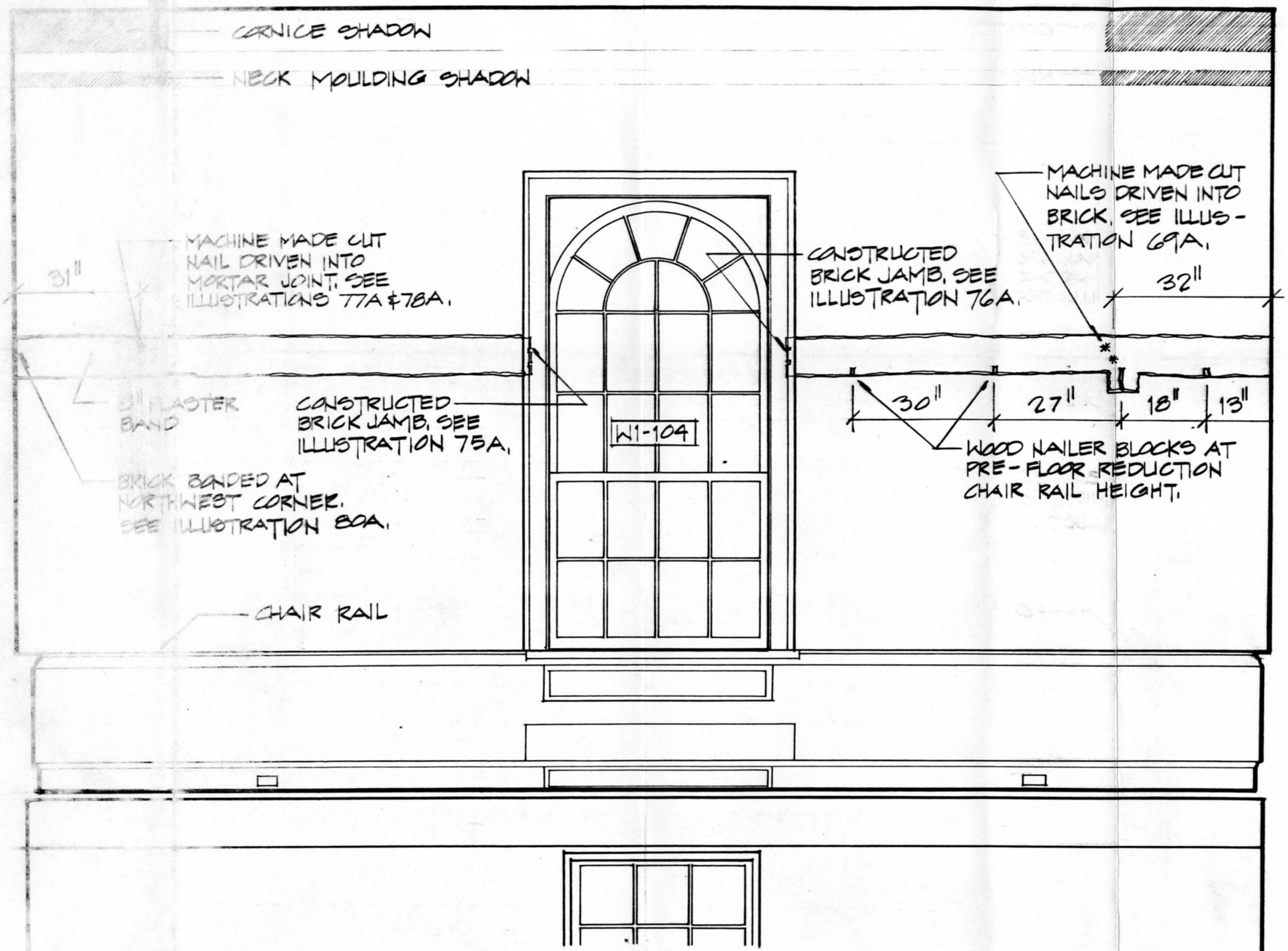
Brick bonding at the northeast corner of RM 104 is visible only within the 8" band of plaster removed during the investigation. The three brick courses revealed do not show positive evidence of bonded construction. However, since the other three corners show bonded construction, and since there is evidence of continuity in all four walls, it is probable that this corner represents the original construction limit.



east wall
RM 105

68A

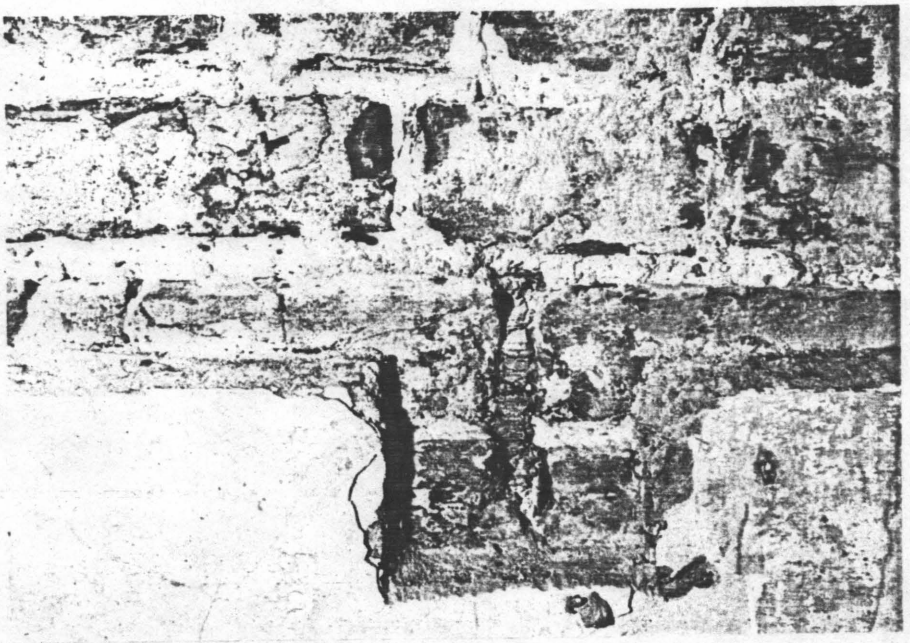
The east wall of RM 104 shows no evidence of construction joints or infilled masonry openings. The brick coursing is, however, quite irregular with no obvious bonding pattern. The lowest visible course immediately north of window W2-104 shows a row of five brick headers without mortared head joints. This wall shows no evidence of nailer blocks relating to a pre- floor reduction chair rail.



NORTH WALL ELEVATION RM 104

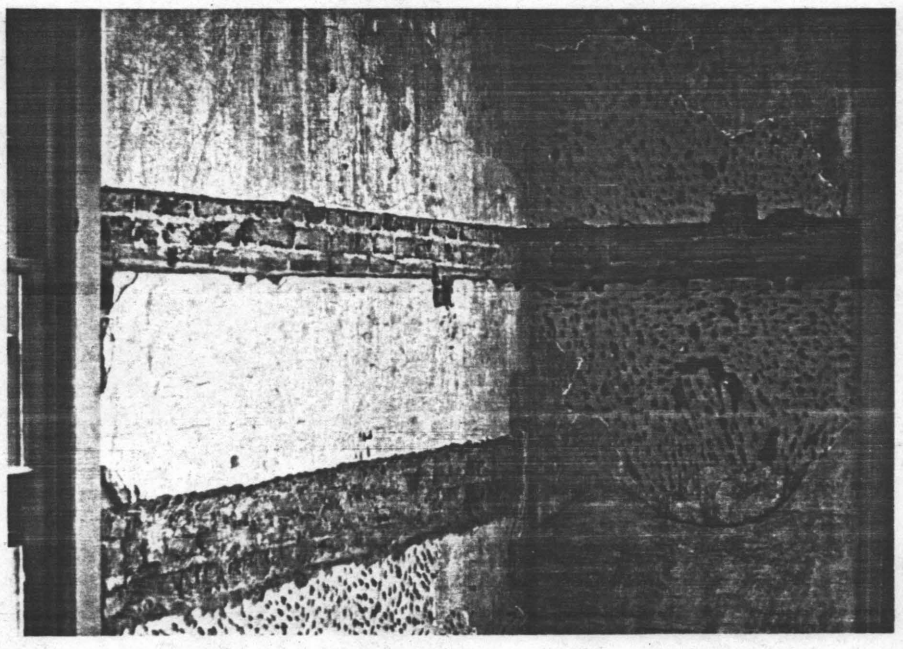
SCALE: 1/2" = 1'-0"

0 1 2 3 4 8 FEET



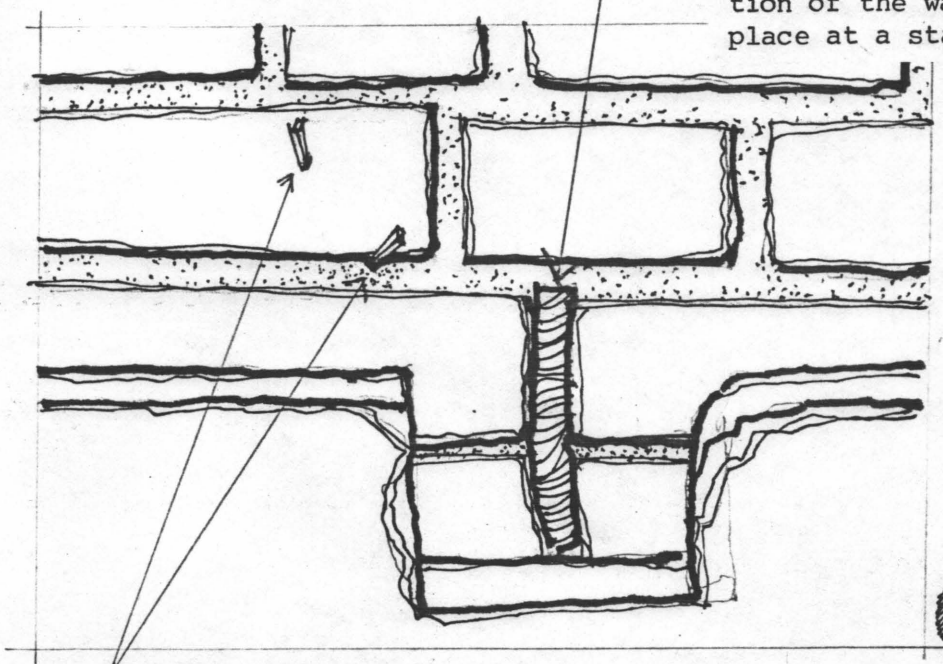
Northeast corner RM 104, detail of wood nailer block

69



Northeast corner RM 104

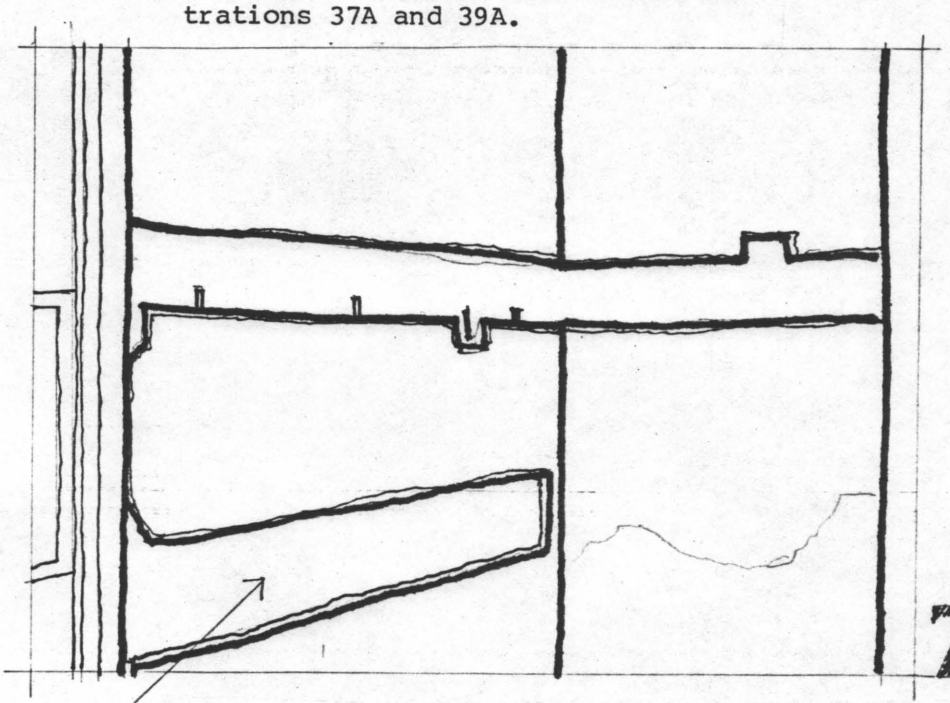
70



1/2"x4" wood nailer block at pre-floor reduction chair rail height. Note that the nailer block was not formed in place during construction of the wall but driven in place at a stacked head joint.

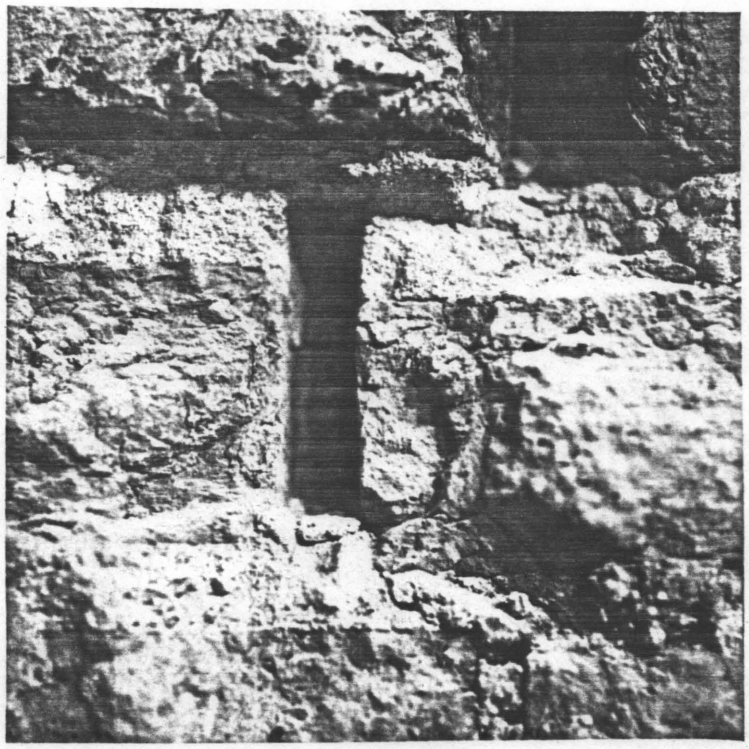
69A

Post 1835 machine made, cut nails driven into brick and mortar joint. Single series of plaster on this wall was applied over the top of these nails. See illustrations 37A and 39A.



70A

Random coursing, broken bricks, and snapped headers characterize exposed brick below a line 5'-0" above the existing floor level, indicating the level at which the original outer course of brick forming the ledge was reduced to its present chair rail height.



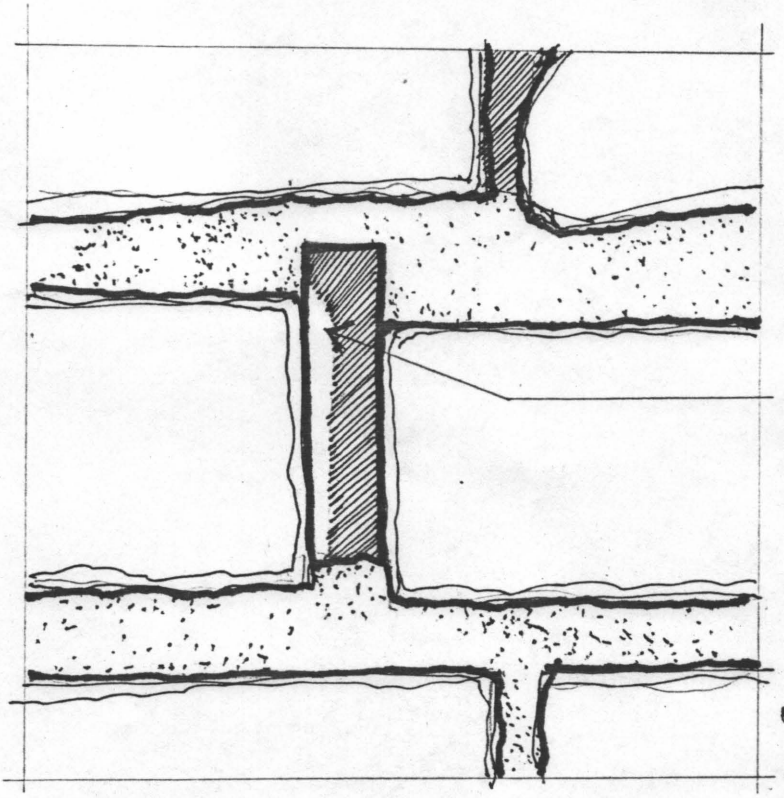
Comparative detail of formed in places wood nailer block

71



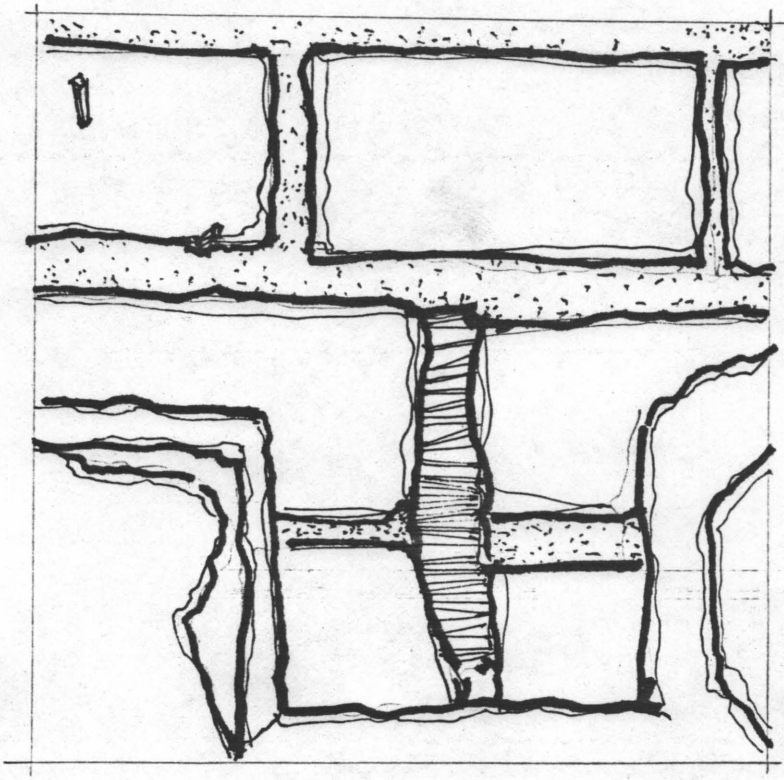
Comparative detail of wood nailer block driven into place

72



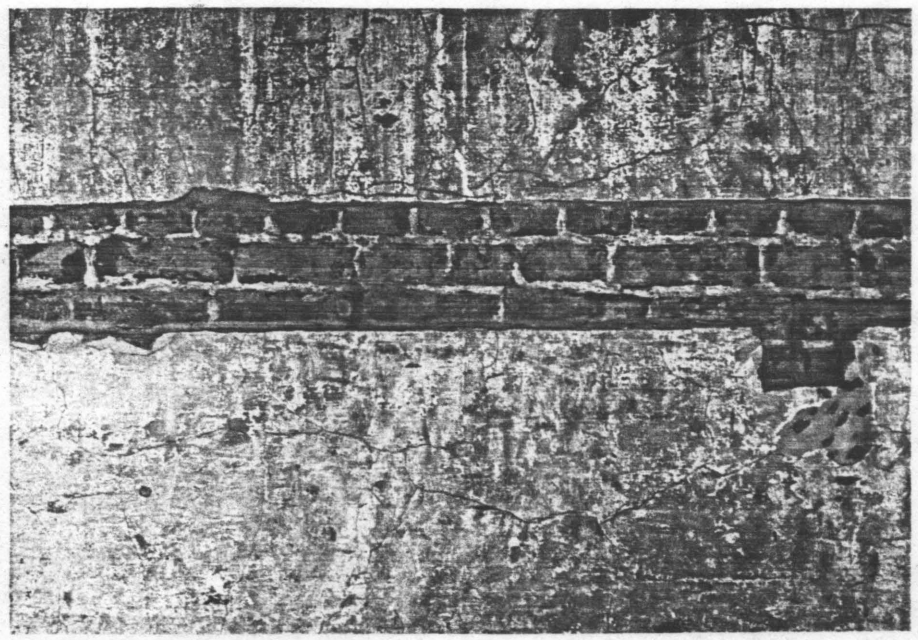
Formed opening, integral to construction of wall at pre-floor reduction chair rail height. East wall RM 106

71A



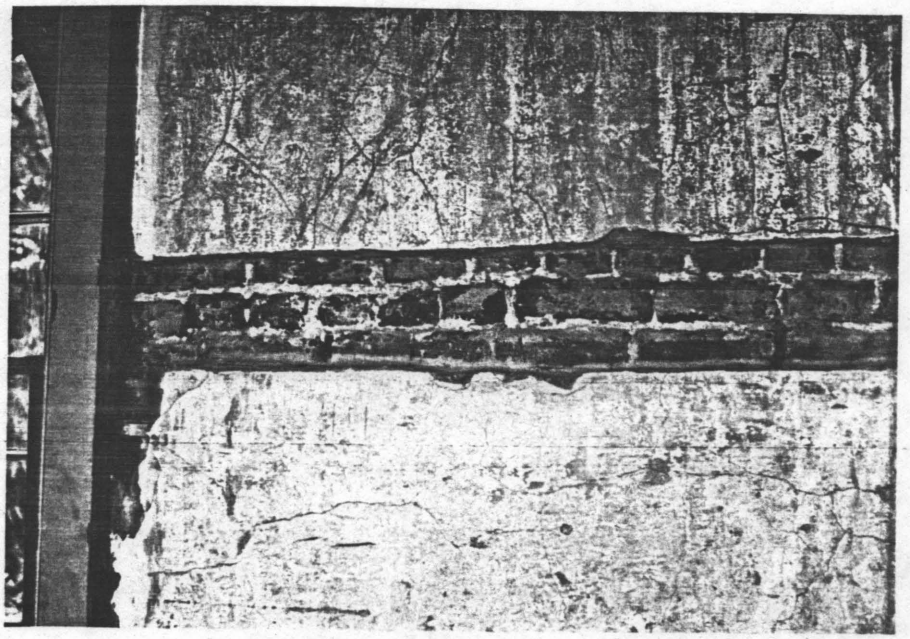
see illustration 69A

72A



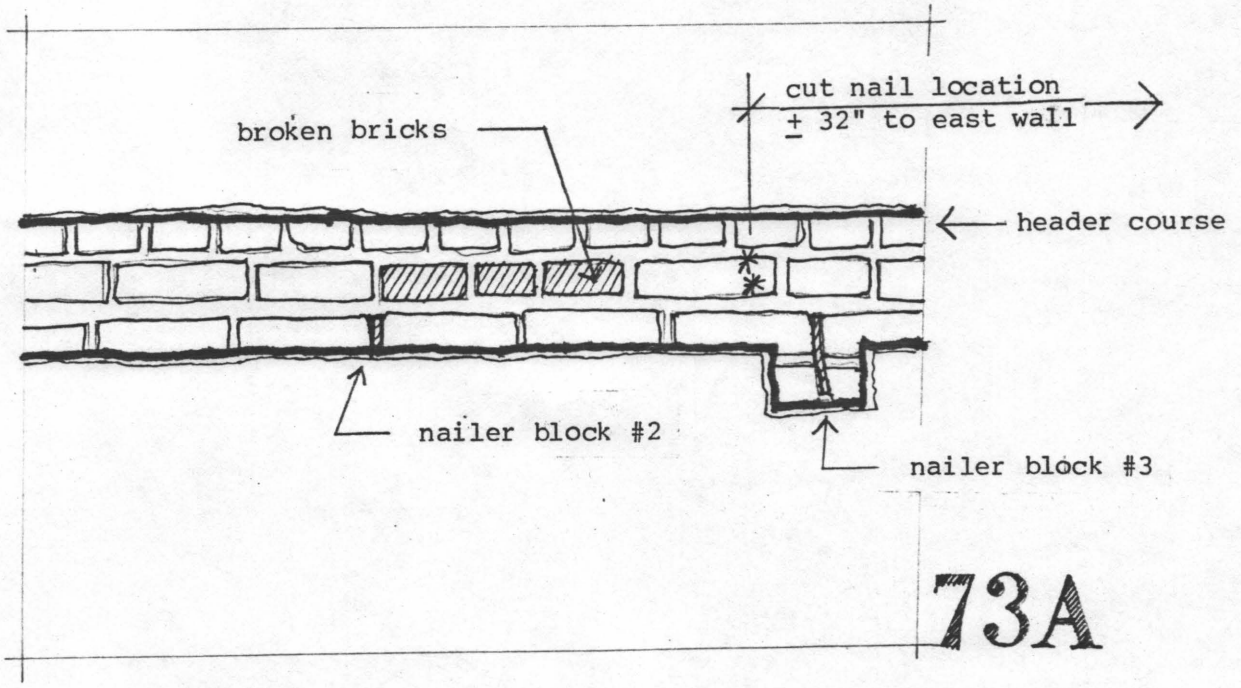
North wall RM 104

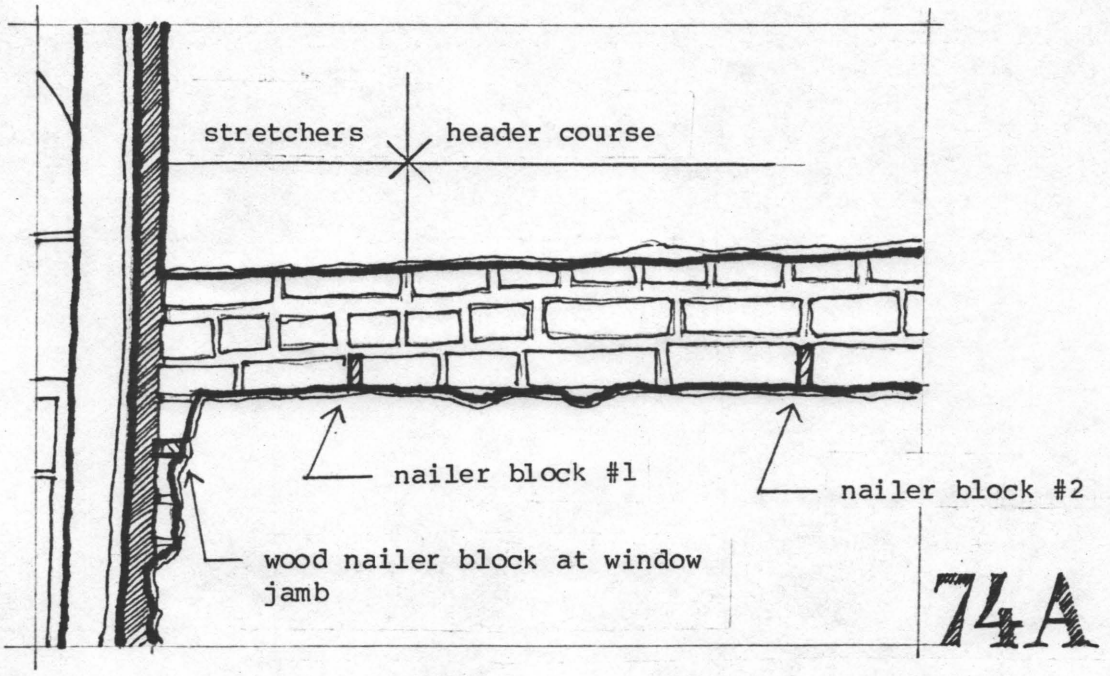
73



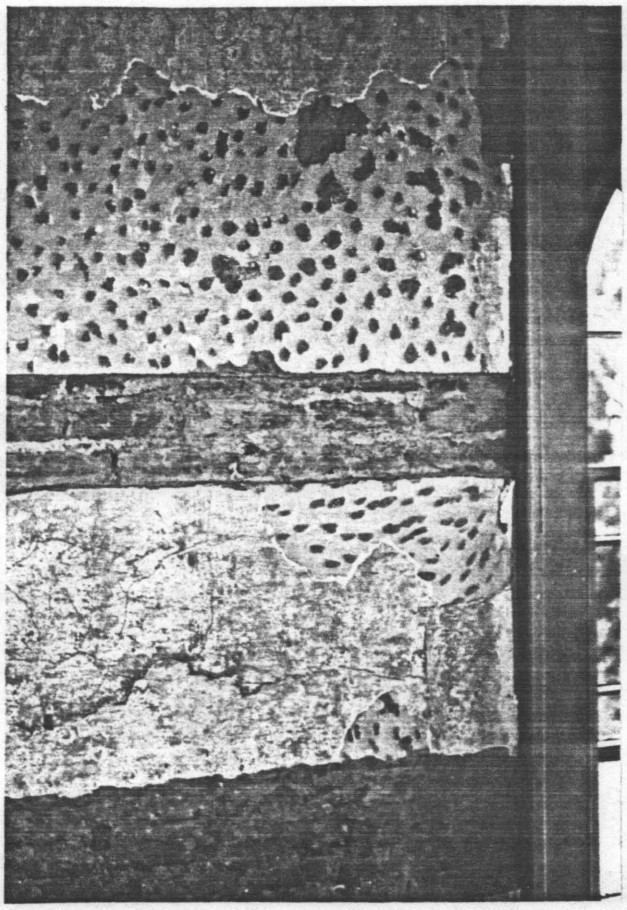
North wall RM 104,
east of window
W1-104

74



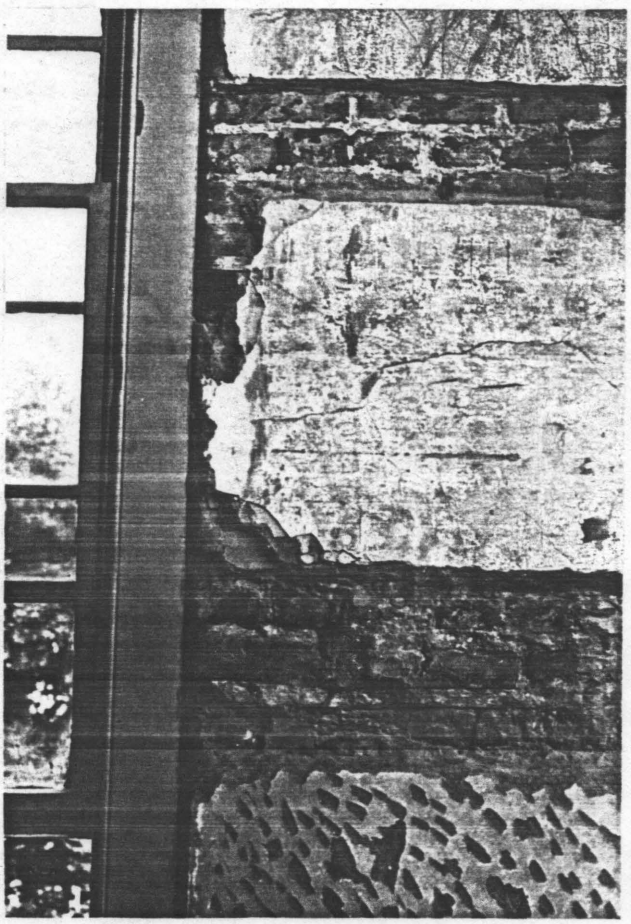


Masonry features -- Note the absence of consistant brick bonding pattern. Much of the brick appears to be reused, as evidenced by the inclusion of broken bricks. No evidence of constructed masonry openings was found.



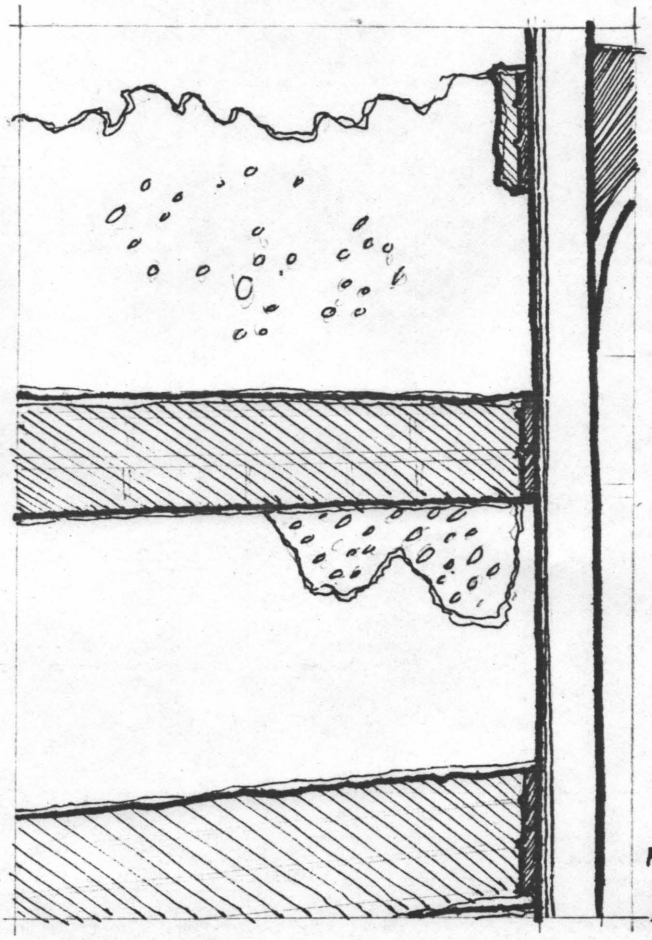
North wall RM 104,
west jamb at window
W1-104

75

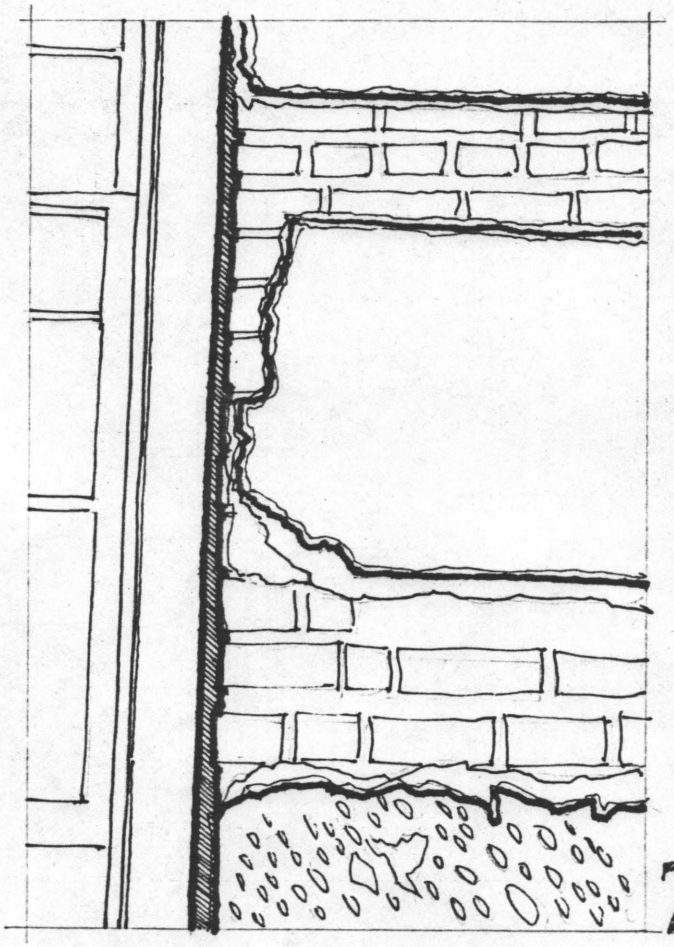


North wall RM 104,
east jamb at window
W1-104

76

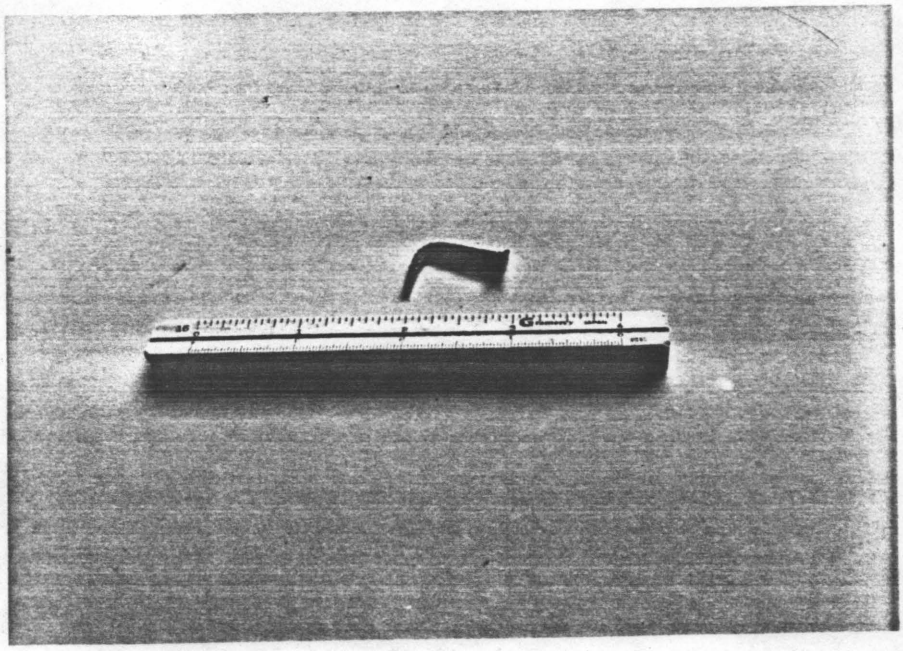


75A



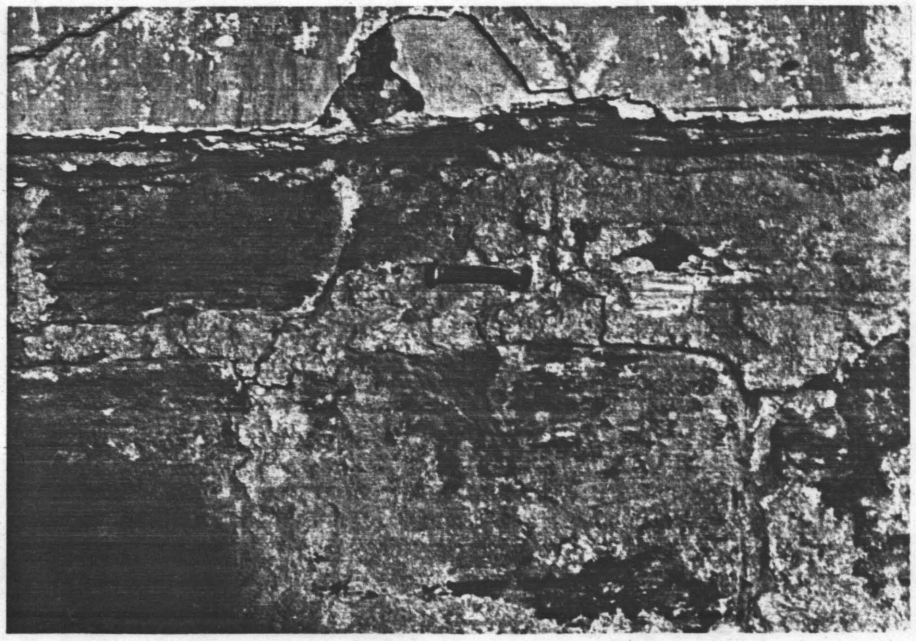
76A

The masonry opening at window W1-104 is exposed at both jambs for a considerable portion of its height. Both jambs show a flush vertical alignment of bricks. Mortar joints are formed flush at the heads of the bricks, as would be the case if the wall was constructed against a wood frame. Therefore, the masonry opening in its present dimensions is assumed to be original to construction of the wall.



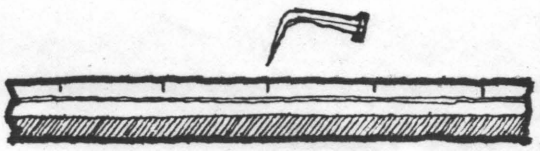
Cut nail shown in situ in photograph 78

77



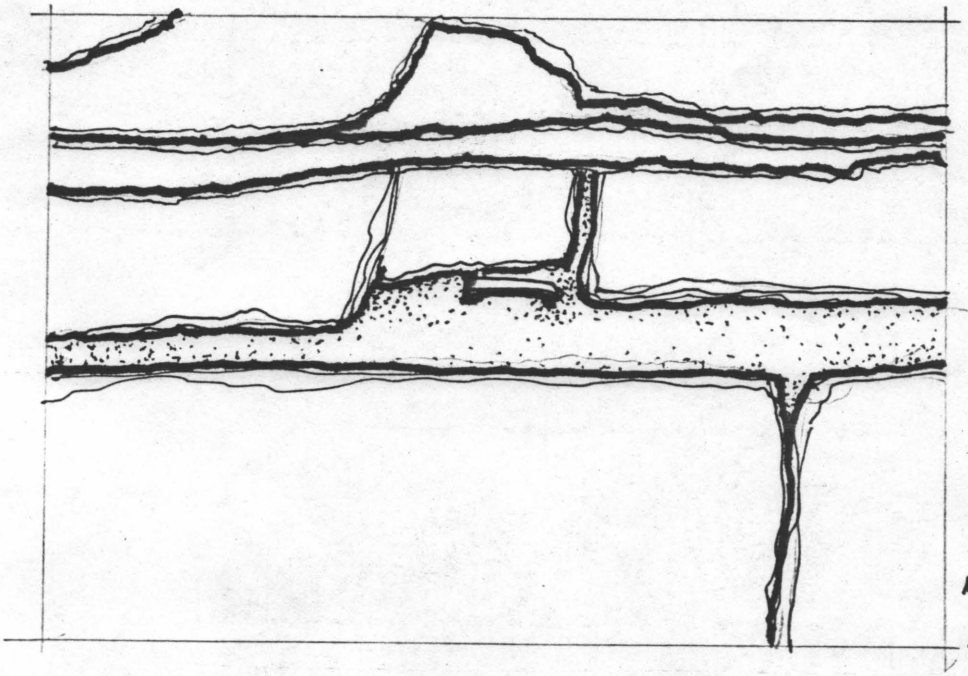
North wall RM 104, detail of machine made, cut nail found embedded in mortar joint

78



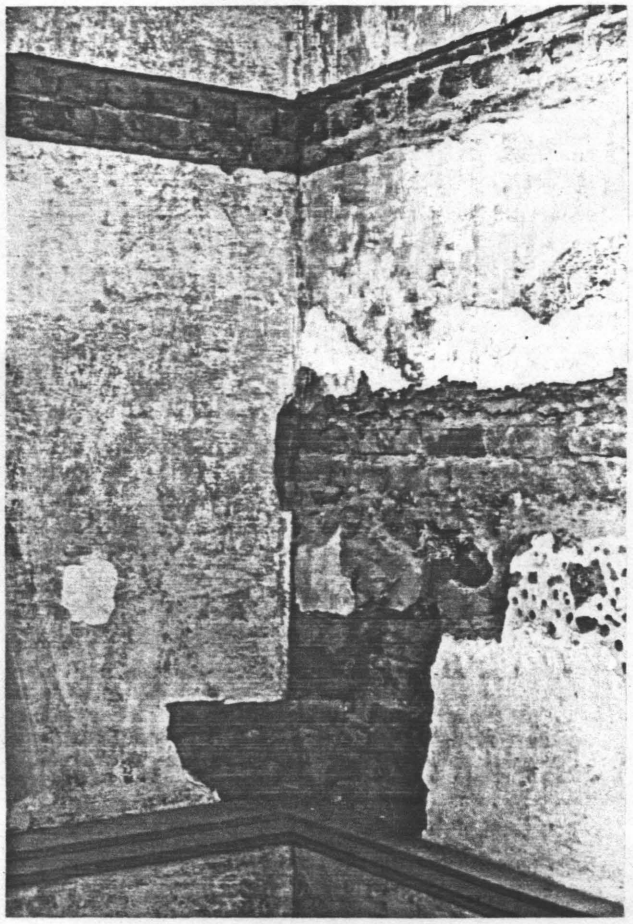
Post 1835, machine made, cut nail. This nail was found driven into a mortar joint 31" from the west wall. It was bent flush against the wall surface with no part of it projecting through the single unbroken plaster series above. Therefore, this plaster series, which represents the first extant post floor reduction finish on this wall, could not have been applied before the earliest probable date of manufacture of the nail.

77A



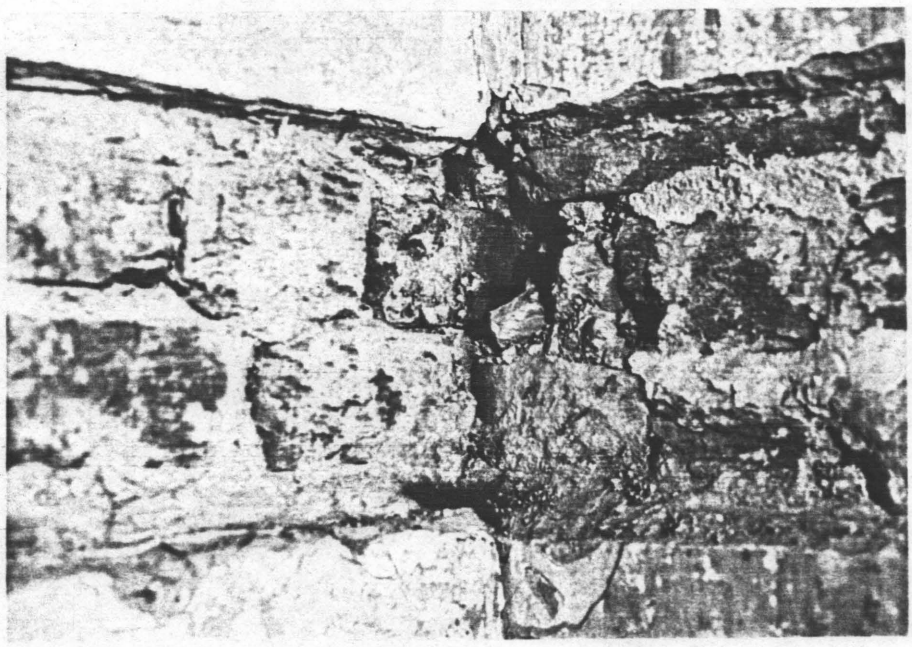
78A

The regularity of placement of identical nails on both end walls, and the presence of only one complete plaster series suggests the possibility of a previous, mechanically attached, finish material



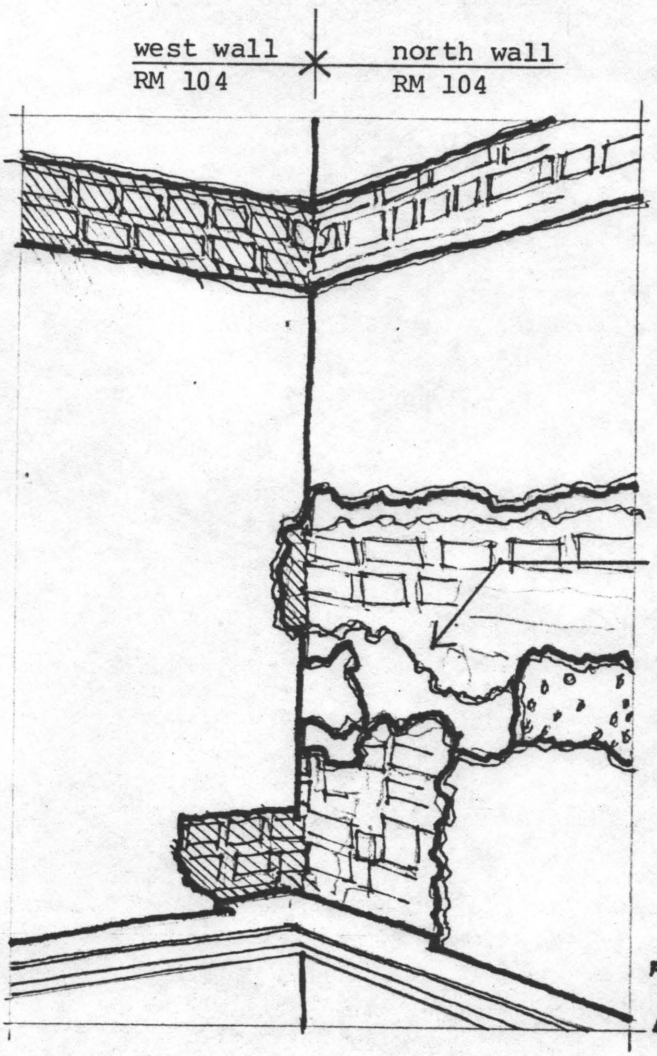
Northwest corner RM 104

79



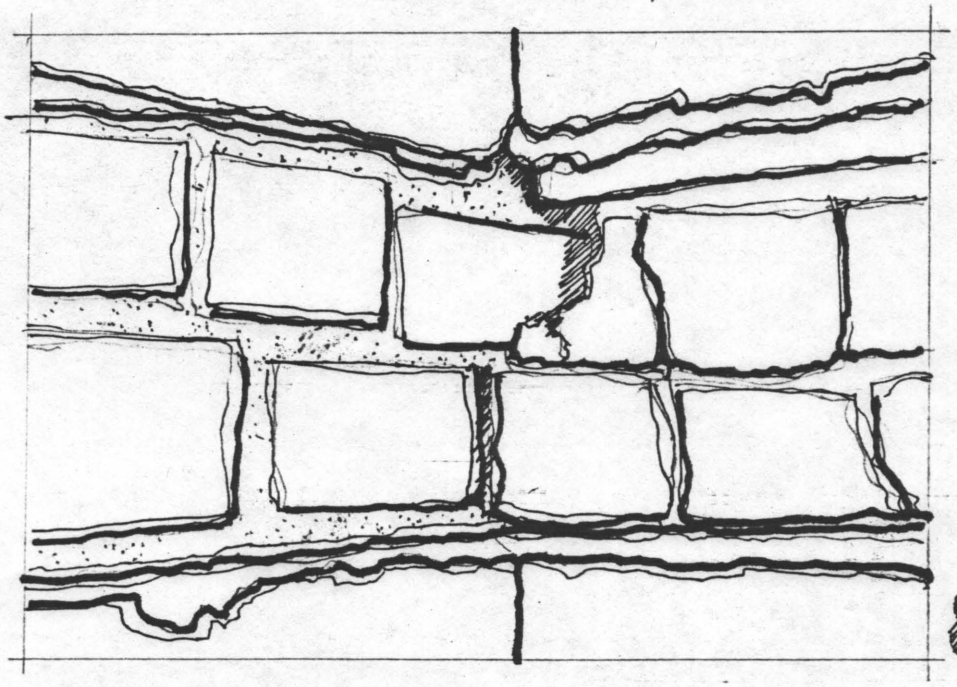
Northwest corner RM 104,
masonry detail

80



Random coursing, smapped headers, and brick rubble infill characterize the exposed masonry below a line 5"-0" above the existing floor, showing the level at which the original brick ledge was reduced to it present chair rail height.

79A



80A

North and west walls show an integral brick bond, as evidenced by half lapped brick at alternate courses.

III. SUMMARY OF FINDINGS

The evidence detailed in the preceeding section provides support for the theory that the north wing, while initially constructed as a freestanding unit, was designed as an element in a concept for the mansion as a whole. Bonded brick at three out of four perimeter wall corners and continuity in construction indicate that the shape and orientation of the existing structure is original. The window openings in the east and north walls appear to have been constructed to approximately their existing dimensions, although the first floor, at its original height, spanned the middle of the openings. Apart from the unexplained brick jambs on the east wall of Rm. 106, the absence of infilled masonry openings relating in a more conventional manner to the original floor level suggests that the north wing facade was designed to fit the formal and aesthetic requirements of the completed mansion. Of particular interest is the fact that no infilled openings were found on the west wall. The absence of any openings original to construction of this wall serves as circumstantial evidence of intent to add an additional architectural element to that elevation (i.e., The Loggia). The apparent conflict between exterior appearance and interior division of space is consistant with the assumption that G.W.P. Custis built the north wing (c. 1802) while still a bachelor, both as a residence and as a place to store his collection of Washington artifacts.[1] The extant physical evidence relating to the original interior finishes - chair rail, baseboard, and wallpaper - is diagnostic of residential use. However, based on the physical evidence suggesting that the north wing facade was intended to serve as an element in a larger design concept, it seems probable that this arrangement was regarded as an interim measure.

As finances permitted and the requirements of family life dictated, Custis continued development of the design scheme. The diary of artist William Birch recorded a visit to the Arlington House, probably in September of 1805. He noted that Custis "Had built the two wings of his Capital House."[2] Custis' daughter, Mary Ann Randolph Custis (b. 1808), related in a letter that the family lived in the two wings of the house for a number of years before the central block was completed.[3] Unfortunately, no documentary source has been located which refers to the interior arrangement of either of the wings during this period. Although the location of several pre-floor reduction partitions

has been determined from the physical evidence, there is insufficient information on which to base a complete interior plan for the earliest construction period. Also, it is probable that at least one major change in interior arrangement occurred prior to the reduction in floor height.

Although no definitive date can be assigned to the change in floor level on the basis of the available evidence, the first major traces of a post floor reduction room arrangement cannot predate the post 1835 cut nails found driven into the brick of the north and south perimeter walls. The principal extant feature of this phase is a room at the north end of the wing, approximately 15'-6" x 22'-0", characterized by the cornice and neck molding shadows presently visible in Rms. 104, 105, and 106. Again, the physical evidence is insufficient to determine the dating of this arrangement or its layout in the remainder of the wing.

The partition arrangement following this phase represents the existing condition in the north wing. There is presently no definitive means of establishing a date of construction for the existing partitions. Because the partition/perimeter wall intersections have been cut full height and patched over expanded metal lath, the continuity of partition and perimeter wall plaster series cannot be established. While it is possible that the present partition locations represent the 1861 interpretive period condition, there is no compelling evidence in support of this conclusion. The presence of post 1870 machine made lumber in door openings and the continuity of lath and plaster adjacent to these openings provides circumstantial evidence that the partitions themselves may post date the interpretive period.

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1. Charles W. Snell. Historic Structures Report, Historic Data Section, Vol. 1 (Unpublished Manuscript). March 1982. pp. 11-12.
2. IBID., p. 19
3. IBID., p. 23
4. IBID., p. 24