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HISTORIC STRUCTURES REPORT
ARCHITECTURAL DATA SECTION
ON
NARBONNE HOUSE
SALEM, MASSACHUSETTS

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for

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NARBONNE HOUSE

I. Evolution of the House as Revealed Through Structural Analysis

Abbott Lowell Cummings

In 1962 the writer prepared for the National Park Service an Historical and Architectural survey of the Narbonne House, in the course of which it was pointed out that visible evidence of structural evolution through several periods did not readily coincide with documentary evidence. For example, the inventory of the estate of the builder, Thomas Ives, in 1695, mentions a northern room with chamber, a southern room with chamber, a kitchen, a kitchen chamber, and a shop. The present gambrel ell to the south and the earlier of the two leanto additions at the rear (which might logically have included the kitchen) were not, in the writer's opinion, as early as 1695 by a fairly wide margin.

During the course of further exploration at the house by SPNEA in 1972 to determine the structural soundness of the building, additional evidence has been revealed which was not available to the writer in 1962. It must be admitted at once, however, that this evidence, by and large, only adds to the initial confusion. While some dubious issues have been resolved, the question of how the house grew during the earliest years is perhaps less reconcilable with the documents than it was before. And it is more than likely that we shall never know all of the original house have apparently been destroyed to make way for later additions. It is clear, in short, that even a virtual ripping of the house to pieces would not provide answers for all of the questions which can now be posed.

The questions group themselves as follows:

A. There is conflicting structural evidence as to how the house may have first appeared at the time of its erection, presumably in the 1670's, by Thomas Ives. For example, while the original front sill is missing at the point of its junction with the original cornerpost just at the right of the main entrance as one faces the house, the cornerpost, nevertheless, reveals clearly the remains of the tenon by which it was mortised into the sill, and this tenon is cut at the extreme southern end of the post. This construction implies that the original sill extended farther to the south, thereby suggesting an addition of some sort. However, in opening the wall which forms the present southern end of the original portion of the house, it was discovered that there are falling braces in the entry in both stories which with closely spaced studs in the same location would have very effectively blocked any entrance into a presumptive southern addition. While there was originally some space between the chimney stack and this same southern "end" wall the interval was scarcely sufficient for a circulation area through which access to rooms at the south could have been had at some midpoint in the wall. We are left with only conjecture in our attempt to visualize the original form of the house as it came from the hands of the builder and indeed, as it may have been modified by 1695. Thus, the house as originally built may have consisted of the room to the north with its chamber and attic and chimney bay and an extension to the south which had no inner connection with the house and would consequently imply some other than a purely domestic purpose. One recalls that the builder of the house, Thomas Ives, was a slaughterer. Did the house as first built have a projection to the south, unrelated to the dwelling rooms, which would have permitted him space to

carry on various aspects of his not altogether attractive business? And did he subsequently modify this first addition, converting it to a proper room and chamber with doors cut through at both levels to communicate with the hall and hall chamber of his dwelling house? If so, the openings which now exist and which cut right through braces and studs would have been made at a very early date. And in terms of still further conjecture, was this southern addition enlarged before 1695 to include a kitchen and kitchen chamber, or were these two rooms perhaps tacked on to the back of the hall and later replaced with the present leanto?

With such precise documentary evidence it is unfortunate that we may never have an answer to these questions affecting the earliest phases of the history of the house.

B. When we examine the existing gambrel-roofed southern extension we find ourselves on much firmer ground, and here it is pleasant to report that the further structural evidence, which it was hoped in 1962 might be forthcoming, has very successfully revealed the way in which this addition was made. By an inspection of the photograph (Photograph 3), it will be seen that the original sill of the earlier portion of the house (left) has been replaced with a newer stick which in turn has partially rotted out. Far more important, however, is the evidence (right) of the fact that the sill of the gambrel ell projected further to the north. This evidence and evidence to be found in the northeast corner of the ell at plate level where it can be seen that vertical boarding nailed to the frame could not possibly have been secured in place as the building now stands, furnishes conclusive proof that the ell represents the remnants of a separately framed building which has been pulled up and attached to the earlier portion of the Narbonne House. Removal of floor boards in this gambrel ell has revealed further that the first story sleepers are all reused from another structure. Some are chamfered and as a whole they are

clearly a part of a First Period building. When these members have been laid bare in their entirety it may be possible through further study to determine that they formed a part of whatever extended originally to the north as a part of this ell. If not, it is a matter of conjecture as to whether they formed a part of the presumptive southern addition of Mr. Ives' house or came from some other source altogether. The date at which this coupling of the gambrel addition with the main house took place can only be fixed approximately. The writer still believes that the gambrel ell cannot be much earlier than 1720. By this period the original Thomas Ives house had passed into the hands of the Willard family, and one is reminded of the Rev. William Bentley's diary entry of October 6, 1812, recording a conversation with some elderly women in the community, "who have passed fourscore," by which he determined that the Narbonne House was Deacon Willard's and then makes the following statement: "The old house enlarged by the son." Deacon Willard bought the house and land in 1699 for £95, just exactly the figure at which it was appraised in the 1695 inventory when it consisted of a north room and chamber, south room and chamber, kitchen and chamber, and shop. The shop, of course, may have been a separate building.

Deacon Simon Willard lived here apparently until his death in 1731. Shortly before this time, on January 6, 1729, he deeded the property to his son, Josiah Willard, who may indeed have enlarged the house by tearing down whatever existed to the south and adding the present gambrel ell sometime before this date. Josiah promptly conveyed one half of the house, the northern or older portion, to a brother, Richard, and it appears from subsequent land transactions that he lived elsewhere and rented his southern half of the

parental property. If he "enlarged" the house after his purchase in 1729 it could only have been for investment purposes. It is important to note, perhaps, that Josiah's inventory in 1731 refers to the south half of the property as that "purchased of his father," and that the north half was sold in 1757 for £60 Lawfull money while the southern half sold in 1750 for only £22 Lawfull money.

C. At the junction of the separately framed gambrel ell and the original 17th century house there survives in the leanto attic portions of the exterior boarding of the ell which runs past the cornerpost of that same ell and is secured to the cornerpost of the original house. Since the earlier portion of the present leanto overlaps this junction, and its clapboards have been cut to fit over the shingles of the gambrel roof it is clear that the leanto must have been constructed at some subsequent period in the 18th century. The southernmost and northernmost extensions of the leanto, as pointed out in 1962, were still later additions.

D. Under the heading of miscellaneous facts discovered during the course of our investigations it should be pointed out that,

1. The under side of the floorboards in the chamber of the earliest portion of the house were found to have been lathed and plastered between the joists directly upon the underside of the floorboards, a custom which is found in houses of the middle and late 17th century where some additional insulation or embellishment was desirable or could be afforded.

2. The southern or outermost surfaces of the studs and braces in the southern end wall of the chimney bay of the original house bear traces of lath and plaster and this immediately raises two interesting possibilities: either this lath and

plaster relates to wall finish of the presumptive southern ell before the present ell was added, or is the one surviving indication of the finish of these two walls after the gambrel wing had been added to the house, in which case we presuppose a wall finish which preceded the present vertical sheathing upstairs and down. It is possible that this fact can be determined upon further probing behind the existing sheathing.

3. It should be noted that the staircase in the original house, composed all of winders and primitive in appearance, must nevertheless be considered to date from the time the gambrel ell was attached or some subsequent period when the south face of the chimney was extended to provide fireplaces for the upper and lower rooms in the ell. The present stairs are related to this extension of the chimney and both upstairs and down on the south wall of the original house will be found evidence of lath and plaster on the studs facing into the entry. This evidence taken in conjunction with a 17th century doorway leading into the hall chamber would suggest that the stairs as first built were on a somewhat different plan.

In further support of the supposition that the chimney was enlarged at the time of the southern addition to provide fireplaces at once for the gambrel ell one should note the traces on the plaster face of the chimney of a painted band which followed the riser and treads of the present staircase. On the almost certain assumption that the present stairs date to the time of the enlargement of the chimney, roughly ca. 1725-35, the painted banding would tend to confirm the period for this particular decorative treatment was at its very peak during the opening decades of the 18th century and is scarcely to be found much after 1730.

4. There have been extensive modifications of the chimney and, as our report will indicate, there is settling and other decay apparent in the masonry work of the stack. Depending upon the course of action adopted to remedy the settlement it may be possible to determine further the size and character of the original openings.

5. Finally, at whatever period the doorways between the original house and present gambrel ell (both upstairs and down) were cut through, it is clear that a stud was reused to create a rising brace in the southwest front corner of the original house.

II. Survey and Recommendations Concerning Structural Conditions

Morgan W. Phillips

Introduction

This report on the physical deterioration of the Narbonne House will be divided into two major parts, the first describing the problems as they now exist, and the second suggesting remedial actions. Each of these two major parts of the report will be further subdivided into five headings which represent the five major forms of the building's structural failure, namely:

- penetration of moisture
- infestation by fungus and insects
- structural damage to the wood frame
- decay of the chimney and its foundation
- damage to exterior surface materials

A. Existing Problems

1. Moisture penetration into the wood fabric.

This problem is discussed first because it is the cause of several of the other problems described below. Moisture is gaining access to the building in the following ways.

a. Roof. The present roof covering is asphalt felt roll roofing. It is leaking in so many places in the leanto as to soak large areas of the roof boards there. Leaks specifically noted are along the joint between the leanto and the front portions of the structure; at the dormer in the leanto; and at the dormer in the eighteenth-century addition to the south.

Many of the roof boards in the leanto are soaked through, although the vast majority, if not all, are still serviceable.

b. Wetting of frame at foundation level.

In most areas around the perimeter of the house, especially around the southern half, rain water from the roof and walls is wetting the sills and other woodwork of the lower portions of the walls.

This is occurring in several ways:

-The soil level around the southern end of the house is so high that the lower parts of the sills are actually below grade along most parts of the south wall and at the south end of the east wall, (Photographs 7-11). This may be due partly to changes in the soil level, partly to original construction design, or, in the case of the east wall, perhaps also through lowering of parts of the walls over the years by rotting of sills and reconstruction at a lower level. Along the southern end of the west wall the sill rests on a very low course of small stones which in turn rest on soil, (Photographs 5, 6). The northern end of the house is raised well above grade.

-In many places the grade does not slope away from the house steeply enough to lead away readily the rain water which has run off the roof.

-The soil directly beneath the sills absorbs water and holds it long enough to aggravate the wetting problem. In the areas where the sills are not raised above grade, and where rain water saturates the soil, the sills (or their remains), and the lower portions of posts, studs, sheathing and other woodwork become extremely moist in wet weather. Along the southern portion of the east wall the wetting reaches up in this manner about 2' above the sills.

-There are no rain gutters.

-Even on the northern part of the west wall, where the sill is raised fairly well above grade on a brick foundation, roof water is moistening the sill through splashing off the paving here and/or through rising damp in the brickwork.

-Along the southern half of the east wall concrete has been poured at some previous time outside and under the sill in an effort to keep water away from the sill.

This concrete has failed to keep the sill dry. No proper flashing or other waterproofing device has been inserted at the point where the upper surface of the concrete butts against the sheathing. Also, the concrete appears to be relatively porous and probably has drawn water into the sill by capillary action.

c. Lack of adequate crawl spaces. The leanto and the eighteenth century addition to the south stand over unexcavated soil. The heavy floor joists of the southern addition rest partially on soil, and where investigations were made along the ^{east?} west wall it appeared that the leanto also lacks an adequate crawl space. The soil under the southern addition appears to be extremely sandy and rather dry. Perhaps for this reason the joists there have suffered surprisingly little, (photographs 12, 13). The very damp condition of flooring in the leanto may be due largely to the penetration of rain water into the soil and woodwork along the east wall as described above, rather than primarily due to the lack of an adequate crawl space. Thus it is possible that if this rain water were largely excluded from all foundations, the absence of a crawl space might not be inconsistent with the long term preservation of the building. On the other hand, the greater probability is that a two-foot crawl space, heated in winter and

ventilated in summer, would be beneficial. In the absence of such a crawl space, perhaps the heating of the rooms above to higher temperatures than previously would create problems through condensation between the cold soil and the flooring, or by increasing the activity of any insects and fungus in the area.

d. Air humidity throughout house. All the aforementioned sources of moisture, plus the presence of a non-breathing asphalt felt paper roof, have created a generally humid condition of the air throughout the house. With changing weather conditions there is frequent condensation on all cold surfaces. Existing louvered ventilators in cellar windows and several other windows in the house do not appear to be adequate.

2. Insect and fungus infestation. In the cellar and in the moist parts of the walls and flooring along wetted sills, large areas of woodwork are infested with a white fungus resembling Merulius lacrymans, or the true dry rot, (Photographs 7, 8). If this is indeed Merulius lacrymans, it has the capacity, once well established, to produce the moisture it needs for further growth, so that unlike most rot fungus, it cannot be arrested by merely drying out the timber. It has the capacity to spread rapidly throughout the whole building, even on materials other than wood.*

In addition, in several places around the house, there are signs of active infestation by powder post and/or porter beetles. Although this insect infestation is not especially widespread, it requires treatment.

*Principles of Modern Building, 3rd ed; London, Her Majesty's Stationery Office, 1959; Vol. 1, p. 124.

3. Structural damage to wooden frame.

a. Rotting.

Entry of water and the activity of fungus and insects have caused severe rotting as noted below.

-On the east wall the entire sill from the south end of the wall about 25' toward the north is completely rotted away, (Photographs 7, 8). Mostly as a result of this the east wall has settled and has acquired a considerable slope (pushing out at the bottom).

-Above this length of rotted sill, the south post, the studs, and the exterior sheathing boards are so badly rotted as to have lost almost all structural strength for the first 18" above the sill. The interior boarding here is also damaged by a white rot fungus, (Photographs 7, 8).

-The sill of the south wall is slightly rotted at both ends.

-The bottom of the corner post over the west end of this sill is partially rotted and, although pieced out at some previous time with new wood, now needs further repair.

-The sill of the west wall is in reasonably good condition except for a point directly under the southwest post of the original house (at the joint between the original house and the addition to the south, Photograph 2). Here the sill seems to have been the victim of both rot and inept or incomplete repairs. In any event this post is unsupported by the sill. It apparently derives some imperfect and indirect support from a number of adjacent framing members, such as the interior door frames of the house and the nearby post of the addition to the south. In any event it has probably settled and may account in part for the forward lean of the west wall of the house near the door.

-One major bridging joist of the ground floor framing is partially rotted at its west end where it rests on the cellar wall; it requires additional support.

b. Settlement of foundations (other than chimney).

-At the northeast corner of the house the low rubble foundation of the leanto is shifting and settling and needs repair and pointing, (

. It is allowing the rear leanto wall to drop and to push out at the bottom.

-The settling of the entire north wall of the house appears to have been remedied long ago, perhaps when the granite foundations were inserted. Interior plaster shows minimal cracking; nineteenth century photographs show the room distortions very much as they are now; most of the clapboards are the same ones as in nineteenth-century photographs and show no vertical distortion; at roof level the shimming done to compensate for settling of the wall appears to be an old repair.

-Likewise no evidence has been found for active settlement of the west wall of the addition to the south, where a curved or bulged appearance seems to pertain partly to the adaptation of this structure to the larger original house.

-It is hard to estimate the degree of general settling caused by frost movements in the soil. It is likely that the sandy soil drains well enough to minimize this. The introduction of more effective heating in the house will reduce it further.

4. Chimney and chimney foundation.

a. Foundation. The chimney foundation appears to consist of a west wall of rubble masonry, a north wall of rubble masonry, and an in-fill of sandy soil

and perhaps miscellaneous stones contained by these two walls. The soil core of the foundation is likely never to have been fully excavated. There are probably no excavations or stone foundations under the east and south sides of the chimney.

The weight of the chimney is borne largely by the unexcavated soil of the chimney foundation. Perhaps because this sandy soil is behaving somewhat like a fluid, it appears to have translated the vertical pressure imposed on it by the brickwork into a horizontal pressure on the foundation walls. This pressure, combined with the vertical load of the west face of the chimney, has apparently caused the west foundation wall to bulge out severely, (Photographs 23, 24). The downward movement of the west face of the chimney as a whole is indicated by the sloping of the steps in the stairways from the first to the second floor and attic: each step slopes downward considerably from the west to the east. Floors in several parts of the house also slope downward toward the chimney.

The movement of soil within the chimney foundation has allowed some parts of the chimney to drop, other than just the west wall. Settlement is readily noticed in the western half of the north first floor fireplace, which rests not over the northwest corner of the two chimney foundation walls, but over the soil contained by those walls, (Photographs 14, 15, 19, 20, 22). In the north and south rooms on both floors the hearths slope downward from front to back.

b. Chimney stack. Between grade level and the roof the chimney is made of soft underburned bricks and a clay mortar having an unusually sandy

character (Photograph 26). Because of their poor quality, and probably also because of moisture movements and other causes of deterioration, the bricks are so soft as to be easily crumbled in the hands. As a result the brickwork is being broken apart in many places by the stresses imposed by the movements of the foundation. Bricks appear to have fallen into the spaces apparently vacated by soil movements within the chimney foundation. Failure of the brickwork is most severe at the north fireplace of the first floor (Photographs 15, 21). Here the fundamental weakness of the brickwork has been compounded by the removal of the original fireplace opening, minus its lintel, is now occupied by all or portions of at least two later fireplaces, neither one of which has any proper lintel or arch to carry the weight of masonry above. Thus the original brickwork has had to support itself over the fireplace opening by forming a kind of accidental corbeled arch. The bricks and mortar are so weak and friable that they have not withstood very well the forces necessarily imposed on the elements of an arch or corbel: many bricks have fallen down from above the fireplace opening. Such weak masonry needs to be supported almost entirely from beneath, and may carry only rather evenly bedded vertical loads.

It is evident that without extensive conservation all the fractures and settlement described above will rapidly become worse until the chimney collapses or must be destroyed.

5. Decay of exterior surfaces of building.

a. The roof, as mentioned previously, needs replacement.

b. Many clapboards are split or otherwise broken on the east and south walls. Some of these

clapboards, like almost all of those on the north and west walls, are early, with beveled ends and early nails. Others are of a relatively late date, being circle-sawn, with butt ends, and secured with some wire nails and some cut nails. Even these later clapboards are probably the same ones as in the old photographs.

c. Sash and other trim. The sash and other trim items are generally in good condition, requiring ordinary repair and conservation as suggested in Part II of this report. The sash of the east wall are in the worst condition because the wall slopes and the roof water thus flows down over the sash.

B. Recommendations and Suggestions

A broad recommendation applying to all work proposed in the following sections 1 through 5 is that full photographic and written records be kept of all repairs, and that all new materials used in the repairs be permanently marked.

1. Moisture penetration into the wood fabric.

a. Roof. There are a number of alternatives in applying a new roof. If the Park Service elects to restore the house to its condition as received from the Narbonne-Hale family c. 1962, asphalt shingles and asphalt felt roll roofing may be applied so as to reproduce materials appearing in the HABS photographs taken approximately at that time.

If the Park Service chooses to apply a breathing roof, wood shingles may be applied as shown in photographs of the late nineteenth and early twentieth centuries. The photographs suggest that different areas of the house were re-roofed in wood at different times, as needed. Accordingly it appears from the photographs that there may have been some variation in the exact nature of the wood

shingling on different parts of the house at different times. For example, some shingles appear to have been thicker than shingles commonly available today, while others do not so appear. Ideally an effort could be made to reproduce shingling exactly as seen in certain of the photographs, with respect to width, butt thickness, degree of rectangularity of the shingles, wood type and grain, type of saw marks, weather, and so on. On the other hand, the application of commercially available cedar shingles would not, in the opinion of this writer, create a visual picture varying widely from the appearance of the house in old photographs. The shingles in the old photographs all appear to be sawn, and, although perhaps not rejointed and rebuted, are still rather rectangular. The wood is likely to have been cedar, and those few wood shingles remaining on the south gable end wall of the original house might suggest whether the roof shingles were more probably red or white cedar, (Photograph 1). An advantage of using red cedar in the restoration is that the white cedar commonly available in New England today generally does not have as straight a grain as the red. The inches of weather on the various parts of the roof may be reproduced as shown in any of the old photographs, and the shingles made long enough to assure at least a triple thickness at all points.

Unless the house is to be restored to its condition as of the most recent Hale family years, the S.P.N.E.A. recommends the use of Koppers fire retardant #1 red cedar shingles. Although the long-term fungicidal property of these treated shingles is perhaps subject to doubt, they do lessen the fire risk to the house itself and to neighboring buildings. It is further recommended that no

asphalt felt or other paper be used beneath these shingles, so as to maximize breathing through shingles, roof boards, and roof structure. If it is felt that this will cause an unacceptable heat loss through the roof, we recommend laying first a vapor barrier and then insulation OVER the floor boards of the main and leanto attics. These attic spaces would then be ventilated to the outdoor air so as to prevent any condensation on the undersides of the roof boards. It is imperative that the floor boards of the main attic not be disturbed, because of the historically valuable plaster immediately beneath them.

b. Alternatives concerning water entry at foundations and sills. Although past photographs of the house show no eaves gutters the Park Service may elect to dispose of rain water by this means, if necessary equipping the gutters with heating cable to control ice backup. A gutter is recommended for the rear wall since, as a result of the wall's slope, roof water flows down the clapboards.

Whether or not gutters are used, water at the foundation level must be led away from the house in some more satisfactory way. If the soil is as sandy and absorbent as it appears to be, it may be possible to install simplified waterproofing and drainage provisions which would lead rain water away from the house without large tile drainpipes, gravel backfills, or dry wells. Then again, it might be most practical to connect with the street drainage system. In any event the grade directly adjacent to the house should be adjusted so as to lead water more rapidly away from the house, although re-grading should not be so drastic as to change materially the past appearance of the house as seen in photographs. Also, it is

recommended that the grade be lowered enough so that the sills around the south end of the house stand entirely above grade by some reasonable distance. The low rubble foundations appearing in old photographs and still partially intact should be restored, either as dry walls, or with concealed mortar, or with visible mortar as thought most practical and most correct after further study of their previous condition and character. We recommend that the concrete poured around the east sill be removed, unless the house is to be preserved in exactly its condition as of c. 1962. A vapor barrier or damp-proof course should be inserted directly beneath the sills wherever the performance of repairs to the foundation or sills gives access to this point.

Since parts of the east wall of the leanto have probably settled due to rotting of the sills there, repairs to this wall may entail some jacking up of those portions to more nearly their original locations. If this is so, the sill as restored might be very slightly higher than at present, thus reducing the amount of re-grading necessary.

If no rain gutters are used, or if on further examination of soil conditions it appears that the measures described above will not keep the sills dry, the installation below grade of a poured concrete footing and foundation, appropriately waterproofed and backfilled with gravel, might be necessary to keep water out of the soil immediately beneath the house.

c. Alternatives concerning crawl spaces. If it is decided to excavate the crawl spaces, poured concrete foundations and footings reaching below frost level will be required to form stable walls. The crawl spaces should be heated in winter,

and ventilated in summer by means of the most inconspicuous type of louvers or windows in the foundation walls. Beams now resting on soil would be given support from beneath by concrete piers or additional beams.

If the crawl spaces are not excavated perhaps a vapor barrier should be laid on the soil and some unconventional measure taken, such as insulation beneath the vapor barrier, to prevent condensation on the upper surface of the vapor barrier.

d. Summary of recommendations concerning foundations, grading and crawl spaces (b and c above). Even the minimum satisfactory re-grading and repairs to the foundations will disturb archeologically important soil around the house, and the installation of utilities will disturb soil beneath the crawl spaces. For these reasons we strongly recommend that the entire site be excavated archeologically. Since archeologists routinely carry their digging all the way down to undisturbed soil, the Park Service would then be free to pour proper footings and foundations, to excavate proper crawl spaces and so on, without concern about destroying archeological evidence. The accompanying estimate from Mr. Geoffrey Moran of the Bradford Junior College faculty includes figures for archeology of the entire site in three sections: the crawl spaces, three sides of the house out to a distance of three feet from the foundation, and the remainder of the site on these three sides (Appendix A).

If no funds can be found for archeology, our recommendation is that the soil beneath the crawl spaces and surrounding the house be disturbed as little as possible. The crawl spaces would not be enlarged except where absolutely necessary for the

installation of utilities or to eliminate contact between the soil and old timbers. The rain water problem around the perimeter of the house would be handled as well as possible by gutters, minimal grading, repairs to the low dry walls, and by gutter drains running above ground, if possible, to street drains or to dry wells at a good distance from the house.

e. Climate. The cellar may require an automatic dehumidifier even if ventilated in summer and heated in winter. If needed this can be installed at any time, although if major excavation is done near the house it is suggested that a cellar drain be provided, into which the dehumidifier can empty automatically by means of a garden hose connected to the hose fitting provided on some dehumidifiers. If legal in Salem, the dehumidifier could more easily be drained into the main soil pipe of the house, which passes out of the cellar at approximately cellar floor level.

It is recommended that a hot air heating system be used since this facilitates the installation of automatic humidity controls. An automatic humidifier should be installed in the main duct to prevent excessive drying of the woodwork in the above-grade portions of the house. If possible without excessive damage to the structure, ductwork should be made large enough so as to be adapted in the future to central air conditioning. Also, a filter should be incorporated into the ductwork. Compromises in the efficiency of the heating system will probably be necessary to prevent undue proliferation of ducts: for example, the front stairs will probably have to serve as a hot air duct or cold air return.

As discussed in B., 1., a., above, it is suggested that to assure maximum breathing, no insulation, and no tar paper or other vapor-impermeable material, be used in walls or roof. Ordinary kraft paper may be used behind clapboards merely to block the wind.

2. Insect and fungus infestation. Treatment of the rather widespread fungus infestation in the ground floor structure will require complete opening of the floors over unexcavated ground. The most thorough approach recommended by some authorities for treatment of dry rot infestation entails cutting away of all infested wood. Since this might involve a significant loss of woodwork from the building, this writer entertains the hope that much infested wood may be left in the building and thoroughly toxicized. This could be determined only on opening the floors and attempting maximum penetration with fungicides.

Timber not now infested but near the ground should be treated as a precaution against infestation, as also should be any new timber installed in the course of repairs. New timber should be thoroughly seasoned or dried to assist penetration of the fungicides and to preclude fungal growth due to moisture in the new wood.

If the crawl spaces are not deepened all soil and stone foundations in the unexcavated areas under the house should be sprayed with fungicide.

Although fungicide may be chosen which will also kill powder post and porter beetles; it may be more effective and economical to fumigate for the control of insects, since spraying would require opening areas of the house not required to be opened for control of fungus. It is recommended that the soil beneath the house be treated for termites as a precaution against future termite infestation.

3. Repairs to wood frame.

a. Sills. Some parts of the sills, especially along the east wall, will require complete replacement. Other portions, being only partly rotted, should be pieced-in with new wood, preserving, for historical reasons, as much of the old as possible. Where the outer face of a sill is rotted and the inner face solid, a cut should be made parallel to the grain of the wood so as to remove badly rotted wood along more or less rectangular lines, facilitating the insertion of new wood.

The small missing portion of the west sill, directly under the southwest post of the original house, should be filled in with a hollow block of wood inserted in sections so as not to require the cutting away of any old wood, (Drawing No. 4). The loss of any old wood here would lead to the destruction of architectural evidence relating to the enlargement of the house to the south. The post above this point should be jacked up just enough to relieve the undue strain it is now placing on the other framing members and trim which support it.

DWG. NOT IN
THIS REPORT.

JB

b. Posts. Major posts, where rotted, should be pieced out at the bottom in the same way as the sills.

c. Studs. Rotted studs may be toxicized, left in place, and their structural function assumed by new studs placed adjacent to them. This is needed primarily on the east (leanto) wall, where new studs would reach from the sill to the plate. Since this rear wall has settled and leaned considerably over the years, primarily due to rotted sills, the wall should be jacked up just enough so that the leanto rafters and leanto attic floor joists will no longer tend to pull away from the front portion of the house.

d. Other framing members. It appears that minor repairs are needed to other framing members, such as the provision of floor jacks under the west end of the bridging joist in the cellar. One common rafter is cracked and needs a simple reinforcement.

4. Chimney and chimney foundation. The Society's first attempt to find a structural solution for the chimney was to engage a local consulting engineer. His analysis of the chimney foundation as a continuous mass of rubble masonry does not appear to be correct. More importantly, this writer feels that his structural solution for the support of the brick chimney stack by steel beams is probably unfeasible. The writer then arranged for a day's visit by Mr. Louis Dugas, Chief Restoration Engineer of the Technical Services Branch of the Canadian Department of Indian and Northern Affairs. Mr. Dugas had spoken at A.P.T. concerning the consolidation by cement grouting of the Quebec City walls, and is familiar with the most advanced methods of masonry conservation being developed and used on old buildings in Canada. His general approach and his specific suggestions and opinions seem entirely sensible to this writer. His mimeographed notes to Mr. Olsen, General Superintendent of the Boston Group, are appended and contain his major recommendations, (Appendix B). Below are condensed his further suggestions and a rough chronological program of repair, as interpreted by this writer from the on-site discussion with Mr. Dugas and from ensuing correspondence.

-To support the brick chimney stack by three steel beams as proposed by the local consulting engineer would entail two difficulties which possibly would not be overcome. The first would be that of getting the steel beams into place: as soon as a hole was drilled beneath the base of the brick chimney stack the powdery brickwork would be likely to collapse into the hole before

the beam could be inserted. Secondly, the lack of internal cohesiveness of the mass of bricks might preclude the use of any system of underpinning which does not give even support to the entire base of the mass. Before steel beams could be used, it would have to be determined that there were certain cohesive portions of the brickwork which, if supported locally by steel beams, would hold up adjacent masonry between the beams.

-Cement grouting of the foundations or brickwork is not likely to be a useful expedient for the chimney as a whole because the soil of the foundation and the earth content of the mortar above would interfere with the setting of the grout.

-Repointing the brick chimney stack with a strong mortar would probably add no strength to the chimney because the bond with such crumbly bricks could never be made stronger than the bricks. Also, the introduction of a strong mortar into much weaker brickwork would bring with it all the well-known problems of dissimilar and conflicting forces and movements.

-Mr. Dugas emphasized repeatedly that although there was a good prospect of being able to stabilize the chimney, there was also a chance that it would collapse during the repairs. He wished to make sure we understood the uncertain and experimental nature of his suggestions, as well as the unknown problems which the chimney may contain.

-The first step in a program of repairs would be the installation of temporary padded wooden braces to prevent outward collapse of the two chimney foundation walls.

-The second step would be a temporary girdle around the brick chimney stack constructed in stages from the grade level upwards as follows: A framed plywood box would be built around the chimney deriving support where possible from the adjacent framing

IMPORTANT

JBL



members. The voids would then be filled by expanding structural foam. The purpose of this foam-filled girdle would be to hold the brickwork together, as a unit, while repairs were being made first to the foundations and then to the brickwork itself. Polyethylene sheets or similar material could be used to prevent the foam from adhering to the masonry. The box would have to be constructed in such a way as to permit its being opened later a slice at a time to repair the chimney itself, one narrow section after the other, while the rest of the box holds the other sections together. At ground floor level the north fireplace and flues (Photograph 21) should probably be filled by the foam so as to provide internal as well as external support during repairs.

-If it is decided to remove and rebuild the part of the chimney above the roof line, these courses of brick should be removed as the next step during the repairs to lighten the vertical load temporarily. It would be the hope of the S.P.N.E.A. that such rebuilding would not be necessary.

-The next phase would be consolidation of the foundation by soil-hardening chemicals as described sequentially in portions a, b, and c of Mr. Dugas' mimeographed notes to Mr. Olsen, (Appendix B). He added in his other discussions, that the sandy character of the soil would probably assist penetration of the chemicals. He also recommended that the tie rods be of stainless steel.

-After consolidation of the foundation the repairs to the chimney stack itself would be made from ground level up. Foam would be cut away in sections probably beginning with the north first floor fireplace (Photograph 21). Here, working inward from the two side piers

or jambs of the fireplace, one would make relatively conventional masonry repairs with those important differences which would make the final result a historically sensitive repair or restoration. Perhaps some kind of lintel would be needed. The S.P.N.E.A. recommends strongly that the later inserted fireplaces be retained and repaired. It is important that the research and design process for the repairs at this fireplace location be carried out before the insertion of the foam, since the foam will cover the historical evidence and structural conditions which will determine the design of the repairs.

-To give strength against inward collapse of the flues, they might all be filled permanently with expanded foam, although this entails some risk that the foam might be tedious to remove in the future. If any of the flues are to be used, Mr. Dugas proposed that a stainless steel liner would be inserted, with joints designed to prevent thermal expansion stresses on the brickwork. The small space between liner and bricks could be filled with clay mortar comparable to the original (minus straw, etc.). He suggested that the added dampness of the new mortar would probably make the old masonry swell a bit, and that a slow drying process would bind the whole thing together as a mass. If no flues are to be used, other provisions should be made in the warm air heating system of the house for circulation of warm air against the exterior of the chimney stack to prevent damp cellar air from flowing up around the stack and keeping the bricks too moist. Drying of the chimney must be done very slowly to prevent cracking through too rapid moisture movements.

-The final step would be permanent containment of the other movements of the brickwork, by a combination of such methods as the following:

Stainless steel tie rods may be passed through the chimney by drilling holes for them with a hollow tube drill having an interior diameter large enough to accept the tie rod.

Stainless steel straps may be formed around parts of the chimney, at vertical intervals of 3' if necessary.

The same soil-consolidating chemicals suggested in Mr. Dugas' notes to Mr. Olsen may possibly be of use in stabilizing the crumbly earth mortar or bricks. The manufacturer would have to be consulted on this. The purpose would be as much to prevent the sandy mortar from flowing out of the joints as to give the mortar structural strength. It is probably strong enough to do its job as long as it stays in place.

Summary of recommendations for chimney. It is the firm recommendation of the S.P.N.E.A. that an attempt be made to consolidate and preserve the chimney including its later fireplaces, panelling and trim. Its architectural importance alone justifies a considerable expense, and the results of the use of unusual methods of conservation would be of great interest to professionals in this field.

5. Repairs to exterior covering.

a. Roof. As discussed under B., 1., a., above, the roof needs replacement. It may be added here that if a wood shingle roof is used, special care should be taken in the leanto to nail roof boards tightly against the purlins, since the boards are vertical here and any movement may crack shingles at the joints between the boards. If it is found that the boards or the upper surfaces of the purlins are too badly softened to hold nails well, the Society would recommend an expedient it has used on one of its own houses. Rather than destroy old

boards and purlins, we have strapped the roof horizontally over the boards before applying the wood shingles. For each course of shingles there is one lath, tapered down at the edges of the roof.

b. Sheathing and clapboards. Considerable amounts of sheathing along the east wall will require replacement. Clapboards on the north and west walls require little treatment. Along the east and south walls most of the clapboards can and should be saved by a combination of methods. The clapboards should be removed, back-primed with paint, and the wall made tight by the application of flashing behind cracked clapboards. Badly broken clapboards can be strengthened with fiberglass on their backs. Clapboards beyond repair should be replaced in kind. Even the relatively recent clapboards appear to be sawn more or less radially out of the tree, so that similar edge-grain clapboards should be used in restoration. Radial-sawn clapboards are available from Ward Properties, Box 506, Moretown, Vermont, 05660.

c. Sash. The sash require the usual conservation measures:

- regluing of some joints
- removal of loose putty
- removal of loose paint, interior and exterior, WITHOUT SCRATCHING THE GLASS.
- toxicizing of rotted areas
- sealing of all bare wood, interior and exterior, with oil-based primer.
- renewal of putty in front of glass and behind glass
- painting

d. Other trim. A few other items of trim require toxicizing of partially rotted wood and in some cases a little piecing out with new wood. The east and west doors, and their frames, require this sort of conservation at their bottoms, the west door being the same one as appears in old photographs. The bulkhead needs fairly extensive repair with new wood.

III. Adaptive Interior Rehabilitation

George L. Wrenn III

A. Use as a Modern Residence

The Narbonne House consists of seven rooms of which five are on the first floor and two on the second floor. This number of rooms will permit the satisfactory conversion of the house into a residence for a small family. The layout of the rooms is such that there will be a certain awkwardness in the living arrangements, but it has been the experience of this Society that people readily adjust to the inconvenience inherent in modern adaptations of historic houses for the sake of living in those houses. The awkwardness, of course, springs from the fitting of modern kitchen and bathroom into the spaces available which were not planned for those purposes.

In the case of the Narbonne House a small but adequate kitchen can quite easily and conveniently be fitted into the leanto room in the southeast corner on the first floor of the house (Drawing No. 2). The bathroom will fit very well in the somewhat smaller leanto room in the northeast corner on the first floor (Drawing No. 2). (We recommend closing off the exterior door in this room.) Here the inconvenience is obvious: the bedrooms are upstairs (Drawing No. 3); the bathroom is downstairs. The alternatives for installing a bathroom, dividing one of the chambers or adding a second story to a portion of the leanto, are thoroughly unsatisfactory from a preservation point of view. An ameliorating factor is that the back staircase is readily accessible from the larger north chamber and leads directly to the entrance of the bathroom. From the south chamber one would have to use the front stairs. The use of the three remaining rooms, the north

and south rooms of the main house and the central room in the leanto, would be chosen by the tenants. The larger north room might be the living room, the south room the dining room and the space in the leanto merely passage (Drawing No. 2). Alternately, the leanto space might be used for dining and one of the larger rooms used as a study or a guest room.

It does not seem feasible in view of the plan of the house that any particular room or rooms in it be set aside as museum rooms to be open to the public. However, in view of the age and interest of the house it might be possible to have all or part of the house open at certain times so that visitors could see its ancient architectural features and learn of its history within the context of its adaptation to modern living. In view of the great numbers of historic houses being restored it might be more educational for the public to see such an adaptation done well than to see another house museum. This Society has successfully shown its Cooper-Frost-Austin House in Cambridge, Massachusetts, which has a very similar plan on this basis for many years.

It does not appear that the installation of utilities will pose any real problem. There is a partial basement in which the furnace and hot water heater can be installed. Since we are recommending excavation (by archeological methods if possible) under those parts of the first story where there is no basement, all the pipes, ducts and wires necessary to serve the first story can be run through the excavated areas. There are several ways in which ducts and wiring can be brought up to the second story, which, though not ideal, will not do any particular damage to the historic fabric of the house.

B. Cost Estimates for Rehabilitation

Following are very general preliminary estimates of doing the work desirable and necessary to rehabilitate the Narbonne House for use as a residence.

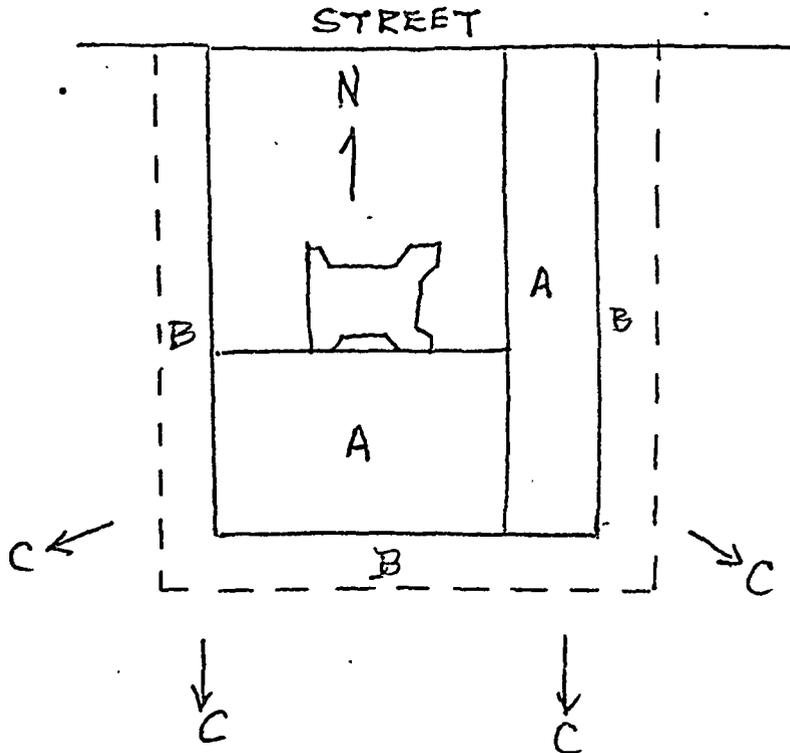
1. Archeology (Appendix A)	\$ 4,800
2. Exterior Rehabilitation	21,000
3. Interior Rehabilitation *	49,000
4. Site work	<u>2,500</u>
Total	\$77,300

* Includes an allowance of \$25,000 for work on the chimney. Actual cost could be considerably less, but in view of the unknown factors involved, it seemed best to make a substantial allowance.

Appendix A

Bradford Junior College • Bradford, Massachusetts 01830

Budget: Narbone House Excavation



- | | | |
|----|--|---------------------|
| A. | Interior Excavation: South room; Lean-to East Side | |
| | 1. excavation | \$1000 |
| | 2. Equipment (including heat) | \$300 |
| | | Subtotal \$1300 |
| B. | Exterior Excavation: limited to 30 ft. apron around foundations. | |
| | 1. Excavation (including site supervisor, trans.; misc.) ... | \$1500 |
| C. | Total exterior Excavation | \$2000 |
| | | Total <u>\$4600</u> |

Geoffrey Moran

Appendix BNotes Concerning Chimney of 17th Century
Narbonne House, Salem, Mass.

The following notes must be considered as a resumé of the discussions between Mr. George Wrenn and Mr. Morgan Phillips of S.P.N.E.A. with their staff and the writer; an officer of the U.S. National Park Service also participated but unfortunately the writer lost his name amongst his papers and he apologizes for this shortcoming.

Regardless of its history, the Narbonne House has several features to make it interesting "per se": hardware, timber frame, panelling, flooring, location of the kitchen, the very soft brick and clay mortar of the chimney ...

The main problem: the right hand stone wall at the chimney foundation has bulged by several inches as indicated in the two attached sketches; as a consequence, the chimney itself has been structurally affected by the partial failure of its foundation up to the second floor level. The structural problems have been compounded by the changes made through the years to the hearths and lower sections of the flues. However the chimney seems to have remained in fairly good condition from the second floor level up to the roof ridge.

The suggested remedy, in Mr. Olsen's letter, of simply using a cement grout to stabilize the chimney foundation does not appear quite feasible because, - as shown in the cross-section - the base of the chimney has a great percentage of its volume made up of soil which would prevent setting of the cement grout assuming that the soil could be penetrated by the grout.

The remedy recommended here is more complex and conditional upon a few simple tests; it seems that some temporary supports could be installed to prevent additional damage to the chimney while the work is being carried out at the foundation level. Mr. Phillips can describe ways and means of supporting the chimney.

- a) The soil within the chimney foundation should be stabilized by chemical grouting; the first chemicals to consider are AM-9 and Cyanaloc-62, sold this side of the border by Cyanamid of Canada Ltd.; these products are manufactured and distributed by the parent company in the U.S.A. It must be ascertained by easy testing how far the chemical penetration will reach into the soil to determine how many injection points will be needed. (It must be remembered that chemically stabilized soil should not freeze, should remain damp and that a leakage of the chemicals may affect adversely a well for drinking water.)
- b) The layer of loose rock/brick/soil near the top of the chimney foundation should then be also stabilized. Because

of the high content of soil in the layer, the grouting should be made with a chemical "paste" which will react favourably with the soil. (It seems that Cyanamid can also provide appropriate formulae but they have been very secretive about revealing their composition.) Assuming that no chemical "paste" can be found, it may be possible to try cement grout in order to fill the bigger voids but it must be remembered that the cement will set very poorly and will have very little strength.

- c) Because the stabilization of the soil may not be permanent, it is recommended that a few steel rods be driven between the stones of the foundation wall near the basement stairs clear across the full width of the house and tied to a deadman beyond the house itself if the foundation wall of chimney at the left does not prevent the operation; if the left wall is too much in the way, then a trench may have to be dug up under the "lean to" and a few holes made in the left wall to permit the rods to come out through the wall and then anchored to an anchor plate on the face of the walls.

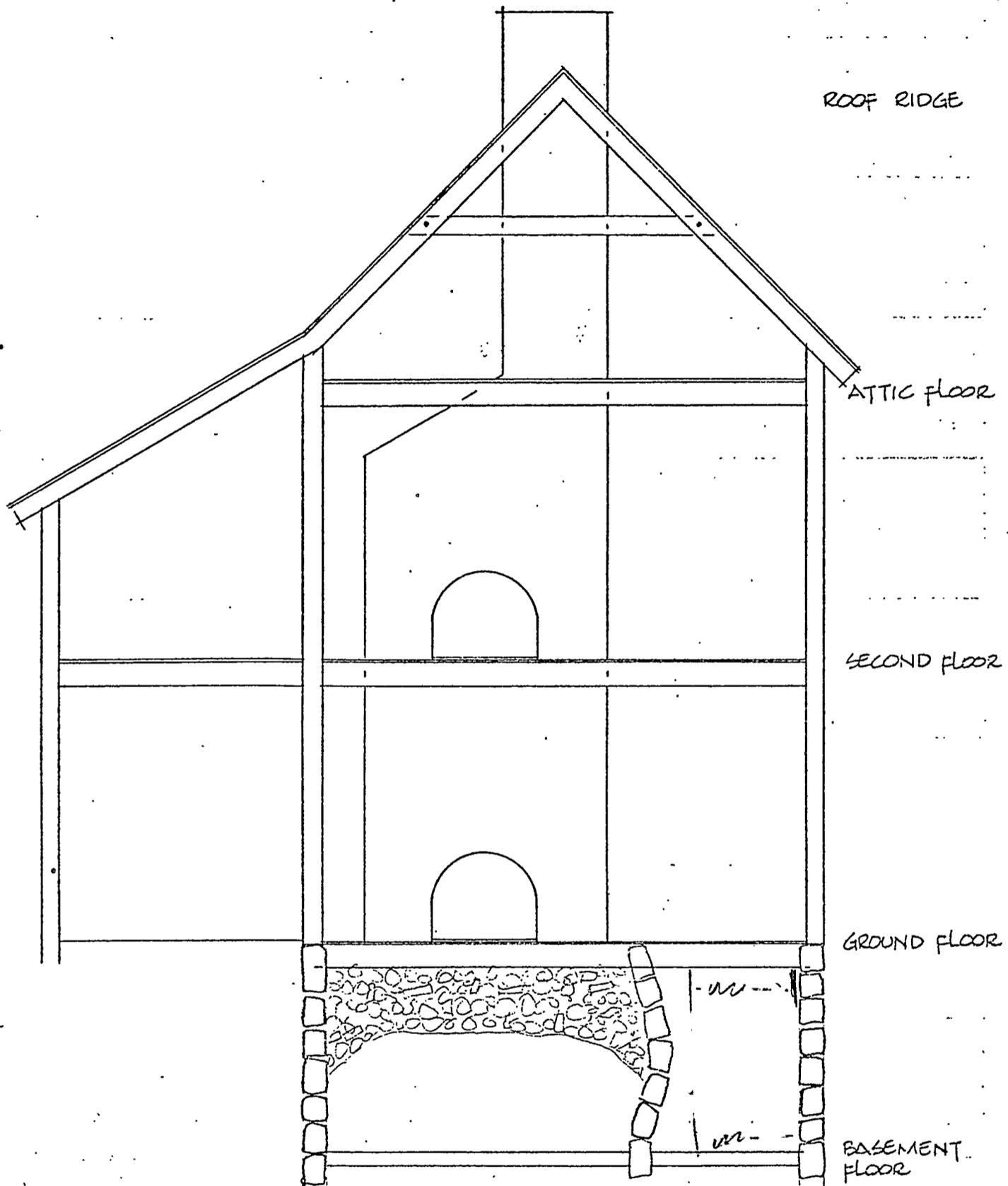
After the chimney foundation has been made structurally safe, repairs can probably be carried out on the chimney itself. There is no need to insist upon the importance of going at it slowly and of leaving most of the chimney well supported while only a small area is worked on at a time. Mr. Phillips is well aware of the difficulties and he can describe a technique or combination of techniques for that particular phase.

It is felt that the chimney and its foundation can be saved for a cost and with a lot of care; however, it must be remembered that it is a very weak structure and that it can collapse during the repairs. As a challenge, the writer would not mind attempting the job!

Ottawa, Ontario
December 6, 1972

Louis J. Dugas
Chief Restoration Engineer.

SKETCH OF 17TH CENTURY
NARBONNE HOUSE SALEM, MASS.



CROSS-SECTION AT FACE OF CHIMNEY
IN FRONT ROOM LOOKING
TOWARDS BACK ROOM.

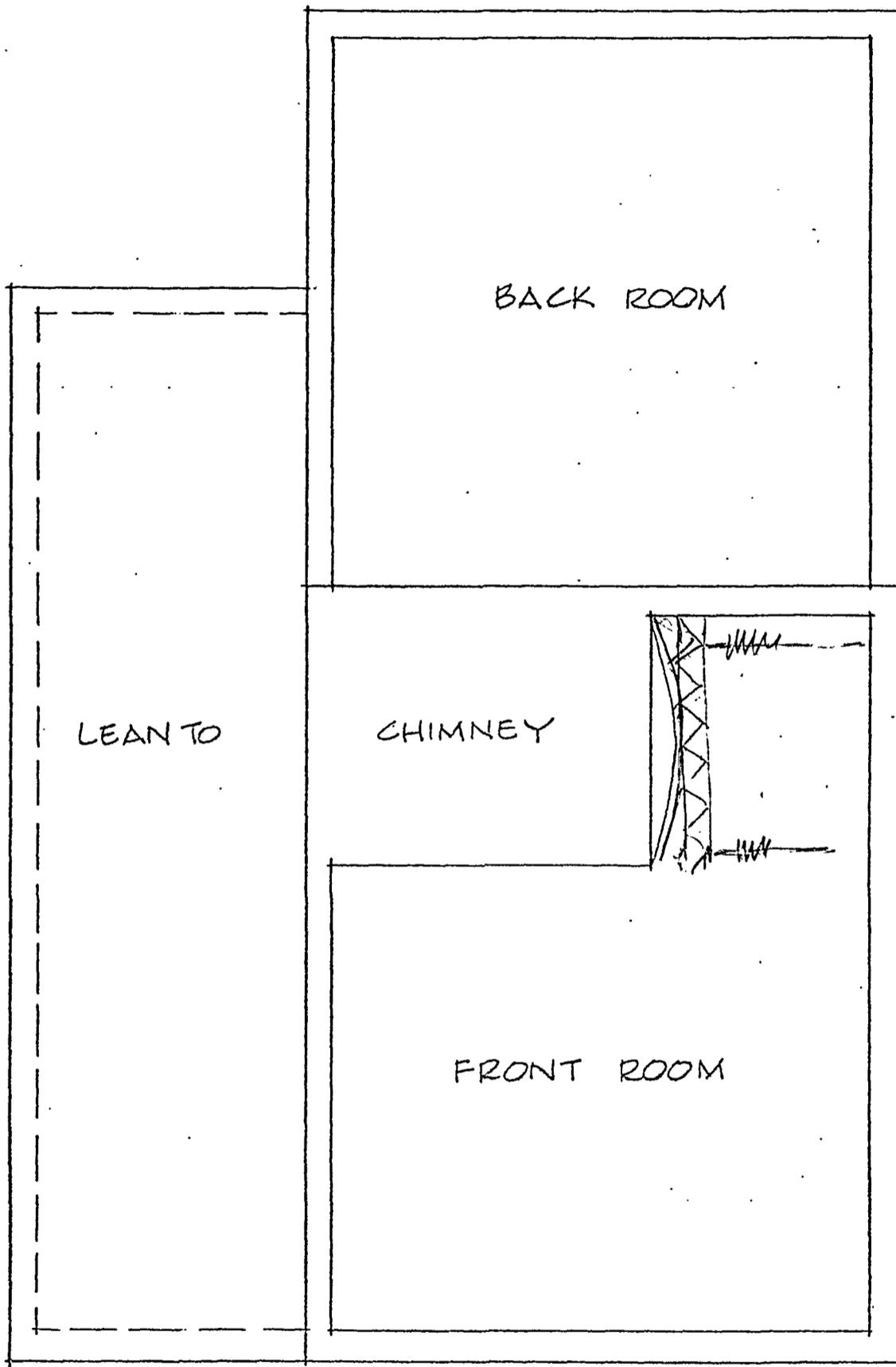
NOT TO SCALE

NOTE:

SKETCHES TRACED FROM
MEMORY OF THE HOUSE
ONLY TO INDICATE VISUALLY
THE ITEMS OF THE REPORT

G.H.L./M.
DEC. 4, 1972

SKETCH OF 17TH CENTURY
NARBONNE HOUSE SALEM, MASS.



TYPICAL FLOOR PLAN

NOT TO SCALE

G.H.L./ks.

DEC. 4, 1972



1. Narbonne House, Salem, Mass. Contemporary view of exterior from the southwest.



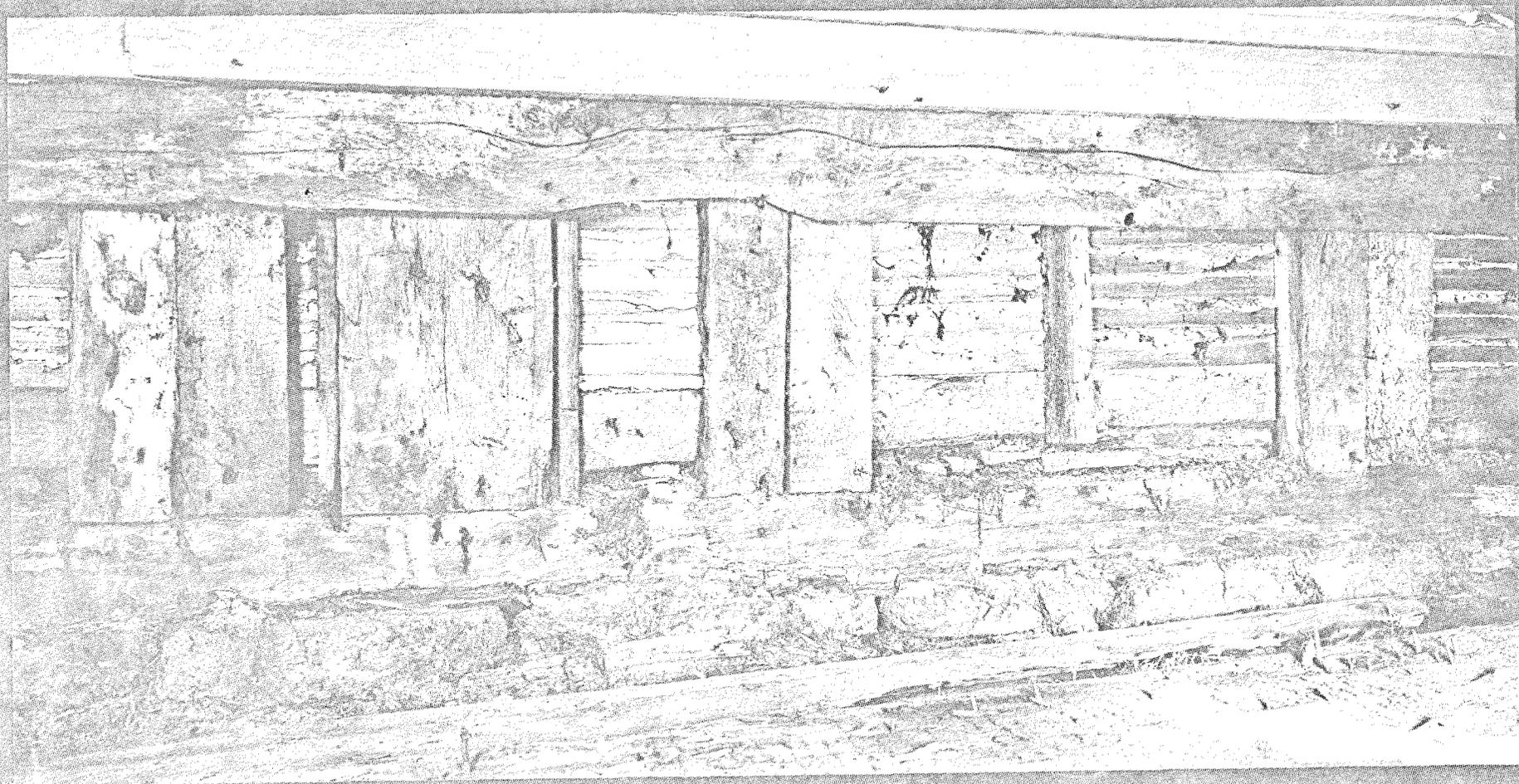
2. Narbonne House, Salem, Mass. Detail of west wall at ground level, adjacent to bulkhead with clapboards removed. Partially decayed sill rests on brick surfaced foundation.



3. Narbonne House, Salem, Mass. Detail of west wall showing unsupported post (left center) of early structure at junction with the later ell.



4. Narbonne House, Salem, Mass. Detail of west wall showing decay in sill of later ell.



5. Narbonne House, Salem, Mass. Detail of west wall showing decay in sill of later ell.



6. Narbonne House, Salem, Mass. Detail of west wall at southwest corner. Sill rests directly on a very low course of small stones which in turn rest on the soil. The end of the sill of the south wall is visible at the far right, resting on the ground.



7. Narbonne House, Salem, Mass. Detail of east wall with clapboards removed at southeast corner. Posts and studs extend below grade and sill has completely deteriorated. Representative of area along three walls recommended for archeological excavation where earth must be disturbed for work on structure and lowering of grade.



8. Narbonne House, Salem, Mass. Detail of east wall. Note the extensive deterioration due to dry rot at the lower ends of the framing members.



9. Narbonne House, Salem, Mass. Detail showing conditions along east wall.



10. Narbonne House, Salem, Mass. Detail of east wall.



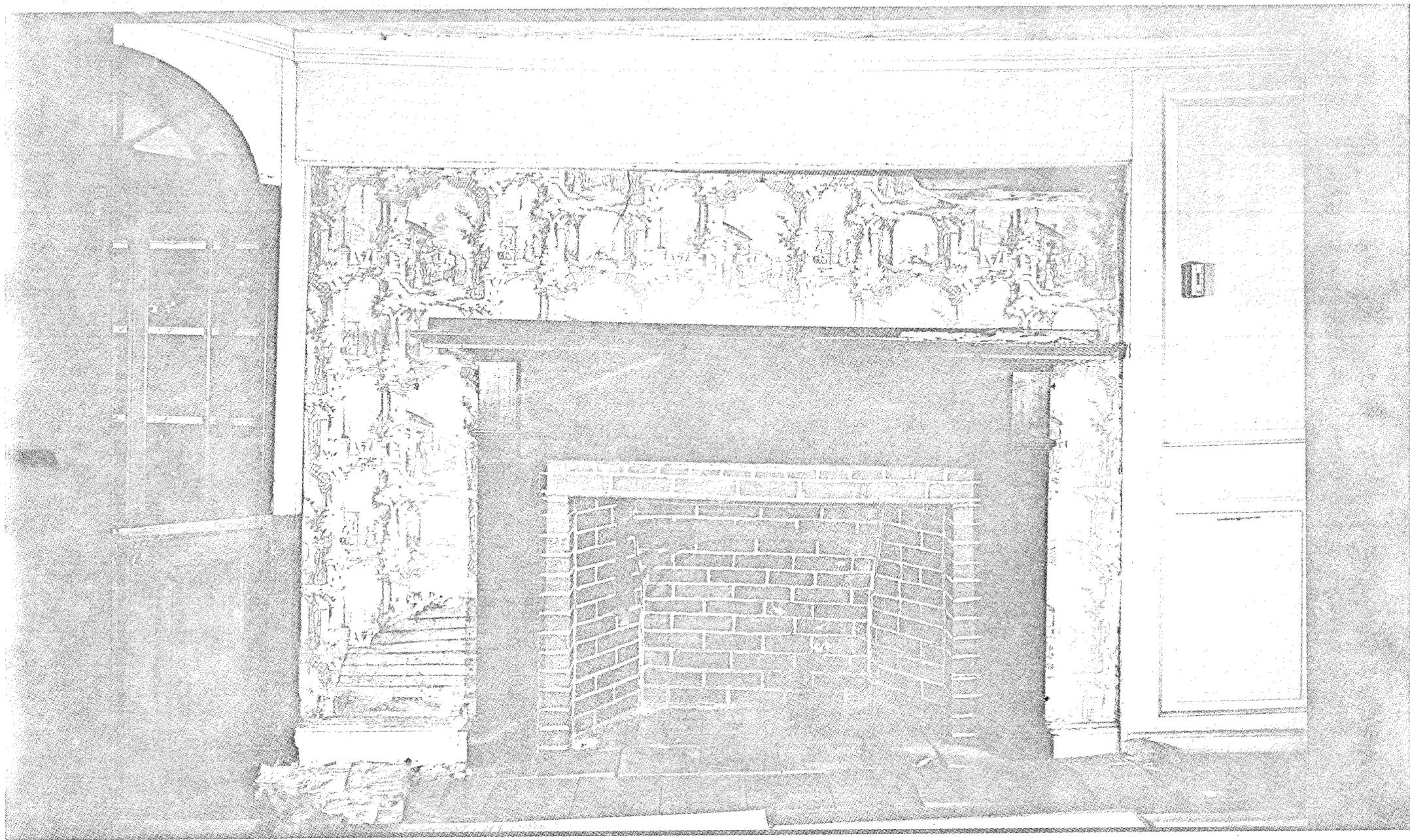
11. Narbonne House, Salem, Mass. Detail of east wall.



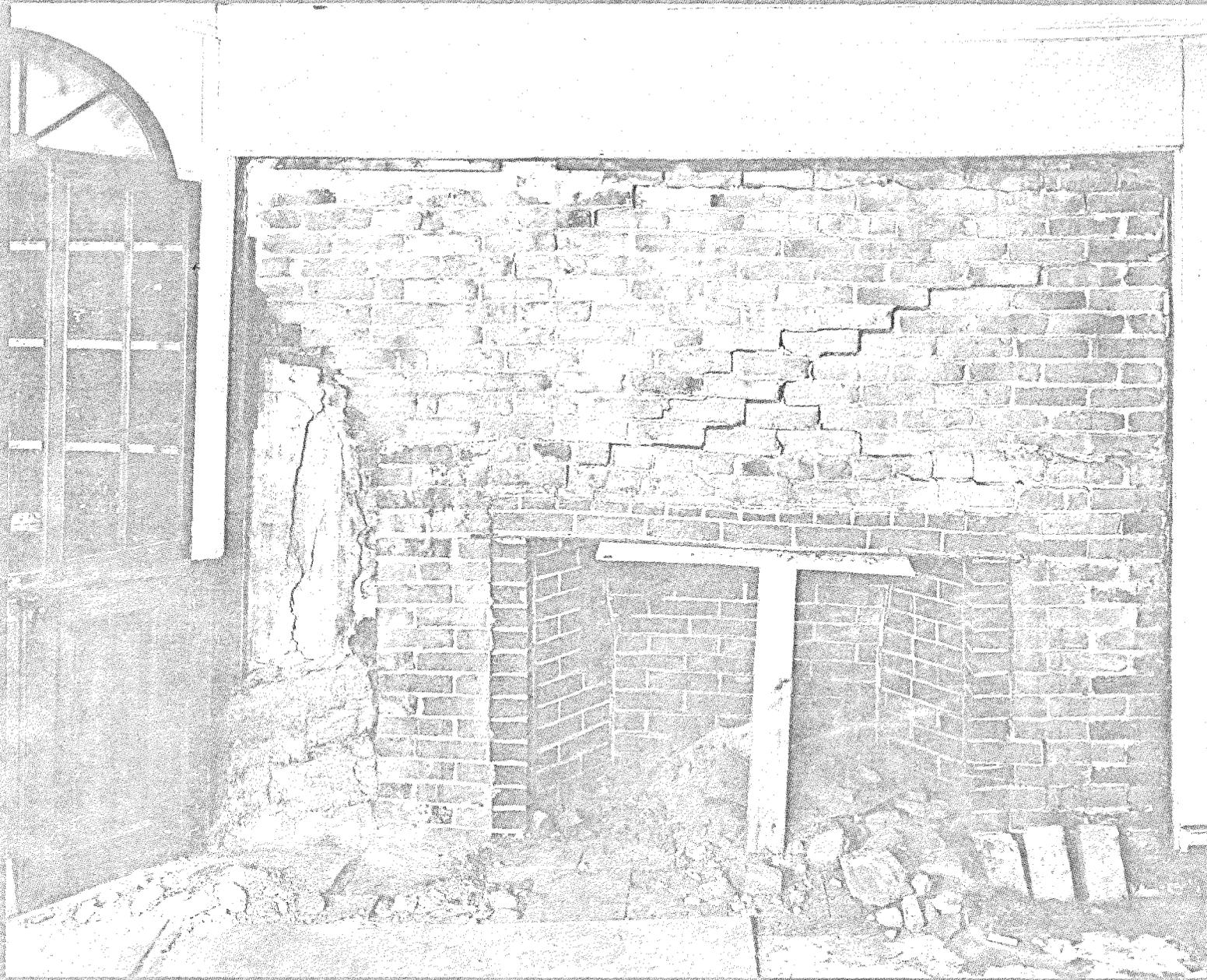
12. Narbonne House, Salem, Mass. Detail of unexcavated area beneath later ell showing the joists almost in contact with the soil. Area recommended for archeological excavation.



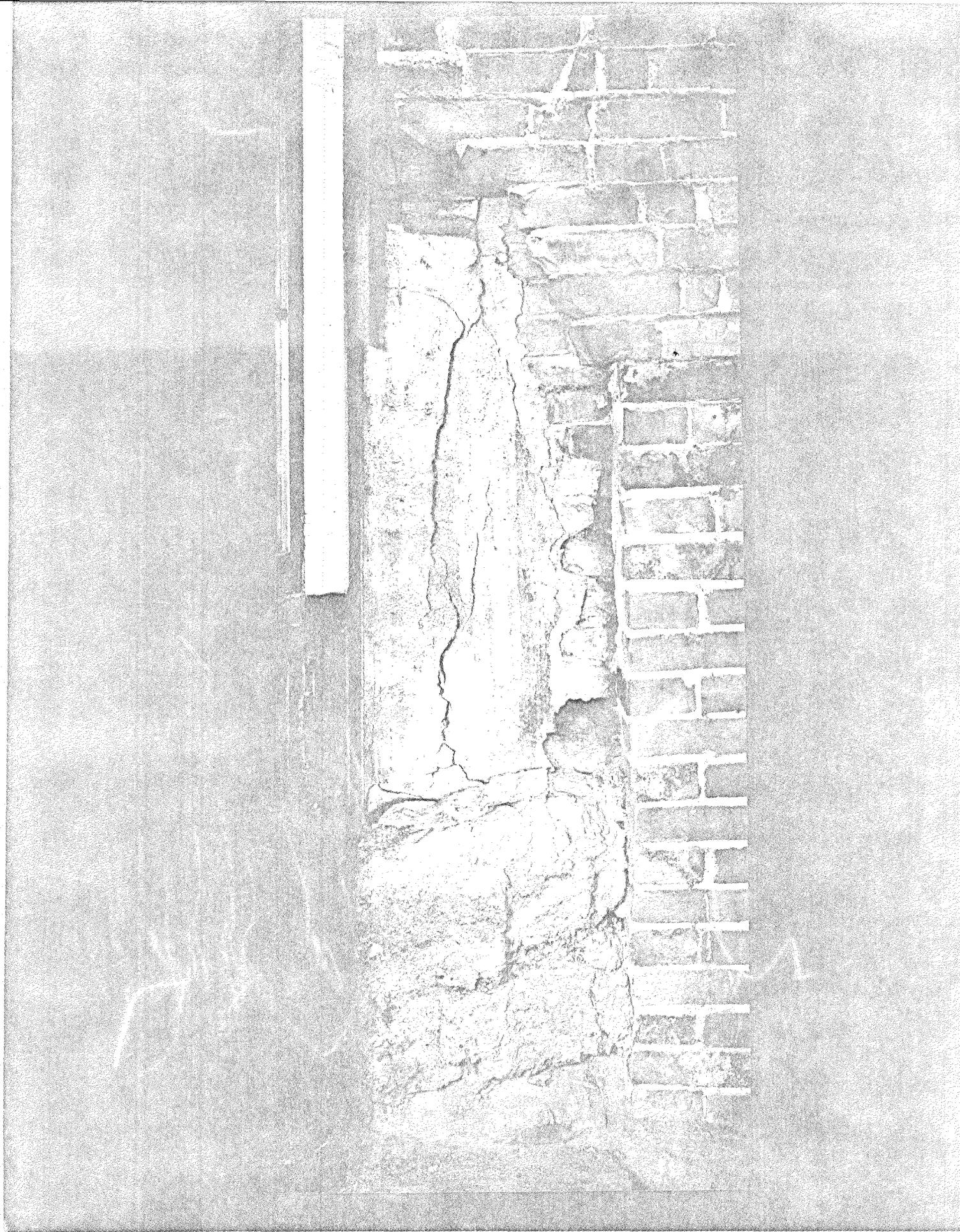
13. Narbonne House, Salem, Mass. Detail of first floor joists in ell. Mortises and pins indicate the reuse of old material.



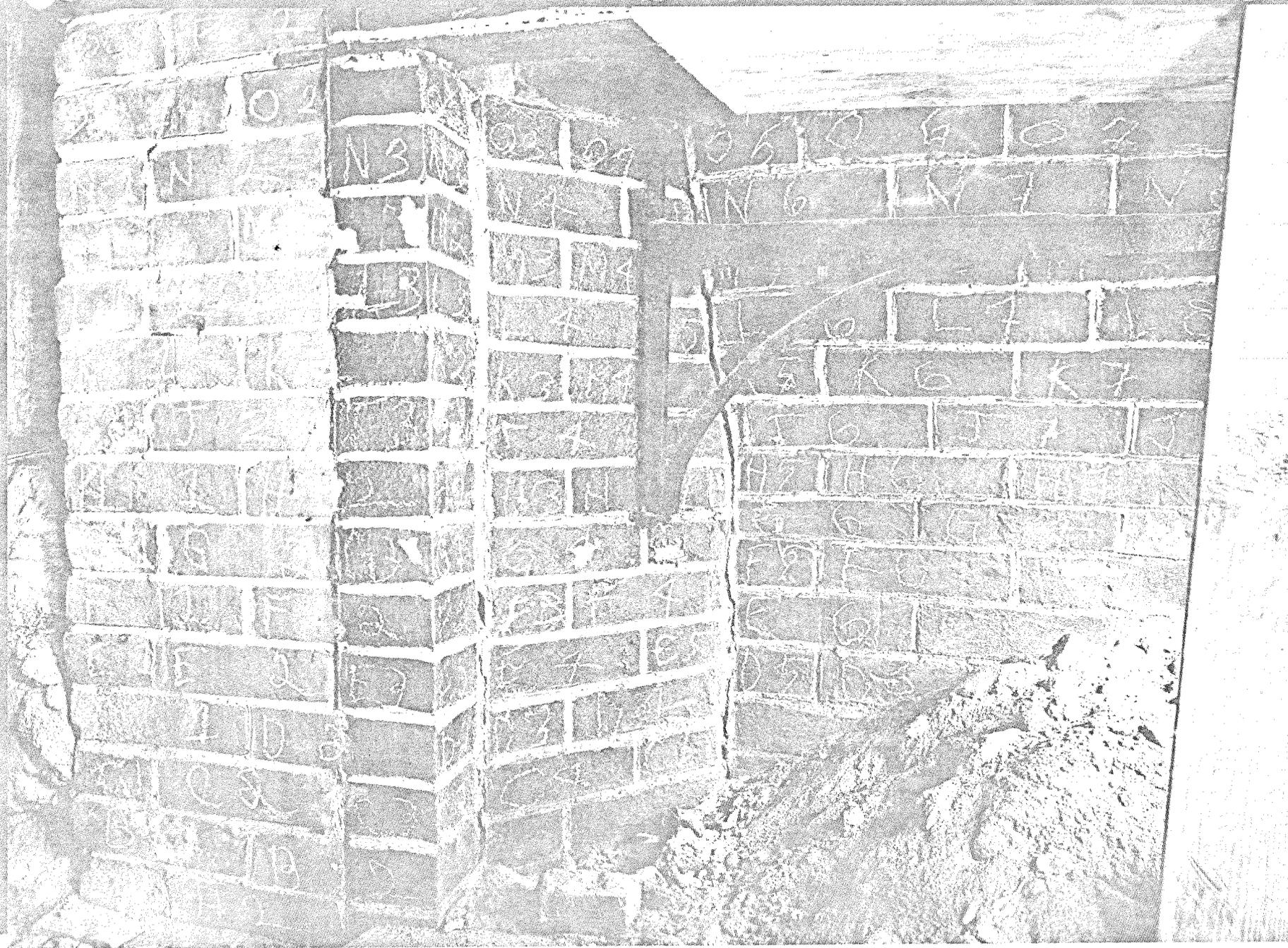
14. Narbonne House, Salem, Mass. Fireplace in north room, first floor before removal of mantel, lath and plaster. Settlement of northwest corner of chimney has caused fireplace to sink several inches (lower right).



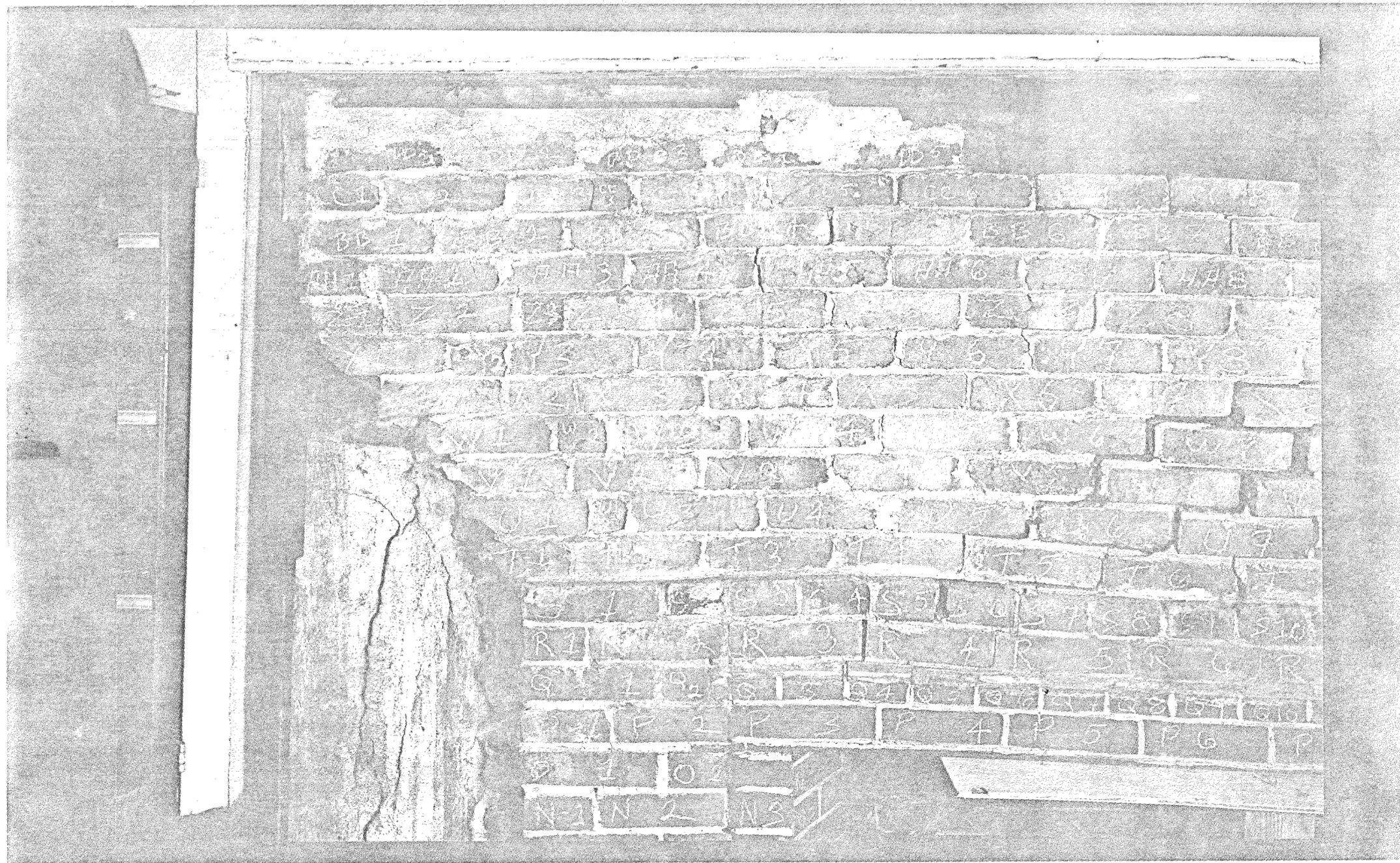
15. Narbonne House, Salem, Mass. Fireplace in north room, first floor after removal of mantel, lath and plaster showing condition of the brickwork.



16. Narbonne House, Salem, Mass. Detail of fireplace in north room. Note old plaster which pertains to an earlier fireplace.



17. Narbonne House, Salem, Mass. Detail of fireplace in north room showing bricks numbered for record purposes.



18. Narbonne House, Salem, Mass. Detail of fireplace in north room. Record photograph of numbered bricks in upper left corner before their removal.



19. Narbonne House, Salem, Mass. Detail of fireplace in north room. Record photograph of numbered bricks above lintel before their removal. Cracks are the result of continuing settlement at the northwest corner of the chimney.



20. Narbonne House, Salem, Mass. Detail of fireplace in north room. Record photograph of bricks in lower right corner.



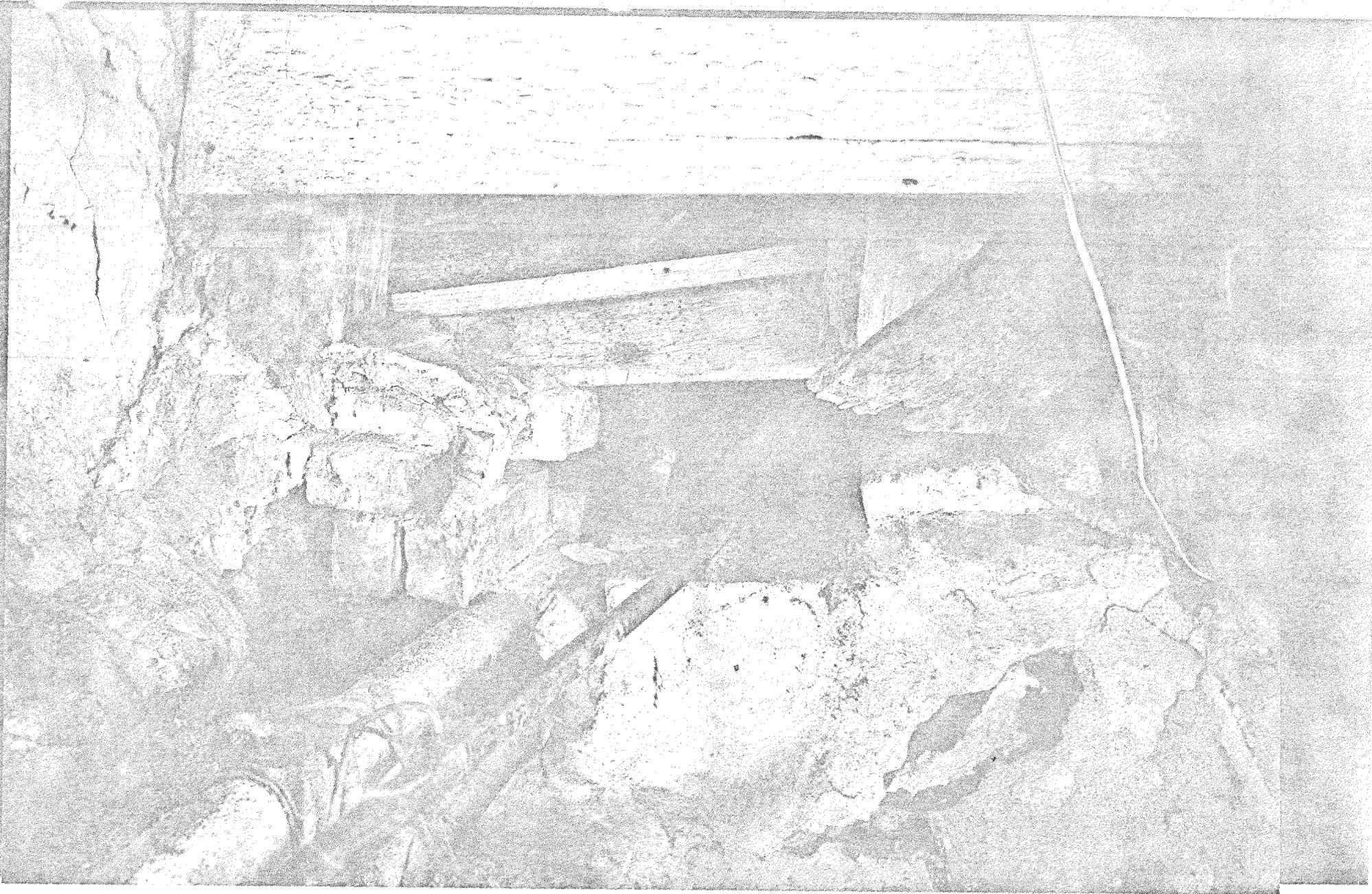
21. Narbonne House, Salem, Mass. Detail of fireplace in north room. Condition upon removal of bricks showing evidence of earlier fireplace.



22. Narbonne House, Salem, Mass. Detail of north foundation wall of chimney beneath the settling fireplace (top center)



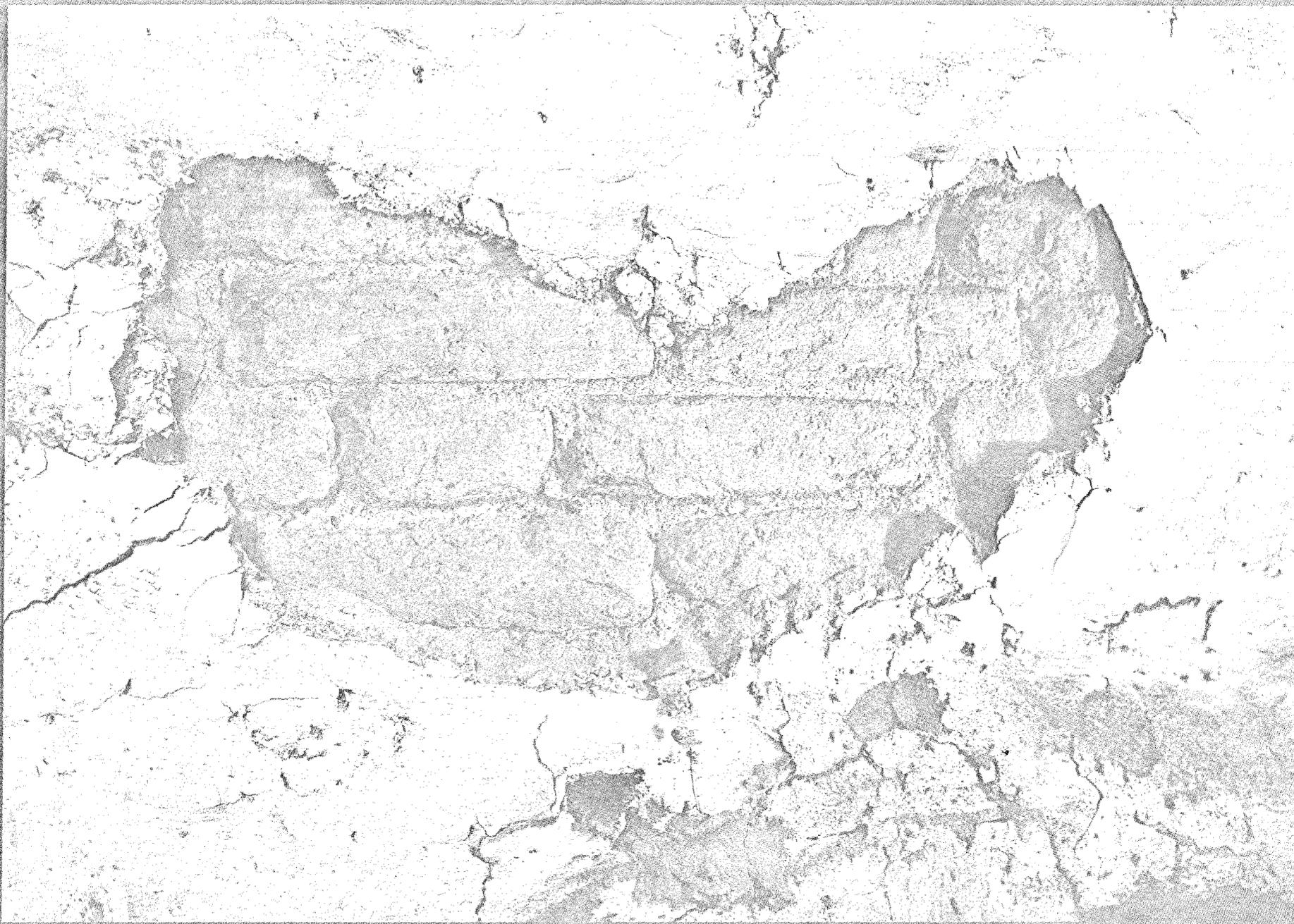
23. Narbonne House, Salem, Mass. Detail of bulging west foundation wall of chimney in basement. Cellar stairs can be seen at lower left.



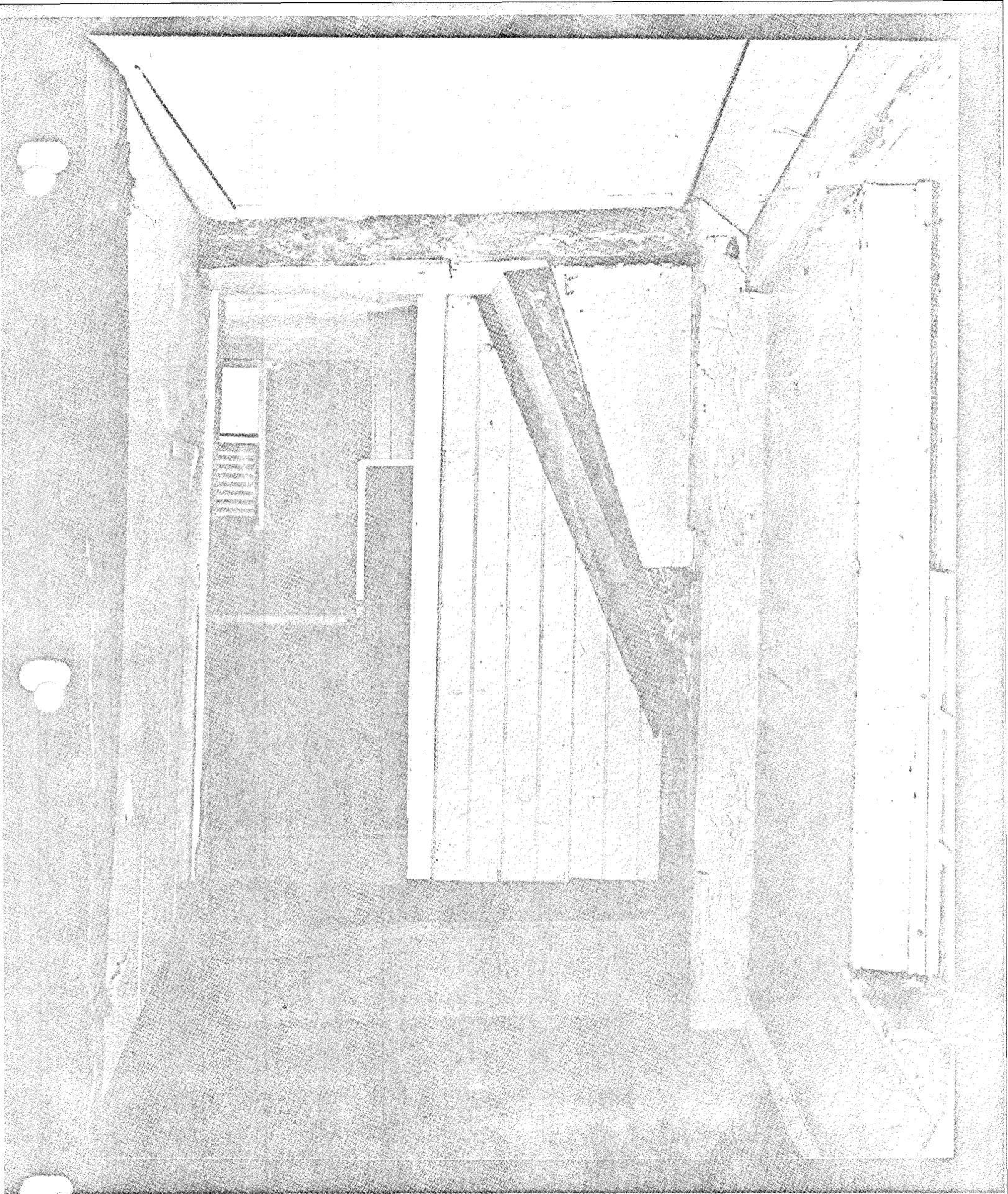
24. Narbonne House, Salem, Mass. Detail showing settlement resulting from missing sill between original structure and later ell, adjacent to bulging west foundation wall.



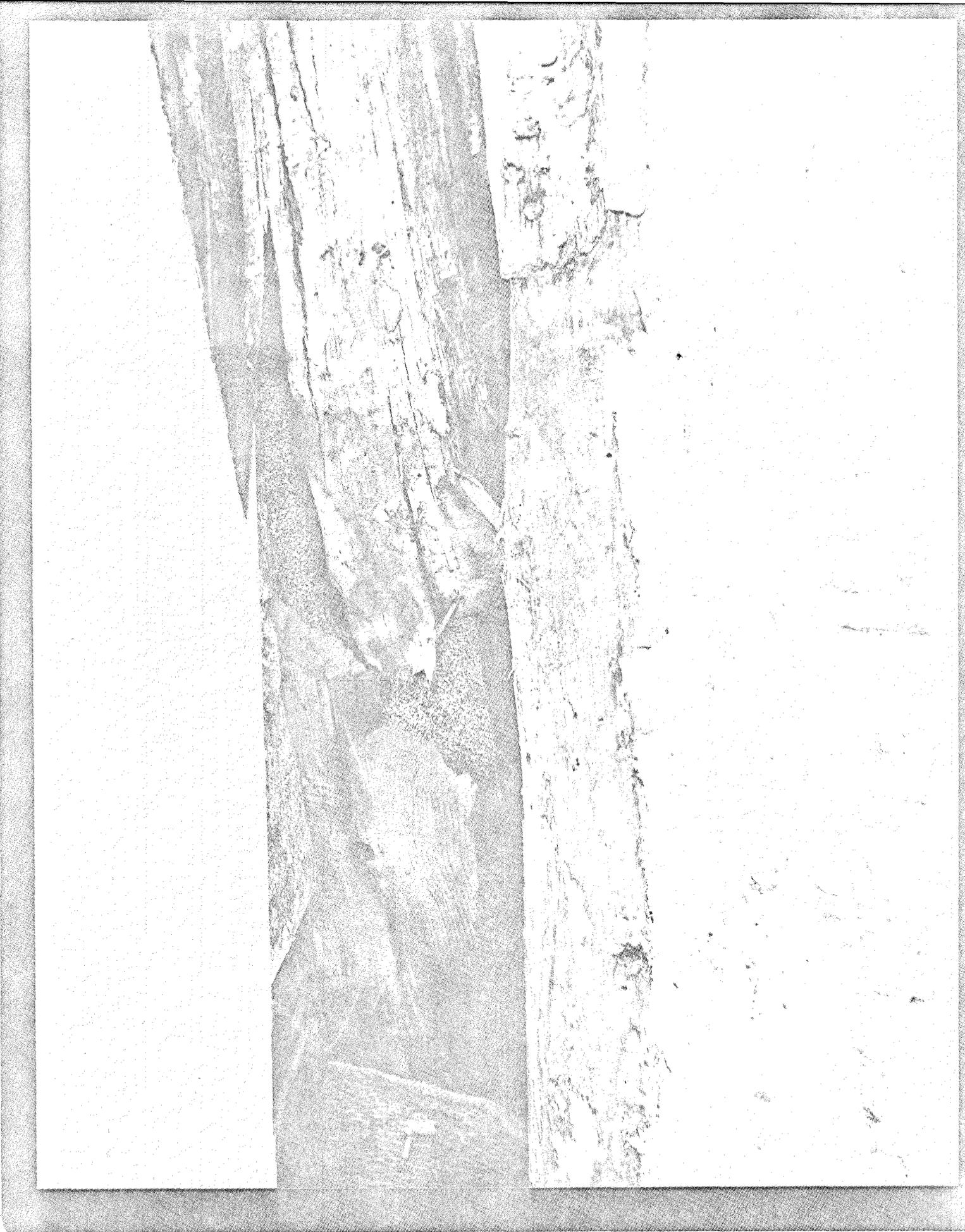
25. Narbonne House, Salem, Mass. Detail of bulging west foundation wall of chimney in basement.



26. Narbonne House, Salem, Mass. Detail of early brickwork and mortar of west chimney wall in staircase between the first and second floors.



27. Narbonne House, Salem, Mass. Second floor hall showing juncture of original structure with later gambrel ell beyond. Deteriorating roofing members of ell are exposed.



28. Narbonne House, Salem, Mass. Detail of deteriorating roofing boards of gambrel ell.

BASEMENT PLAN

BASED ON HABS DRAWING: MASS 802 SHT 2

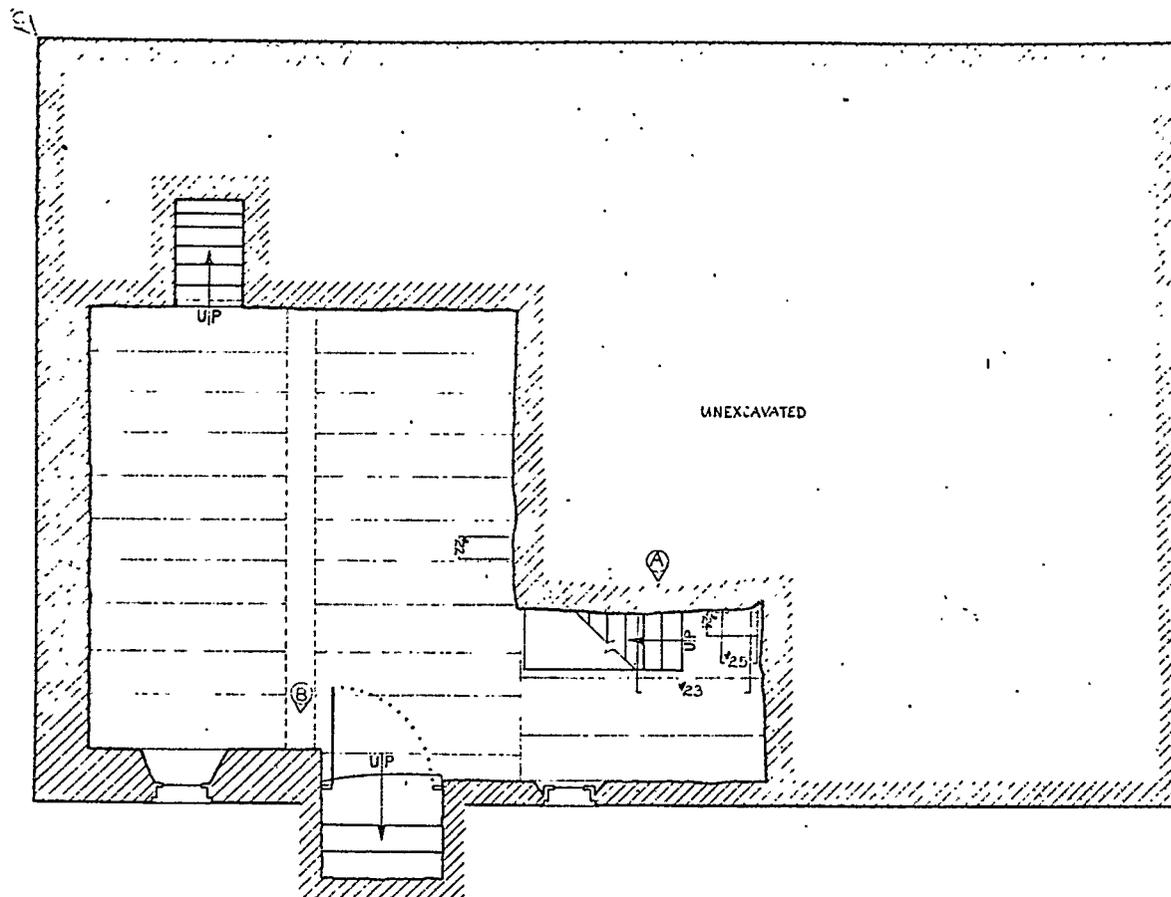
SCALE: 1/2" = 1.0'



REMARKS:

- (A) BULGING FOUNDATION WALL
- (B) TIMBER PARTIALLY ROTTED
- (C) FOUNDATION SETTLING

[Symbol] INDICATES AREA ENCOMPASSED BY PHOTO



HISTORIC STRUCTURES REPORT

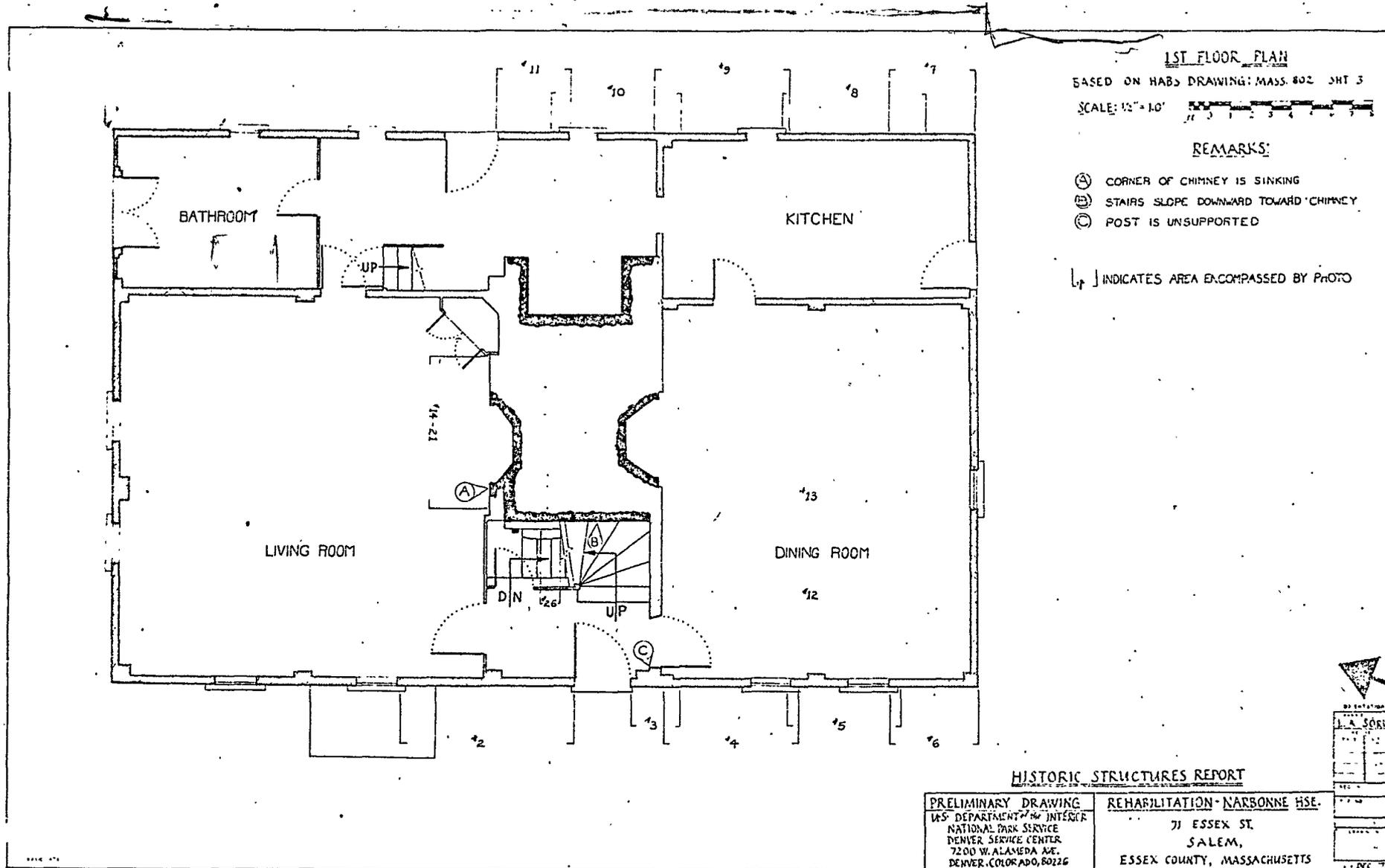
PRELIMINARY DRAWING	REHABILITATION-NARBONNE HSE.
U.S. DEPARTMENT OF THE INTERIOR	71 ESSEX ST.
NATIONAL PARK SERVICE	SALEM,
DENVER SERVICE CENTER	ESSEX COUNTY, MASSACHUSETTS
7200 W. ALAMEDA AVE.	
DENVER, COLORADO, 80226	

ORIENTATION

T.A. 50511

DATE	
BY	
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DATE	

DWG 102



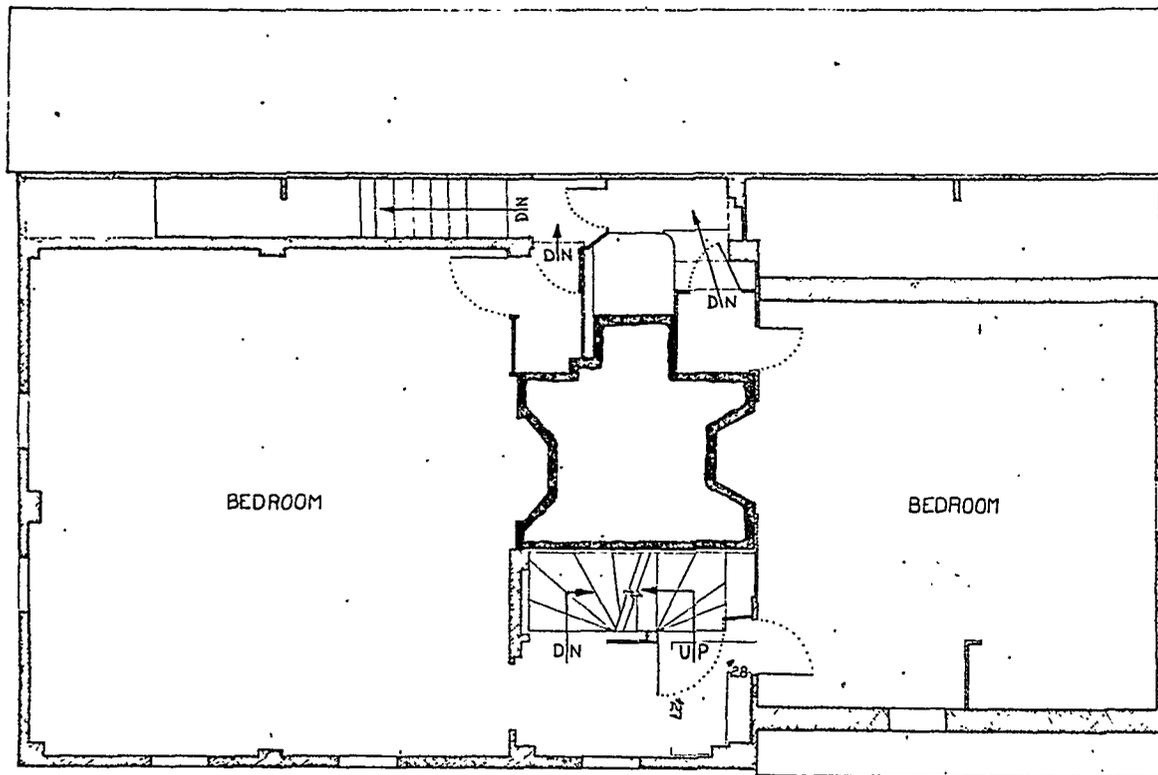
2ND FLOOR PLAN

BASED ON HARS DRAWING: MASS. 802 54T 4

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

REMARKS:

┌┐ INDICATES AREA ENCOMPASSED BY PHOTO



HISTORIC STRUCTURES REPORT

PRELIMINARY DRAWING
U.S. DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
DENVER SERVICE CENTER
7200 W. ALAMEDA AVE.
DENVER, COLORADO 80226

REHABILITATION - NARBONNE HSE.
71 ESSEX ST.
SALEM,
ESSEX COUNTY, MASSACHUSETTS

NO. OF SHEETS	1
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APPROVED BY	
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JB
7/9/73
Ramer
7/9

H30-NER(MM)

JUL 9 1973

Memorandum

To: Director, Denver Service Center
From: Acting Director, Northeast Region
Subject: Historic Structures Report, Marbonne House, Salem Maritime

We have reviewed the December 1972 Report which was enclosed with Manager, Historic Preservation Team, Mattes' memorandum of January 3. Director, OAHF, Utley's comments were expressed in his memorandum to you dated February 1. You will no doubt recall that he objects to the proposed adaptation of the interior of the house for use as an employee residence.

We enclose a copy of General Superintendent, Boston Group, Olsen's February 21 memorandum and its enclosure, which were written in response to Mr. Utley's memorandum and express the recommendation that no portion of the interior of the house be exhibited to Site visitors. We phoned Mr. Olsen on July 5 and found that both he and Supt. Dobrovolny continue to hold the opinions expressed in these memoranda.

It appears to us that the overriding necessity is to carry out the restoration work while the funds are available and before a major structural failure occurs to the building. We are, therefore, hereby approving the December 1972 Report with the following comments:

1. The plans for adaptive interior rehabilitation shall be revised, insofar as necessary, to confine all adaptive installations to the south (18th Century) portion. The north (17th Century) portion shall be restored to approximately the appearance it would have had after the last addition was made to the house.

2. Upon completion of the work, the interior of the house will be used as quarters for a carefully selected employee whose style of living is conformable to these surroundings. This use, for the foreseeable future, will not preclude the possibility of a future management decision to exhibit part or all of the interior to visitors.

(SGD) George A. Palmer

George A. Palmer

Enclosure

cc:
Director, OAHF, w/enc.
Gen. Supt., Boston Group
Supt., Salem Maritime

J.B.LUKENS/mb 7/9/73

General
Daily
Area

Narbonne House, Salem, Massachusetts - Technical Comments

1. Quality of photographic reproduction is atrocious! I can't read most of them. "Merulius lacrymans (tree dry rot) can produce its own moisture, so can't be stopped by drying out timbers" from Principles of Modern Building, 3rd edition London, Her Majesty's Stationery Office, 1959, Vol. 1, p. 124.
2. Koppers fire retardant #1 red cedar shingles recommended by SPNEA.
3. There is question about the fungicidal property of treated shingles. However, they are fire resistant. This should be used without asphalt felt or other paper so as to maximize the breathing of the shingles, roof board and roof structure.
4. Renovating the attic in order to keep the roof breathing and yet not waste heat, it is suggested that the insulation be in _____ and then insulation over the floor boards. This would then not require that the original floor boards be disturbed. It would also protect the historically valuable plants immediately beneath them.

Boston Group
Post Office Box 160
Concord, Massachusetts 01742

H30

February 21, 1973

Memorandum

To: Director, Northeast Region

From: General Superintendent, Boston Group

Subject: Historic Structure Report, Narbonne House, Salem Maritime

The enclosed copy of a memorandum of February 16 to me from Superintendent Dobrovoiny is in response to the comments, suggestions, and recommendations contained in Mr. Utley's subject memorandum of February 1.

As Mr. Dobrovoiny points out, the master plan team fully considered and evaluated the preservation, interpretation and use of the Narbonne House in the recently completed revision study for the site. For reasons outlined in his memorandum, the master plan team recommended against use and interpretation of the building as an interior architectural exhibit, and opted instead for adaptive use as a residence or for some other utilitarian function consistent with its preservation and interpretation as an exterior exhibit. No objection was raised to this proposal in the review and revision process; and by your approval of the master plan, it became an approved goal for management implementation.

The provision in the contract with the Society for the Preservation of New England Antiquities for proposed use of the structure as a residence is, therefore, wholly consistent and in accord with the approved master plan. We might also add that it is wholly in accord with the historical use of the structure, which apparently has been overlooked.

Nowhere in the master plan or in the Society's report is there any intent to restore the building to a particular period. In fact, we believe the report demonstrates particular sensitivity by the Society to the uniqueness of the structure and the recommended treatment or repairs proposed are made with a view toward maximum preservation of the existing fabric, whether interior or exterior, of the structure.

We concur with Mr. Dobrovolsky's view that the proposed use of the building will, in fact, better guarantee its preservation and survival than that recommended by the Office of Archeology and Historic Preservation. We do not agree that modernization of the existing heating, electrical, plumbing, and other utilities systems will necessarily require greater intervention into the fabric; nor do we agree that floor loads for residential use will necessarily be more detrimental than those imposed by visitor use on either of the scales proposed by the Office of Archeology and Historic Preservation. In either case, additional structural support of the first floor may be necessary, but then we have ample precedent for this in many other historic structures administered by the Service.

In summary, we believe that the Society should be given approval to proceed with preparation of the construction drawings and specifications for rehabilitation of the structure and adaptive use as a residence. We believe that the Office of Archeology and Historic Preservation, in its review of these drawings and specifications, can exercise a restraining influence if that should prove necessary.

(SGD) HERBERT OLSEN

Herbert Olsen

Enclosure

cc: Superintendent, SAMA

UNITED STATES GOVERNMENT

Memorandum

TO : General Superintendent, Boston Group

DATE: February 16, 1973

FROM : Superintendent, Salem Maritime NHS

SUBJECT: Narbonne House

A piecemeal approach to operating a park is, I think, what sometimes gets us into unnecessary problems; every Specialist looking at individual portions of the park without sufficient awareness of the overall park needs. During the Master Plan studies, the team looked at the entire park and evaluated the needs of each component. It considered, in the case of the Narbonne House, possible restoration and exhibition of the house and rejected the idea for several reasons: (1) the Narbonne House has little relationship to the park's maritime theme, contrary to what was believed when the house was acquired by the Service in 1963; (2) there are already five 17th century houses open as museums in Salem; (3) personnel, both maintenance and interpretive, would be required to operate and show the house, to be obtained either through additional park staffing and funding or by reducing maritime program areas elsewhere; (4) period furnishings and exhibits would presumably be needed to interpret the house.

The Master Plan team felt that development and interpretive resources should be thrust seaward to carry out the maritime purpose for which the park was established. Historic structures on the land side of Derby Street should be preserved and interpreted, but the maritime theme should not be further diluted with emphasis on more old houses. Thus, the Master Plan calls for repair of the Narbonne House to prevent structural collapse, use as a residence or other utilitarian function, "interpretation of the building showing changes through time, and (like the Hawkes House) an exterior exhibit not open to the public except by special arrangement."

I am not qualified to discuss floor loads and structural differences between use of the house as a museum or as a residence, but just to express my opinion that a tour group exerts more weight than members of a family, and the constant trooping through the house by visitors places some strain and wear on the house. As a museum, the house would be vacant at nights and beyond the effective observation of park personnel living in the Hawkes House; while used as a residence, it would add extra protection to the house and that end of the park.



I fail to see where modification of the interior of the house for residence purposes to the extent planned would detract from the preservation of the house. Utilities are already in the house. They would just have to be extended to create a usable bathroom and kitchen, and to ensure safe wiring and heating systems. There is no proposal to cut new door openings in the walls or to knock down partitions, nor to make any other such structural and fabric modifications for the convenience of the residents so far as I can tell.

I have already referred to the interpretive uses of the house. The maritime theme of the park cannot be much helped by an interior interpretation of the house, and most likely will divert attention from the more important wharves and waterfront. In-depth study of the architecture by those few people so interested can be accommodated on a special basis as is the Hawkes House at the present time.

It would be helpful if the other alternatives to saving the chimney were described or identified; I think the SPNEA has looked hard for solutions.

H. John Dobrowolny



United States Department of the Interior

NATIONAL PARK SERVICE
WASHINGTON, D.C. 20240

MAR 1 1973

IN REPLY REFER TO:

H30-PHHA

Memorandum

To: Director, Denver Service Center

From: Director, Office of Archeology and Historic Preservation

Subject: Historic Structures Report, Narbonne House, Salem, Massachusetts

We have reviewed the subject report which was prepared under contract with the Society for the Preservation of New England Antiquities. While this report meets the intended requirements of the contract and the standards for historic resource studies, there are some areas of serious oversights and technical vagueness.

We realize that the contract calls for development of the house for use as a modern residence. We feel that the adaptive interior rehabilitation portion of the study should be rewritten to state the uniqueness of the structure and to indicate the adverse effects of required alterations, utilities, and heavier floor loads that would be necessary for a modern residence. The study should emphasize the uniqueness of the Narbonne House as a 17th century survival. There are less than ten houses of this early plan type in New England. This is the only survival of the type that retains all its basic architectural characteristics. Of the two 17th century buildings owned by the Park Service, only this house has not been altered by earlier modernization or restoration while the Ironmaster's House at Saugus has been altered beyond recognition. It must be remembered that the purchase of the Narbonne House was authorized by the Congress "...in order to preserve...one of the few substantially unaltered houses of the 17th century Massachusetts....." (see the Act and Report enclosed).

*Rehabilitate
interior in*

We suggest that consideration be given to preserving the Narbonne House in an essentially "as-is" condition for an architectural exhibit. This will require repair of the deteriorating fabric and not restoration to a period. Intervention into the fabric should be minimum. Heat will be required but electrical services will be only those for power and lighting secondary interpretive displays. The interpretation of the Narbonne House can be considered in two scales: for all visitors - the history of the building and its occupants within the whole theme of Salem Maritime National Historic Site; and for in depth study - the architecture as expressed in the interior elements - an evolution of early building technology. These unique and important architectural features can be best observed in small guided groups. Limited interior use will also solve problems of visitor circulation and minimize the impact of visitors on this ancient structure.

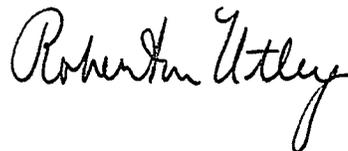
We have marked the review copy with a few questions that are primarily editorial. Since the entrance is not on the street but on the side of the house, there is some confusion in the references as to what is the side and front elevation. We believe that the report would be clearer if an introduction would describe the house's general configuration and elements and identify these with numbers which are referenced to the plan and text. The present indications of photos and distressed areas of the house are useful.

Part I: "Evolution of the House As Revealed Through Structural Analysis," should be summarized to state concisely the succession of building elements and the areas where more study is required. The recommended treatment to repair the structure is well thought out; however, it should be refined to reflect the proposed uses of the building.

There is some reservation in our minds relative to the severe intervention required to stabilize the chimney since the report implies that repair will involve major portions of the mass. We are also concerned with the possible adverse characteristics of foam relative to its low fire resistant qualities. We feel that there are other alternates that perhaps should be considered for the saving, repairing, and/or replacing the chimney.

We concur with the recommendations of regrading the yard to drain away from the foundation and creating a crawl space under the lean-to and ell to keep the building dry. We recognize the desirability that this excavation should be conducted under the supervision of an archeologist since it is possible that evidence of the several building periods can add to existing knowledge of the evolution of the structure. It is important that this work be coordinated with the repair phase so that the structural integrity of the building is not placed in any greater jeopardy.

We are pleased with the professional quality of the study, and we hope that the preservation of the Narbonne House will now become an immediate priority.



EnclosureS

cc: Director, Northeast Region

History



Public Law 88-199
88th Congress, H. R. 976
December 12, 1963

An Act

77 STAT. 359.

To authorize the Secretary of the Interior to acquire and add certain lands to the Salem Maritime National Historic Site in Massachusetts, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That in order to preserve, as a part of the Salem Maritime National Historic Site, one of the few substantially unaltered houses of seventeenth century Massachusetts, the Secretary of the Interior is authorized to procure by purchase, donation, or purchase with donated funds certain lands and interests in lands situated in Salem, Massachusetts, being known as the Narbonne House, and consisting of approximately 0.187 acre, the same being the premises conveyed to Margaret Hale by deed dated November 5, 1958, and recorded with the Essex County deeds, book 4511, page 575. When acquired, said lands shall be administered as a part of the site under the laws and regulations applicable thereto.

Sec. 2. There are hereby authorized to be appropriated such sums, but not more than \$18,000, as may be necessary to acquire the property described in section 1 of this Act.

Approved December 12, 1963.

LEGISLATIVE HISTORY:

- HOUSE REPORT No. 430 (Comm. on Interior & Insular Affairs).
- SENATE REPORT No. 600 (Comm. on Interior & Insular Affairs).
- CONGRESSIONAL RECORD, Vol. 109 (1963):
 - July 8: Passed House.
 - Nov. 27: Considered and passed Senate.

History
Calendar No. 640

88TH CONGRESS }
1st Session }

SENATE

REPORT
No. 660

AUTHORIZING THE SECRETARY OF THE INTERIOR TO ACQUIRE
AND ADD CERTAIN LANDS IN THE SALEM MARITIME NA-
TIONAL HISTORIC SITE, MASSACHUSETTS

NOVEMBER 26, 1963.—Ordered to be printed

Mr. BIBLE, from the Committee on Interior and Insular Affairs,
submitted the following

REPORT

[To accompany H.R. 976]

The Committee on Interior and Insular Affairs, to whom was referred the bill (H.R. 976) to authorize the Secretary of the Interior to acquire and add certain lands to the Salem Maritime National Historic Site in Massachusetts, and for other purposes, having considered the same, report favorably thereon and recommend that the bill do pass.

PURPOSE

The purpose of H.R. 976, by Congressman Bates, is to provide for the acquisition of the 17th-century Narbonne House in Salem, Mass., and for its administration as part of the Salem Maritime National Historic Site.

NEED

The Salem Maritime National Historic Site was created pursuant to the acts of August 21, 1935 (49 Stat. 666), and May 26, 1936 (49 Stat. 1374). It presently includes the old Custom House, Hawkes House, and Derby Wharf, all of them reminders of the day of sailing ships when the American flag was carried from Salem to all quarters of the globe. The Narbonne House, which is located on the same block as Derby House, will be a valuable addition to this collection. It is one of three houses in Salem known to have been built before 1675, and was, during a long part of its life, intimately associated with Salem's seafaring life. It is also an important example of the architecture of the period during which it was built.

COST

The Narbonne property can be acquired for the \$18,000 authorized to be appropriated, according to the Park Service. Additional annual operating costs of the site will be nominal.

DEPARTMENT RECOMMENDATION

The favorable report of the Department of the Interior follows:

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D.C., April 5, 1963.

Hon. WAYNE N. ASPINALL,
*Chairman, Committee on Interior and Insular Affairs,
House of Representatives, Washington, D.C.*

DEAR MR. ASPINALL: Your committee has requested a report on H.R. 976, a bill, to authorize the Secretary of the Interior to acquire and add certain lands to the Salem Maritime National Historic Site in Massachusetts, and for other purposes.

We recommend that the bill be enacted.

The bill would authorize the Secretary of the Interior to acquire, by purchase, donation, or purchase with donated funds, approximately 0.187 acre of property known as the Narbonne House in Salem, Mass., for addition to the Salem Maritime National Historic Site.

The Salem Maritime National Historic Site comprises Derby wharf, the Richard Derby House, the Hawkes House, and the old customhouse in which Nathaniel Hawthorne worked. The structures are significant in their historical association with New England's maritime, architectural, and literary past. Donation of these properties to the Federal Government was made possible by the Commonwealth of Massachusetts, the city of Salem, the Society for the Preservation of New England Antiquities, the Home for Aged Women, and certain interested citizens of Salem. On March 17, 1938, these properties were designated the Salem Maritime National Historic Site by the Secretary of the Interior pursuant to authority contained in the act of August 21, 1935 (49 Stat. 666).

Standing directly behind the 18th century home of Richard Derby, which is now a part of the site, is one of the three houses in Salem which are known to have been built before 1675—the Narbonne House. Although the Narbonne House has attracted considerable interest because of its intrinsic architectural value, this venerable structure also has intimate associations with Salem's maritime history. Constructed about 1670, the house represents that period when Salem was pioneering and developing its most important pre-Revolutionary-trading areas overseas, namely, the British West Indies and ports in southern Europe. In this building lived mariners who sailed the seas long before the birth of the Derbys and the Crowninshields, the great figures in the annals of Salem's foreign commerce. Occupants of the house over the years have included many hardy and modest Salem fishermen, mariners and ship joiners, such as Paul Mansfield, Charles Redford, John Turner, William Pickering, and Richard Williard. With the possible exception of Joseph Hodges, a prominent pre-Revolutionary mariner, the occupants of the Narbonne House lived quiet and inconspicuous lives.

In short, the Narbonne House is typical of the modest abodes of the ordinary mariners of the late 17th and early 18th centuries in Salem, just as the stately mansions of Chestnut Street reflect the mode of living of the later Salem merchants who made great wealth from the sea. Yet, the Narbonne House commemorates the maritime theme of Salem as genuinely as do the charming Derby House and the imposing Custom House, now a part of Salem Maritime National Historic Site.

Most of the old structures associated with early New England history have undergone extensive modification, either through need for repair or modernizing but the Narbonne House—so called from its 19th century inhabitants—remains in essentially pristine condition. Some additions to the original dwelling, and some changes have been made both in the 18th and 19th centuries but structurally the house is unspoiled. Much of the original finely carved frame is still exposed, the stairs are original, 17th century trim and hardware survive in several places throughout the house, and there have been few, if any of those radical changes which obscure the basic character of an early house.

There is abundant structural evidence to support the early date of construction which is revealed in the old documents. Of even greater significance is the form of the house as a whole. Often in the 17th century it was customary for the young man starting out in life to construct a dwelling of one-room plan with a chimney at the end. This unit was designed to serve the needs of his family until additional space was needed. Both the House of the Seven Gables and the Pickering House in Salem (as well as many other surviving 17th century dwellings elsewhere) started thus as "half-houses." The addition when it came, took the form of a similar unit (without chimney) added to the existing house in such a way that the original chimney became the central feature, serving both old and new rooms.

The Narbonne House retains its basic "half-house" character and is one of the only a half dozen 17th century examples surviving in Massachusetts which does. The addition in this case was in the form of a lower story and a half-gambrel ell which not only helps to preserve intact the lines of the original house, but also to create picturesque interest as well.

The owners of this structure have recently placed the property on sale, asking \$18,000 for it, which we feel to be fair and reasonable. We do not know of any prospective buyers who would purchase the property and donate it to the Federal Government for national historic site purposes, as was the case with the present structures in the Salem Maritime National Historic Site. In order that it be accorded preservation and interpretation in keeping with its historical and architectural significance, the Narbonne House should be acquired and made a part of the site.

Administrative costs at Salem Maritime National Historic Site are not expected to be materially increased in the event this property is purchased and made a part of the site.

4 SALEM MARITIME NATIONAL HISTORIC SITE, MASSACHUSETTS

The Bureau of the Budget has advised that there is no objection to the presentation of this report from the standpoint of the administration's program.

Sincerely yours,

JOHN A. CARVER, Jr.,
Assistant Secretary of the Interior.

○



United States Department of the Interior

NATIONAL PARK SERVICE

DENVER SERVICE CENTER
7200 W. Alameda
Denver, Colorado 80226

IN REPLY REFER TO:

H30-CD-THP

JAN 3 1973

NORTHEAST REGION
JAN 3 1973
Asst Dir Management
Asst Dir Operations
Asst Dir Coord. Activities
Fed-State-Pvt Affs
Public Affairs
Ch. Finance & Control
Finance
Property
Asst Dir Prof Services
Ch. Land Acquisition
Ch. Opns Evaluation
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Programs & Budget
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Memorandum

To: Director, Northeast Region

From: Manager, Historic Preservation Team, Denver Service Center

Subject: Historic Structure Report, Narbonne House, Salem, Massachusetts

Transmitted herewith is a copy of subject report which was prepared under contract by The Society for the Preservation of New England Antiquities. We would appreciate it if you would review this report and send your comments to us within 30 days.

By copy of this memorandum, we are sending a copy of this report to Superintendent, Boston Group and to Director, Office of Archeology and Historic Preservation, with the request that they also review it and send us their comments within 30 days.

[Handwritten signature]
for Merrill J. Mattes

Enclosure

cc:
WASO-OAHP, Director, w/encl.
Supt., Boston Group, w/encl.



National Parks Centennial 1872-1972

[Handwritten notes]
H/1/19
VERY INTERESTING