ARCHITECTURAL CONDITIONS ASSESSMENT

December 31, 2016

THE ISSAC WINSLOW HOUSE

THE HISTORIC WINSLOW HOUSE ASSOCIATION

MARSHFIELD, MASSACHUSETTS

Photo taken in 2004

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EXISTING CONDITIONS SURVEY AND TREATMENT RECOMMENDATIONS
THE ISSAC WINSLOW HOUSE
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I. INTRODUCTION

The following discussion of the condition and capital improvement needs of the Isaac Winslow House in Marshfield, Massachusetts is based on site visits to the property August 11 and October 15 of 2016 by William B. Finch of Finch&Rose in order to prepare a report on the condition and historic development of the property. This assessment is limited to the original main house and the rear ell. Other than some comments on the tea room roof shingles, the conditions of the tea room and barn additions were not reviewed. The evaluation was limited to the review of visible surfaces and architectural elements as the site visits did not include the removal of existing finishes to examine hidden conditions. The report is not intended to evaluate structural capacity or conformance to Building and Life Safety Codes. 60 photographs illustrating significant conditions are attached at the end of the text followed by 3 figures showing the temperature and relative humidity graphs recorded in the two cellars and the diary from August 11 to October 17, 2016.

The author prepared a previous study of the conditions of the house in 2004-5 and oversaw repairs carrying out some of the recommendations of the report during 2006-7. All the photographs in this report were taken by William Finch in 2016 unless otherwise indicated in the captions.

Also included at the end of this report is a section on the significant architectural features of the house and their development and alteration over time derived primarily from our examination of the house and extant historical photographs in 2004-5, but not included in the 2005 report. An additional 31 photographs illustrating architectural features are included after the photographs and figures of conditions. An Appendix with copies of various descriptions of both the Winslow House (including notes by Abbott Lowell Cummings from a visit in 1956) and the similar Bryant-Cushing House in Norwell follows the photographs.

The house is owned by the Historic Winslow House Association and is operated as an historic house museum open to the Public. By tradition the house is believed to have been constructed in 1699 by Judge Isaac Winslow, grandson of Edward Winslow, Governor of the Plymouth Colony. According to a two page publication by Arthur Winslow, the house was erected by Issac following the burning of Edward Winslow's house named "Carswell" in 1899. That document also states the house was purchased by three individuals from its last owner in 1919. They then restored it over the next year, and deeded it to the Historic Winslow House Association in 1926.

As it stands today, the exterior of the house is of high style Georgian design, (i.e., mid eighteenth century) and its interior is distinguished by a mixture of late First Period and e Georgian detailing. Features that are particularly rare and notable are the early dairy and pantry rooms, the kitchen with eighteenth century sponge painted decoration on the walls and ceiling, the main staircase,

and the early bolection molded paneling in the hall chamber and on numerous two-panel doors throughout the house.

Following the initial restoration, the Association added a connecting link to the barn in order to operate a tea room adjacent to the house. Photographs of the exterior from 1916 show that house had become extremely run down prior to the c. 1920 restoration.

The property includes the main house with a central chimney and two room deep plan (referred to as the "main block" in this report), a rear ell having a summer kitchen with chambers above it Referred to as the "ell" in this report) that appears to have been added a few years after the main house was constructed, a long one story addition to the ell constructed c. 1921 that is linked to a large barn and several other connected outbuildings. As is typical of houses of this period, a full cellar is only present under one side of the main house. A dairy (or buttery) is located partially below grade with an early pantry above it. A separate cellar is present under the summer kitchen ell. The remainder of the house has only an extremely shallow inaccessible crawl space. The entire tea house/barn complex is constructed over a crawl space. The link and barns have served as a tea room and more recently a function facility since the 1920s. The property also includes the later eighteenth century Ford house which has been used as housing.

The front of the main block faces roughly east, which is somewhat unusual for an early 18th century rural house (they usually faced south), while the entry front of the ell faces roughly south.

II. CONDITIONS

A. Summary of Condition Issues

The most significant condition issues observed in relation to the main house and summer kitchen ell include the following:

The wood roof shingles on the front pitch of the main block and both pitches of the tea house are at the end of their service life with extensive lichen growth and rot. They should be replaced within the next 1-2 years; the shingles on the both pitches of the rear ell and the rear pitch of the main block are nearing the end of their service life with extensive surface erosion; while they may last for another 2-4 years, it wold be more economical to replace them within 1-2 years in the same project as the other shingles. Chimney and valley flashings should be replaced in conjunction with the shingles.

Several areas of the roof framing have areas of substantial rot and deterioration that occurred some time ago. While stable and unchanged since the 2004-5 assessment, they warrant review and possible repair by a skilled carpenter with substantial experience repairing timber framing in significant 17th and 18th century houses.

Although past water infiltration into the cellars appears to have been effectively corrected, high relative humidity remains a problem both in the cellars and the museum rooms. A program of temperature and humidity data logging should be renewed and run for at

least a year band the data then reviewed to determine an appropriate course of action to reduce the problem. Installing a hot air furnace in the main house cellar with humidistatic controls and minimal ducting to the kitchen cellar and first floor is probably the most effective way to reduce the humidity in the winter, spring, and fall. Dehumidifiers should be run in the cellars during the summer.

There are widespread areas of badly peeling ceiling and woodwork paint in some of the museum rooms that are probably caused by underlying calcimine paint. Proper preparation to remove the calcimine and repainting of these rooms is needed.

Areas of frayed and worn straw matting in the rear second floor rooms present a tripping hazard for visitors and should be replaced with matching new straw matting.

The sills at the two attic windows on the west end of the main block require repair, as both sills have dropped 1/2" below their jambs, and one has substantial rot.

The exterior paint on both the clapboards, trim, and window sash is wearing thin and exposing the wood surfaces to deterioration from ultra-violet light and rain; repainting should be done within the next 1-3 years to preserve the exterior woodwork and window sash glazing compound.

B. Wood Shingle Roofing and Flashings

The roofs of both the main block and rear ell are finished with red cedar shingles, as are the attached tea room and barn. The various pitches of the roofs were not done at the same time. The front pitch of the main block was installed in 1988. The rear pitch of the main block along with both pitches of the rear ell were installed 1995. The tea room roof was done in 1991.

The shingles on the pitches discussed below were examined hands on from a ladder. The north pitches of the ell and the tea room were not examined hands on, but can be assumed to be in similar condition. Given their northerly exposure, their lichen growth is probably greater but wear from UV exposure a little less.

The shingles on the front pitch of the main block are fastened with galvanized nails, whereas its rear pitch and the south pitch of the ell are fastened with stainless steel staples. All the pitches appear to be installed directly on top of conventional roofing felts. Currently the front pitch shingles have a heavy growth of lichen on them with many shingles having multiple splits, and a few having slipped off the roof. Although they do not exhibit the deep surface erosion noted on the south pitch shingles of the ell, the lichen is holding moisture on the shingles causing rot and the splits. The shingles on the front pitch are beyond their service life (the normal service life for wood shingle roofs is 20-25 years) and need to bee replaced in the within the next 1-2 years.

The shingles on the rear (west) pitch of the main block are in better condition than the shingles on the front pitch, as they are 5 years younger. They are fastened with stainless steel staples. They do not exhibit heavy lichen growth or extensive splitting, but still have issues. Many have moderate curling which has caused some of the staples to lift out. Most show moderate surface erosion with up to about 1/8" of surface loss. Several locations were observed where the vertical joints

between shingles are in line over three courses. This can generate leaks. Good installation practice maintains at least 1" -2" of joint alignment over three successive courses. The top course of shingles below the central chimney has been face nailed through the chimney flashing. The flashing should lap over the nailing of the top course to minimize the risk of leaks. The ridge boards at the top of the pitch are in poor condition with south end one lifting off the roof. Some leaks into the attic have been reported that appear to be from this pitch a little above its valley with the ell. The source of these leaks was not evident.

The shingles on the south pitch of the rear ell have substantial surface erosion with up to about 1/4" of surface loss. Some of the shingles have become so thin that they can easily be broken off at the butt line of the next course of shingles. They have a moderate amount of lichen growth, mostly on their butt ends. The are fastened with stainless steel staples. They share an open copper valley with the rear pitch of the main block; both pitches and the valley pitches were installed at the same time. The copper valley shows signs of some moderate wear indicated by the orange spots where the shingle courses drip on to it. There was no indication that these spots had worn thin enough to generate holes in the copper, nor was there any indication of leaks from it.

This pitch is near the end of its service life, and should be replaced within the next 2-4 years at most. Although the copper valley flashing can probably be left in place through the next generation of shingles, that would probably be a false economy.

Although outside the scope of this survey, the south pitch of the tea room roof was checked and found to be in very poor condition. It has a very heavy growth of lichen over it along with substantial surface erosion from UV exposure, and many fine splits in the shingles. The ends of some shingles were so thin and rotted that they disintegrated with very little effort. Like the ell roof the shingles are fastened with stainless steel staples. Like the front pitch of the main block, this roof should be reshingled within 1-2 years.

The chimney flashings on both the main block and the ell appear to be serviceable lead flashings but both have less than ideal installation details and some minor defects. At the ell chimney, the stepped flashings are each done as one piece flashings rather than base and counter flashings. The latter method is considered to be sounder. In the one piece flashings the exposed flashing on the side of the chimney is extended to go under the adjacent shingle about 3" to serve as a base flashing. The better way is to have a base flashing piece that is folded to go under the shingle about 4" and up the side of the chimney 4". A stepped counter flashing piece laps over the top of the base flashing 3" and is set in a reglet in the chimney mortar joints.

The flashings at the main block chimney are done as base and counter flashings with lead being used for both. Several pieces of the lead counter flashings on the south side of the main chimney have pulled away from the chimney and could generate leaks. However, photographs we took in 2003 show them to be unchanged from then. As noted above, face nailing of shingles through the lower apron flashings is a poor practice. Two missing shingles over the west side apron flashing are currently missing and were also missing in our 2006 photos of the chimney. The 2006 photos also show a tear in the east side apron flashing which we assume is still there.

While the existing one piece lead flashings at the ell chimney could probably be reused when the new roof is installed, it would be better to replace them with two piece stepped flashings using copper for the base flashings. The existing lead could be trimmed to serve as the counter flashings. As the flashings on the main chimney are quite messy with an excess amount of sealant being used to hold down the counter flashings, they would also benefit from replacement. The apron flashings at the bases of the chimneys should be replaced using 4lb. lead instead of the standard 2 1/2 lb. lead. as it less likely to crack from thermal movements over time.

New Roofing Details - Material options for wood shingles are western red cedar or Alaskan yellow cedar, both either as 18" "blue label perfection" grade for regular shingles with 7/16" butts, or "tapersawn" with 5/8" butts. Alaskan Yellow shingle bundles are likely to be mostly old growth, whereas red cedar bundles often have some second growth shingles which may have less longevity than old growth shingles. The tapersawn shingles may have greater longevity due to their extra thickness being able to withstand more surface erosion. Tapersawn shingles are more somewhat more expensive both in materials and the labor to install them. Being thicker, they look a little different on the roof, but the difference is subtle. 18th and 19th century shingles were similar in thickness to modern 7/16" butt shingles.

Installation over "cedar breather" mesh or spaced wood battens is thought to provide a longer service life by ventilating the underside of the shingles to prevent rot, but our observation of older roofs suggests that other factors usually cause the shingles to fail within 20-25 years regardless of the underlayment. Those factors include surface erosion and UV damage, and allowing organic matter to accumulate on the shingles. Some roofers believe that using pressure treated shingles, which are only available in red cedar, provides the best longevity. Installation directly over roofing felt is also thought to reduce longevity by reducing ventilation of the underside, but again other factors seem to prevail in limiting longevity.

Provided the Association is willing to accept the slightly thicker shadow line of the tapersawn shingles, tapersawn Alaskan yellow shingles will probably provide the longest service life and are recommended. We also recommend that the shingles be installed directly on the roof sheathing without felt paper or cedar breather. As the house is not heated and generating internal moisture from cooking, etc., the spaces between existing sheathing boards should provide some measure of ventilation to the underside of the shingles.

Nailing should be with type 316 alloy stainless steel ring shanked nails per the recommendations of the shingle manufacturers association sized to not penetrate completely through the roof sheathing. Hot dipped galvanized nails should not be used based on recent failures of hot dipped galvanized nails that were manufactured in China.

Assuming the shingles come in quite damp (which is usual) the spacing between shingles should be closer than the manufacturer's recommendation, perhaps about the thickness of an 8 penny nail. In other respects, the nailing and spacing of the shingles between successive courses should follow the published recommendations of the Cedar Shingle and Shake Bureau. While hand nailing is preferable, using nail guns is acceptable as long as the workmen demonstrate that the nails are not being over or under driven relative to the surface of the shingles. A triple starter course is

preferred over the conventional double course at the eaves. In the context of an historic house we do not like to use metal drip edges.

Shingles that are directly below exposed lead or copper usually last longer that shingles that are not because the wash from the lead prevents organic growth on the shingles. This effect can be seen below the chimney flashings on the Winslow House roof. Placing a strip of copper or lead under the ridge boards with about 2" exposed on the course of shingles would provide some protection for the upper courses of shingles. Adding strips at about every 10th or 12th course would increase the protection, but has aesthetic implications.

A 3' wide band of a waterproof membrane such as WR Grace "Ice and Water Shield" should be installed over the sheathing at all eaves, and across the valleys with 18" on each side. It does not hurt to bands 18" wide on the eaves and around the chimneys. Note that once installed on the sheathing the membrane will not be able to be removed in the future because of its adhesive. Given that the current sheathing is modern, this may not be a major concern. On buildings where the early sheathing remains in place, it is preferable to place 1/4" plywood over the sheathing and apply the membrane to the plywood so that it can be removed in the future without damaging the historic sheathing.

The flashing should utilize 16oz. cold rolled copper for the base chimney flashings and the open valley flashings (the latter secured with copper clips on the sides to permit thermal movement). Counter flashings on the sides of the chimney can be 2 1/2 lb lead (the existing can be reused if sound), and 4 lb. lead for the long apron flashings at the base of the chimneys. Lead-coated copper or plain copper could also be used for the counter flashings, the choice being an aesthetic one (lead is more consistent with historical appearance). The aprons should not be covered with shingles as they currently are. Rather they should lap over the top course of shingles covering their nails. Their lower edges can be held down with lead or copper clips with concealed nailing.

Roofing Treatment Recommendations:

> *The front pitch of the main block and both north and south pitches of the tea room should be replaced with new wood shingles within the next 1-2 years. The rear pitch of the main block along with both pitches of ell should be re-roofed within the next 2-4 years. It would be more cost efficient to do all the roof pitches at the same time. As separate projects the contractor's costs for administrative and mobilization will be charged twice, and the museum will undergo have more disruption from the construction. It is also recommended that all the associated chimney and valley flashings be replaced with the new roofs.*
>
> *Shingles: Tapersawn 18" Alaskan yellow cedar shingles; see discussion in above text for other shingle options and outline of installation procedures.*

C. Gutters and Downspouts

Gutters and downspouts were added to north and south sides of the ell and the west side of the main block in 2007. The gutters are "V" shaped wood lined with copper, and the downspouts are

wood with internal copper downspouts. The gutters and their copper remain in sound condition. At the time of the October site visit they were free of leaves and other organic matter.

The side seams of the wood downspouts are opening up. Efforts should be made to close up the joints, perhaps securing them with stainless steel screws or perhaps wrapping plastic or metal straps around them at intervals once the joints have been closed up. As there is an internal copper downspout inside it, this condition does not affect the functionality of the downspouts. These along with the French drains and replacement of the bulkhead done in 2006-7 appear to have eliminated the major seepage into the two cellars.

Gutters and Downspouts Treatment Recommendations:

> *Clean out leaves and organic matter from the gutters and downspouts at least once in the spring and fall, and more frequently if leaves accumulate throughout the fall. As part of the cleaning process a hose should be inserted into the top of the downspouts to make sure that any organic matter further down them is flushed out at the bottom of the downspout. Tighten up the joints in the wood downspout covers.*

D. Roof Framing and Sheathing

The roof framing of both the man block and the ell is a system of oak or chestnut principal rafter pairs with oak or chestnut common purlins spanning between them that in turn carry roof sheathing boards that run from the eaves to the ridge. In the main block each principal rafter pair is tied together with tie beams spanning between them about halfway up the roof pitch as well as the tie beams under the attic floor boards. Most of the rafter pairs appear to be original or early but some are 20th century replacements. One of the upper tie beams appears to be a 20th century replacement. The rafters in the main block are mostly sawn rather than hewn, but in the ell the three remaining original pairs appear to be hewn with a smoothly dressed surface. A considerable number of the purlins have been replaced with sawn oak of slightly larger dimensions than the original purlins.

All the sheathing in both the main block and the ell has been replaced with circular sawn random width pine boards. The replacement of sheathing and other replacement framing members was probably done as part of the 1920s restoration, as pre-1920 photographs show the building to be in quite poor condition. However, the replacement work could also be more recent, especially the sheathing.

The rafters are unusually small given their rather long span, especially in the main block. Most have been reinforced with struts running from under the tie beam joints down to the floor directly over the main tie beams that are under the floor. The struts have a variety of configurations. There have also been a variety of make-do reinforcements to the joints between the tie beams and the rafters. Despite size of the rafters and the make-do nature of the reinforcements, the principal rafters do not currently exhibit excessive deflection. Some of the purlins, especially the remaining early ones, do exhibit noticeable sagging along with the roof boards that rest on them.

Like many other 18th century historic houses, the roof framing does not conform to modern standards but has demonstrated empirically that it can withstand substantial snow loads, such as occurred two years ago. A cautionary note is that unseen insect damage or rot can significantly weaken the framing, and if recent can negate the empirical observations of the roof system. The joints between the ends of the principal rafters and the tie beams in the floor are particularly vulnerable. Temporary lifting of the sheathing boards over the principal rafter ends during reroofing is recommended to inspect, and if necessary to repair, the joints is recommended.

Several areas of particular concern were observed in the roof framing. These are illustrated in photographs 23 - 30B . Their locations are marked on Plan 1 showing the attic rafters on page 37.

One was at the first easterly rafter from the south gable end of the main block (plan 1 & photos 28-30). The purlin where it passes through the open mortise in the top of the rafter (the purlin spans two bays of the roof) has substantial rot. Similarly the top third of the rafter is badly rotted from the mortise down about 14". A strut has been placed under the rafter about a foot below the joint of the purlin, but this does little to support the purlin as it passes over the rafter. The roof sheathing over the joint does not exhibit any signs of rot or excessive leaking, so the condition of the purlin and rafter appears to predate the installation of the sheathing. While the joint does not exhibit signs of more substantial failure despite the rot, it warrants review and further reinforcement by a skilled carpenter with substantial experience repairing framing in significant 17th and 18th century houses.

At the first principal rafter pair from the north gable end the joints of the tie beam to both the east and west rafters show signs of both deterioration and make-do repairs that also warrants review by a skilled carpenter (Plan 1 and photos 30A & 30B).

Another area of concern is the attic floor framing to the east of the main stair where it carries the projecting roof cornice (plan 1 & photos 23-27). The lowest roof purlin and related cornice construction is carried on the east ends of the two north and south chimney girts (i.e., main tie beams). The bottom half of both beams has rotted completely away for several feet back towards the stair to about where they pass over the main roof plate. Here again the rot appears to have occurred some years ago before the roof sheathing was replaced. The main stair was extended up to the attic during the 1920s restoration including the current enclosure of the stair in the attic. The construction of the enclosure included struts to transmit the loads of the roof rafters down to the sound portion of the chimney girts. As a result the roof loads on the cantilevered, but substantially reduced, tie beam ends are relatively small with no signs of substantial sagging despite the obvious rot. This condition was photographed during the 2005 condition report work and does not appear to have changed since then. As a precaution, this condition also warrants review and possibly further reinforcement by a skilled carpenter with substantial experience repairing framing in significant 17th and 18th century houses.

Correction of the sagging purlins would require adding sister purlins adjacent to or in between the existing ones. From a practical point of view this would need to be done in conjunction with replacing the existing roof shingles if the Association desires to correct the sagging.

The current roof sheathing of 1" thick rough sawn pine boards dates to the 1920s restoration or perhaps mid-20th century repairs. It appears to be in sound condition. Random water stains likely date to leaks from previous wood shingle roofs. Its surface conforms to the deflection of the purlins which in turn is reflected in the plane of the wood shingles as viewed from the exterior. As a result the position of some of the principal rafters is visible as moderate ridges in the surface of the roof shingles. This can be viewed as "historic character". Where it is extreme it can cause the shingles to not lie flat, but can be somewhat reduced when installing new shingles by careful shimming on top of the sheathing to make the change in plane more gradual.

Roof Framing and Sheathing Treatment Recommendations:

Retain a skilled carpenter with substantial experience repairing framing in significant 17th and 18th century houses to review and repair as appropriate the following framing concerns as discussed in the text above:

First easterly rafter from the south end of the main block including the deteriorated purlin passing over it.

First rafter pair (i.e., both east and west rafters) from the north end of the main block at their connections to the upper tie beam and the struts below those joints.

Attic floor framing (north and south chimney girts, etc.) to the east of the main stair where it carries the projecting roof cornice.

During reroofing lift the sheathing boards over the principal rafter ends to inspect, and if necessary to repair, any substantial deterioration (if any) at these joints.

E. Chronic Cellar Dampness Issues

The 2005 Conditions Assessment noted that the building exhibited chronic interior dampness with substantial water seepage into the cellar spaces, and recommended a range of corrective measures. These included installing gutters and French drains at selected areas of the building perimeter, rebuilding the ell cellar bulkhead, installing industrial level dehumidifiers in the cellars, and tightening gaps in window frames. These measures were carried out in 2006-7. Other recommended measures included adding a low level of hot air heat to the cellars and first floor, adding mechanical ventilation in the attic, and systematic recording of interior temperature and humidity using computerized data loggers evaluate the extent that the various measures were effectively lowering the relative humidity. Of these only the data logging was done, and that ceased after a few years with the changing of executive directors. Other measures that have been taken included repointing defective cellar mortar joints, and installing a plastic sheet vapor barrier held own with gravel over the main kitchen cellar dirt floor.

The current condition survey included placing data loggers in the two cellars and the dairy (the room below the buttery) to record temperature and humidity from August 11 to October 15 of 2016. Visual observation of the two cellars on the days of our site visits did not show any signs of moisture penetration on the walls and floors in contrast to observations in 2006. We did not make any additional visual observations immediately following periods of heavy rain. However, Peter Krusell did check them after some periods of rain and did not observe any seepage.

The RH in the Dairy was between 70% and 75% for most of the time. The temperature was in the 70s until about September 25 when it ranged from about 60 to 65 degrees until October 15. A large dehumidifier in the room was reported to be operated during most of this period but may not have been operating properly. In 2004 from October 15 to November 1 the RH in this room was fairly constant at about 80% with the temperature mostly in the low 50s. This indicates a moderate, but not dramatic improvement.

In the cellar under the summer kitchen the RH ranged between 80% and 90% from 8/15 to 9/12. From then to 10/15 it fluctuated more widely from about 70% to 90% with an average of about 80%. The logs from 2004 started in mid-October and ran through January 15 of 2005 and also ranged quite widely from lows of about 70% to highs around 90% and sometimes 100%. Perhaps the highs occurred when water seeped into cellar through the bulkhead. That the current RH levels are similar to the 2004 values suggests that transpiration of moisture vapor from the dirt floor and masonry floor is the primary source of moisture. However, having current logs from November through January would make the comparison with 204 more informative.

In the main house cellar the RH was very similar to the summer kitchen cellar RH other than sometimes being a couple of percentage points lower. This suggests that the installation of the poly vapor barrier on the floor and pointing of the masonry walls has had little impact on the RH. Perhaps the cement footings for the various posts wick ground moisture up past the vapor barrier. More likely, it may be that transpiration of water vapor through the stone foundation wall is the major source. The new gutters and foundation drains appear to have substantially reduced or eliminated the seepage and ponding of water in the cellars, but have not greatly reduced the RH in these spaces. A dehumidifier that was present in the main kitchen cellar was not operating and is apparently defective.

Chronic Cellar Dampness Treatment Recommendations:

> *Utilize existing data loggers to record temperature and RH in the cellars as well as upstairs rooms for at least a year to better understand actual conditions. The period of logging done for this survey has not been done long enough to give a good picture of conditions over time.*
>
> *Repair or replace the dehumidifiers the main house cellar and dairy run them on a constant basis. Compare data log readings from the main house cellar with readings from the summer kitchen cellar to nudge the effectiveness of the dehumidifiers, as the both cellar spaces seem to have similar RH levels.*
>
> *Consider adding a hot air furnace in the main house cellar with humidistatic controls and minimal ducting to the kitchen cellar and first floor. That would be the most effective way to lower the RH in both the cellars and the main house museum rooms in the fall, winter, and spring.*

F. Other Cellar Issues

The original framing in the cellars does not appear to have deteriorated further since 2004 despite the continued high RH. Substantial supplemental framing and posts had been added prior to 2004 and remained in sound condition. Some of the added posts in the main kitchen cellar had been improved by placing cement footings under them and replacing screw jack metal posts with wood 4 x 4s.

As in 2004, it was not possible to check the condition of the framing under the principal front rooms because the framing is in a very shallow and inaccessible crawl space. In the future it would be wise to make an access hatch in one of the floors or devise some other method to partially view the framing.

The pointing that was done in 2006-7 to the foundation walls that are exposed in the cellars remains in sound condition. Some separations were observed between the pointing and the stones in the main kitchen cellar and were compared with photos from 2004. The same separations were present in the 2004 photos, and the pointing in that section had been done prior to 2004. It is important to note that some of the original pointing remains intact on some sections in the main kitchen cellar. It can be identified by its slightly pinkish tan color and the numerous fragments of shell on its surface. It should be retained and preserved.

A section of buckled plaster on the west exterior wall of the dairy has buckled more than it was in 2004. This is a result of its own weight and is not an indication of further foundation settlement or rotted framing.

The bulkhead into the summer kitchen stairs had been leaking badly into the cellar in 2004-5. The rebuilding of the bulkhead in 2006-7 appears to have cured that problem.

Recommendations for Other Cellar Issues

> *Check framing at least yearly for signs of active insect infestation and rot.*
>
> *Make an access hatch in one of the floors or devise some other method to partially view the crawl space framing under the front rooms.*

G. Other Interior Issues

Peeling Paint - The extent of peeling of the interior paint in a number of rooms is substantially worse than in 2004-5. For instance, in the parlor chamber both the plaster ceiling and the beam casings now have substantially more extensive peeling than in 2004-5. We understand there has not been any interior painting done since our previous report, but the primary cause is probably calcimine paint under the current paint. Modern paints do not bond well to the calcimine, and conditions that put stress on the weak bond generate the paint failure. Leaving the house completely unheated in the winter may also put stress on the paint from substantial changes in temperature and moisture. A buildup of modern paints can also be a factor from the weight of the accumulated paint layers.

The cure is not just simple repainting over the existing paints. The existing modern paints need to be scraped off to the extent feasible, and the remaining calcimine paint then washed off and/or sanded off as much as possible. New paint should then be primed with full coat of a so-called cal-coater (Benjamin Moore sells one) that is supposed to establish a bond with any remaining calcimine.

Kitchen Ceiling Decorative Paint - Comparison of photographs of the ceiling taken in 2004-5 with conditions this year indicate there has been no significant degradation of this important feature of the house. The addition of plywood in 2006-7 over the floor boards of the rooms above the kitchen ceiling was done to reduce the deflection of the boards to avoid stressing the decorative paint. That apparently has helped preserve the paint.

Hall (dining room) Floor - The 2004-5 assessment recorded that there was some insect damage to the surface of the floor boards. Several of the damaged areas currently have increased slightly in area, but no new areas of damage were observed. The increase is probably due to wear from foot traffic where old insect damage was likely present below the surface. Although the damage could be repaired by letting in small wood Dutchmen, repair is not a high priority.

Straw mat floor covering in the rear second floor rooms - The current straw matting was installed in 2006-7 in conjunction with the installation of the plywood over the original wood floor boards. Straw matting was frequently installed over second floor wood flooring in the 19th century during the summer rather than carpets. In this case the matting was intended as a period appropriate way to conceal the plywood beneath it. The matting is installed in narrow strips, as that was the way the material was made and installed in the 19th century.

Currently the edges of some of the matting are fraying and could present a tripping hazard for visitors. New matting should be installed to replace the damaged areas. The Association records should be checked to see if there is a record of the vender the matting was purchased from, and if they can supply matching new matting. If not sources will need to be researched. Historic New England may be able to provide sources.

Insect activity in the buttery - Signs of active powder post beetle activity (frass on the shelving) were noted in the 2004-5 assessment. Some frass was observed in the corners of the shelving during the current survey. This suggests that despite having the room treated by a pest control company (Safety Fumigants), the problem may still be ongoing. The first step would be to vacuum up all the frass and place white paper on the shelves in the suspect area. The paper can then be checked on a regular basis for new frass that may indicate current activity, and Safety Fumigants brought in to retreat the area as appropriate.

Gap between the main block frame and the southeast 2nd floor corner post of the ell - The cross hairs of the crack gauge installed across the gap in 2005 were checked and have not moved substantially since 2005. This indicates that the separation is due to some event many years ago and the relationship between the two sections is stable.

Recommendations for Other Interior Issues

At areas of peeling paint scrape off existing modern paints to the extent feasible, and wash off and/or sand off the remaining calcimine paint as much as possible without damaging the substrate. On woodwork use care to not flatten hand-planed surfaces. Prime with full coat of a "cal-coater" followed by a normal finish paint.

Routinely monitor condition of decorative ceiling and wall paint in the kitchen, and consult with an appropriate conservator if substantial deterioration is observed.

Replace frayed and worn straw matting in rear second floor rooms to match the existing matting.

Monitor insect activity in the buttery and retreat areas where current activity is confirmed.

G. Other Exterior Issues

Windows - New 18th century reproduction windows were installed in the existing window frames throughout the main house and ell in 2006-7. These appear to remain sound except that the exterior paint on the glazing compound is wearing off on some sash. To prevent the glazing compound from deteriorating it is critical that the sash be kept well painted. The sash in one window at the second floor south side of the ell had never received exterior glazing compound over the glass.

The window work included repairs to the frames to prevent water penetration at various gaps and where some sills had slipped down from their jambs. In the current assessment the sills of the two attic windows on the west side of the main block were observed to have dropped down abut 1/2" below their jambs and the sill of the southerly window was badly rotted. Perhaps the difficulty of accessing these windows prevented their being treated in 2006-7.

All the sash should be repainted on the exterior in the near future, and glazing compound should be installed on the one sash where it is missing. The sills of the two attic windows in the west end of the main block should be reset as needed to fit tightly to their jambs. The southerly window sill probably needs to be replaced.

Exterior clapboards and trim - Other than paint, the clapboards and trim remain sound. The weather checking in the corner quoins that was recorded in the 2004-5 assessment has not increased substantially. The old weather checking in the early window frames observed in 2004-5 remains largely unchanged and has not led to more rot. In the 2006-7 work it was decided to leave most of the weather checking alone rather than using epoxy fillers because the underlying wood was sound and epoxy fillers often trap water beneath them causing rot. The current conditions indicate that was a sound decision.

A small return molding at the head of the southerly window in the front entry porch is missing and allowing birds to nest in the cornice. It needs to be replaced in the near future.

Exterior Paint - Exterior clapboards and trim are painted with a semi-opaque stain that is wearing thin in many places and is no longer effective in preserving the clapboards and woodwork trim from damage (i.e., surface erosion and checking) by ultra-violet light and rain. On the soffit of the front roof cornice and the entry porch there is widespread peeling and blotchiness. The entire exterior should be repainted within the next 2-3 years.

Recommendations for Other Exterior Issues

Repaint exterior of all the window sash in the next 1-2 years.

Install glazing compound at one rear ell south facade sash that was never glazed.

At the two attic windows on the west side of the main block reset the northerly window sill to fit tightly to the jambs, and at the southerly window replace the sill.

Replace missing return molding at the head of the southerly window on the front entry porch.

Preserve the exterior clapboards and trim by repainting within the next 2-3 years.

III. BUILDING FABRIC HISTORY

While the basic history of the building and its development over time is documented in its listing on the National Register Nomination, many of the details are uncertain or not well documented. Our 2005 report briefly described some of the most significant elements but did not go into detail. The following discussion is derived primarily from our examination of the house and extant historical photographs during research for our 2005 report.

Original Construction

The traditional date for the construction of the house is 1699, but there is no firm documentation to confirm that date. Some sources suggest the date is based on the burning of "Carswell" which Issac had inherited from his father, while others refer to the 1700 date of Issac's marriage. The most thorough discussion of the dating question is contained in the 2004 University of Massachusetts Archaeological Survey Report which suggests the date is between 1700 and 1724 (pp 12-18). The style of the earliest surviving architectural elements of the house are typical of the transition of the first period into early Georgian that occurs from as early as the late 1690s to the 1720s. These features include the bold turnings of the front stair balusters and related woodwork on the stair (photo 59), a number of two panel doors with bolection moldings around fielded panels having very wide and shallow panel raisings (photos 61 & 62), the extremely large and bold bolection molding around the hall chamber fireplace opening along with bolection molded panels on the fireplace wall (photos 64 & 66), and the fireplaces in the hall and hall chamber, both having straight sides with curved back corners and inset brick panels on their back walls. There are also a number of two panel doors that lack bolection moldings but have panel raising that are very wide and shallow. These are in utilitarian rooms and probably are original, although they also could be a little later.

While the hall fireplace was heavily restored in the 1920s, there is enough evidence in the masonry to indicate its current configuration is reasonably accurate. The hall chamber fireplace still retains what may be original or early parging over the brick. Its relatively tall height in relation to its width

and straight rather than splayed sides are also typical of the late first period. The wood lintel of the hall fireplace appears to be original. It has a large wood Dutchman that was probably installed in the 1920s to correct fire damage from its use after the fireplace was reduced in size in the later 18th century.

There is also evidence at the east (front) window opening in the hall that it may have originally had double casement sash rather than sliding pairs of sash (similar to the current sash). The evidence for this is the pins for original studs in the girt above window. These pins are about 44" apart suggesting there is about 39"- 41" between these studs. For the installation of the current window frames (a type known as "plank frames") the window studs need to be no further than 37" apart and may be a little closer together. The plank frame overlaps the studs by about 1 1/2" - 2" with its jambs being nailed to the face of the studs in the overlap. Most likely the studs originally received the frame of a wider window (they may even have served as the jambs) such as a double casement. When the house was "modernized" with 12/12 Georgian sash in the mid-18th century, narrow studs would have been added to the side of the original studs to receive the new window frames.

To further confirm this supposition either the exterior wall or the interior wall would have to opened up to expose the framing. As the pins for the hall chamber widow studs are also visible on the girt in the hall (they are directly above the pins for the hall window studs), its east window would have been the same dimension. As the south wall girt is a modern replacement there are no pins in it indicate that the original south window was similar. All the other girts in the other principal rooms of the house are covered with casings that conceal the pins.

Based on the condition (i.e., lack of paint fragments and protruding pins above the joists) of the ceiling framing that was exposed in the 1920s restoration, the hall was originally constructed with a plaster ceiling on the underside of the joists, and the girts and summer beam were probably covered with board casings similar to the hall chamber (see photos #72 & 73 for the evidence). That the summer beam and the chimney girt do not have chamfers on their bottom edges is further evidence that they were originally meant to be covered with casings.

There is no remaining evidence as to how fireplace wall was originally finished. The raised and fielded paneling with an opening for a fireplace that is stored on the floor of the attic was probably present on the hall fireplace wall from the mid- or later 18th century until the 1920s when it was removed to "restore" the assumed first period appearance of the room. Its dimensions fit the width between the posts on the sides of the current fireplace. The position of the fireplace opening in the paneling relates to the position of the wood Dutchmen in the fireplace lintel. Its installation was likely the result of reducing the size of the original fireplace opening along with the other surviving Georgian period alterations to the west side of the house. Unfortunately there are no photographs that show the paneling in place prior to the 1920s restoration.

The winter kitchen and related pantry and buttery are likely original construction with some later 18th century alterations. The decorative painting on its ceiling and upper west wall is early if not original. Similar painting is present in the 1710 White -Ellery House in Gloucester, although whether its painting is original or from later in the 18th century is not known. The extent of the

decorative paint in the Winslow House kitchen is greater and more intact than most other surviving examples. It was a discovered when the later plaster ceiling and girt casings were removed in the 1920s restoration.

The kitchen fireplace was also reportedly found at that time when a later fireplaces was removed (one description of the restoration states that three later fireplaces were removed). Although we did not measure the bricks, they appear to be larger than normal mid-late18th century brick, which is typical of first period brick. The NR nomination states that the lintel is carved with hex signs, but the carving seems more like random early graffiti. Whether the vertical board sheathing above the fireplace is early or a product of the 1920s restoration is not known. The kitchen shelving on the north wall is of unknown age, but likely no later than ca. 1800.

The door into the hall is original, having a bolection molding, and the door on the angled closet to left of the fireplace is also likely original having a wide, shallow panel raising without a bolection molding. The doors to the pantry and buttery, the rear ell, and the cellar stairs are board and batten doors probably from sometime in the 18th century. The left jamb of the door to the rear ell (photo 85) has a half dovetail mortise that probably was cut to receive a bar to secure what was originally a rear door of the house (i.e., before the rear ell was added).

The combination of the lower dairy and upper pantry off the kitchen is a very rare e survival from the early 18th century. The spaces are probably original. The pantry shelving is probably original or early. Based on residual paint and nail holes in the joists, the pantry originally probably had a plaster ceiling, and the walls and shelving were likely whitewashed. The brick noggng set in clay in the upper portion of the dairy west wall (photo 41) is another indication that the rear ell was added some time after the construction of the main block, as nogging was usually only used in exterior walls.

The closet door below the front stair has bolection molded panels as does the paneling adjacent to it. Both are original as is the closed stringer of the stair. The stair balusters and related woodwork are remarkably similar to the front stair at the Bryant-Cushing house in Norwell, MA. That house is believed to date to 1698. The section of the Winslow House stair that rises to the attic was added in the 1920s restoration. As noted in the NR nomination, the front extension of the stair hall is a later 18th century addition, and the current front door was installed in the 1920s to replace the then existing Victorian door. Three of the doors that open into the stair hall are original 2 panel doors with bolection moldings. The 2 panel door to the parlor replaced an earlier door when the parlor was remodeled in the mid 18th century. Its panels are set in thumbnail moldings that are typical of last two thirds of the 18th century.

The rear rooms on the second floor are utilitarian with minimal plain woodwork. They do have exposed summer beams (really binding beams), wall girts and posts. Some of the summer beams and posts are finished with minimal chamfers further substantiating late first period construction for the house.

Mid-18th century Alterations

As noted in the NR nomination substantial remodeling occurred in the mid-18th century, presumably by General John Winslow who inherited the house in 1738 following the death of his father Col. Issac Winslow. The remodeling focused on the parlor, the parlor chamber, the hall (its remodeled elements were removed in the 1920s restoration), and the exterior of the house. The parlor received a paneled wainscot, paneled fireplace wall with fluted pilasters flanking the fireplace, and new two panel doors. The panels on both doors and wall paneling were set in thumbnail moldings, and the beveled raisings of the panels were shorter and steeper than on the original doors (photo 63). The fireplace surrounds are bolection moldings of a size that were typically used between the 1730s and 1760s. Whether these were installed ca. 1750 or are restorations from the 1920s to replace later 19th century woodwork is not known. Examining their paint layers in comparison to the paint layers on girt and post casings would probably clarify their origin. The original fireplace openings were likely larger (especially in the parlor), and were reduced to their current size as part of the ca. 1750 remodeling. The delft tiles around the openings were added in the 1920s restoration.

Ca. 1750 woodwork in the parlor chamber is limited to the 2 panel doors in the west wall, the window casings, and the bolection molding at the fireplace opening, assuming it is not a 1920s restoration.

The north wall of both the parlor and the parlor chamber likely each had a single window in the center of the wall similar to the current south wall of the hall and hall chamber. Altered studs revealed during the 2006-7 repairs to the parlor chamber windows indicated that the current window placement is not original (photos 78-80). While the evidence revealed was not sufficient to determine the position of the earlier windows, its is logical that they matched the south wall.

Exterior changes in the mid-18th century included updating the exterior to reflect Georgian fashions with corner quoins, a formal front entry vestibule, new clapboards, and probably new windows if our speculation that the original windows were casements is correct.

19th Century Alterations

Late 19th century photographs document changes to the exterior including six over six light window sash (probably from the first half of the 19th century, a Victorian style entry door, a porch added to the south and part of the east sides of the house, and deep slanting hoods added over the top of windows on the south side. The rear ell had a one story shed roofed projection of unknown date on its west end. Photographs dated 1916 show the house exterior in very poor condition with many clapboards missing. The added porch had been removed along with the window hoods, and the attic portion of the south gable had shingles instead of clapboards.

The only known Pre-1920 photographs of the interior document the hall chamber (photo 65). These show the room to be essentially as it is now except that the fireplace opening had been closed up with a sheet metal stove in front of it. One of the photos shows that its floor was covered with straw matting.

A written description of the restoration by Arthur Winslow in 1926 states that "recent woodwork and fireplaces were removed and walls cleaned". Another description in a 1920s pamphlet refers to removing the later plaster ceiling and fireplace infill in the kitchen. There is no information as to whether the parlor and parlor chamber fireplace openings had been closed up (most likely they were) and whether the existing bolection molded surrounds were present.

In the case of the hall fireplace, 18th century paneling was removed to restore the original opening and is now stored on the floor of the attic (photo 70). An area of unpainted wood around the opening suggests that whatever moldings were present to frame the fireplace opening had been removed sometime before the restoration work was done. The paneling has a two tone paint scheme similar to paint shown in the earliest photo of the parlor chamber woodwork.

There are other woodwork components that are also stored in the attic that were apparently removed during the restoration. Some of these may also have come from the hall. One appears to be the top board of a wainscot having a bolection molding on it that may have been a chair rail (photo 74). Other tall boards having an angled cut at one end may have been from 18th century woodwork removed to restore the front staircase. Rigorous paint analysis might clarify which elements came from the hall.

The 1920 Restoration

The restoration replaced the 6/6 window sash with various configurations of 8/12 and 12/12 sash intended to replicate the 18th century windows, although they had early 19th century muntins rather than wider 18th century ones. Clapboards were replaced and probably at least some of the window frames and corner quoins, and the front door was replaced with an 18th century style door. As noted above, later interior woodwork was removed in the kitchen, in the hall, and possibly the front stair. Paint was removed from the front staircase woodwork and the various original doors in the hall and kitchen. Paint was also removed from the woodwork in the pantry. The hall fireplace masonry was repaired to restore its original configuration. Delft tiles were added around the fireplace openings in the parlor and parlor chambers. Whether the current bolection molded surrounds were also added is not known. The one story shed at the back of the rear ell was removed and the team room added to it. Work in the rear ell included the construction of a fireplace to interpret the ell as a summer kitchen.

Rear Ell

The age and origin of the rear ell has been a matter of speculation for many years. One theory described in the NR nomination is that it was a component of an earlier 17th century house (possibly the Josiah Winslow or the Edward Winslow House), and was moved and added to the main block by Gen. John Winslow in the 1750s, perhaps to replace a previous ell. The fact that its east end wall is a complete frame that is independent of the west end wall frame of the main block supports the concept that it was moved from a previous location and added to the house. Usually, but not always, an addition constructed at the site is joined into the frame of the existing house. Some details of the west wall of the main house indicate that the west wall was originally

constructed as an exterior wall. For example, brick nogging set in clay that is present between the studs of the upper west wall of the buttery. Similarly, a pattern of evenly spaced small nail holes in the exterior side of the west wall sheathing suggest it may have originally been finished with clapboards, although the 2 1/2" spacing of the holes indicates unusually tight coursing for clapboards. That the posts and some girts of the rear ell have well formed but simple chamfers that are quite different in character from the visible framing in the main block further confirm that it was not constructed on site at the same time as the main block.

The framing style of the addition is known as "plank frame" construction. It consists of posts and beams but does not utilize studs except perhaps at windows. It is sheathed with vertical planks (usually 1 1/2" - 2" thick) that rise from the sills up to the roof plates. When studs are used, as in the main house frame, the sheathing boards are horizontal and are nailed to both the posts and the studs (in the 17th century clapboards are sometimes nailed directly to the studs without any sheathing). Post and beam framing with studs (sometimes called "stud framing") is commonly used throughout the first period as well as the entire 18th century, and is the method used in the frame of the main block.

In Essex County plank framing typically is used from about 1684 to the 1720s (most examples are after about 1700), but a few examples occur as late as the last quarter of 18th century. In other parts of New England it is used into the 19th century. This would seem to make it unlikely that the rear ell originated as part of the earlier Winslow houses, although it could have been a later addition. However, a 1969 article on early Plymouth Colony houses in *Old Time New England* by Richard Candee states that plank framing was more commonly used in the 17th century than stud framing in the Plymouth Colony. The evidence for that assertion was primarily written descriptions of buildings that vanished many years ago, rather than observation of extant houses. Based on the Candee article, an earlier origin for the ell is plausible, but more research should be done regarding the framing of extant Plymouth Colony First Period houses.

The evidence does suggest that the rear ell was probably constructed on a different, unknown, site during the first quarter of the 18th century or perhaps earlier, and moved to join the main block later in the 18th century. Careful examination of the existing fabric at the junction of the ell to the main block might reveal evidence regarding both the ell and the main block. Dendrochronology might also clarify the date of the ell.

Dendrochronology

In the absence of good documentary evidence, The most reliable way to verify the dates for both the main house and the rear ell is dendrochronology (tree ring) dating. To that end the house was visited by Daniel Miles of the Oxford University Dendrochronology Laboratory and Anne Grady in 2002 to do an evaluation of the house for dating. Unfortunately, Dan found that the chances of dating the main block were less than 50% because most of the timbers had excessively rapid growth and at that time there was not a good master chronology of tree rings for southeastern Massachusetts. He felt the chances of dating the rear ell were somewhat better. The text of a 2005 memo he wrote to Karen Goldstein summarizing his findings in the 2002 visit follows below. The Association decided not to spend the money for the dendrochronology work based on the low

chance of success. In a recent conversation with Anne Grady, she was not sure as to whether a better master chronology has been developed since then. Michael Burrey, who has taken samples for a number of other houses may be aware of the current state of the master chronology.

Anne Grady has asked me to write to you and explain what the chances of dating the Winslow House in Marshfield. Sorry not to have written earlier, but have been tied up all week sampling various objects in Westminster Abbey and have not got back until late in the evenings.

We assessed the Winslow house a two or three years ago, and felt that the front range had poor dendro potential, due primarily to the principal timbers being fast grown, with few growth rings, and with other timbers, which might have some limited potential being of uncertain provenance, i.e. replacements, repairs, or second-hand timbers inserted. The roof purlins also looked unsuitable due to their extreme small cross-sectional area - sampling them would weaken them too much. I cannot remember whether the ceiling joists were either suitable or exposed, or whether they were coated with historic paint finishes which might preclude sampling.

The second-phase extension to the house did seem to have some timbers which looked more promising, from what I can remember.

I would also say that buildings in south-east Mass have proved difficult to date due, we think, in the wet, low-lying landscape producing complacent growth rings in trees. Given the above, I would say that the chances of dating the early part of the house are slim, but that the rear part would have better chance of success, but still not outstanding. Very little has been dated in this part of Mass, but we did have some success with the Bradford House in Kingston.

That not withstanding, we would not want you to proceed with the idea that we are likely to come up with a date. Both the geographical situation and suitability of the timbers accessible give less than 50% chance of dating. And we would need to spend more than the average amount of resources in getting a good number of samples to give the best chance of dating. I would add that if we were not successful in dating, the data would be retained and tried against any future sites which might come up in the south east. But at the end of the day, you might spend $2,000 plus and not have anything to show for it, at least in the short term. But there is a chance that something might be found for the second phase.

Please let me know if you have any further questions I can help you with.

Daniel Miles
Oxford Dendrochronology Laboratory

Paint Analysis

Rigorous cross section analysis of the paint layers on various architectural features is a method that is often used to determine the relative dates of the features and alterations within individual rooms, but was beyond the scope of this study. In the future, paint analysis would be a useful method to determine whether the bolection moldings around the fireplace openings in the parlor and parlor chamber were added in the restoration or are original to the mid-18th century alterations, and whether the beam and post casings pre-date the alterations. It would also aid in sorting out which of the architectural fragments in the attic were from the hall and whether any predate the fireplace paneling.

Comparative Examples

The Bryant-Cushing House in Norwell is believed to have been built in 1698 by Deacon Thomas Bryant. It is very similar to the Winslow House in plan, and has a nearly identical front stair and related paneling adjacent to it with bolection moldings. Drawings of the house in the Historic American Building Survey also record two additional interior doors having bolection moldings similar to the Winslow House. The NR Nomination for the Winslow House states that a Thomas Bryant built the house for Issac Winslow but gives no other information about him and does not mention the Bryant-Cushing House. According to the NR nomination and other descriptions of the house from the Norwell Historical Society, Thomas Bryant was a carpenter as was his father who emigrated from England in 1643. The NR states that Thomas had a sawmill, but other documents state that his brother John had both a saw mill and a gristmill and do not mention Thomas as having a sawmill. Obtaining additional information on Thomas Bryant and his family would be useful. The NR and other documents from the Norwell Historical Society are attached in the Appendix of this report.

The White Ellery House in Gloucester has similar 2 panel doors with bolection moldings. It also has early decorative painting in its rear first floor rooms similar to the Winslow House. The house has been firmly dated to 1710 both through documentary records and dendrochronology. The ceilings of the front rooms were originally finished with plaster on the bottom of the floor joists, except the parlor chamber which had exposed joists until the early 19th century.

There is another house in Marshfield that reportedly has similar decorative painting.

Photo 1: Overview of the front (east) pitch of the main block roof showing extensive lichen growth on the shingles. There is a hump where the shingles are over a principal rafter with a visible sag on each side of the hump that follows the existing sag in the purlins and roof sheathing. In installing new shingles the abruptness of the hump could be smoothed out with graduated shims on the sheathing at each side of the rafter. The shingles on this pitch were installed in 1988 using galvanized nails and are at the end of their service life.

Photo 2: Detail of the front pitch shingles showing the lichen and numerous short splits in the shingles starting at the butts. Dampness is held on the roof by the lichen causing the shingles to rot at their butts.

Photo 3: Detail of the front pitch shingles showing one shingle that has slipped off the roof and another slipping down. The arrow points to where the butt end of a shingle is disintegrating from rot. The shingles on this pitch are beyond their useful service life and should be replaced within the next 1-2 yeears.

Photo 4: Overview of the rear (west) pitch of the main block roof. These shingles were installed in 1995 using stainless steel staples rather than nails. Some of the staples have come loose, but most are still holding.

Photo 5: Detail of the rear pitch. Arrow points to one of several places on this pitch where the vertical joints between shingles are in alignment for three successive courses in violation of normal installation standards. Such alignment can generate roof leaks.

Photo 6: Copper valley between the rear main block pitch (right) and the rear ell south pitch (left). Leaks have been reported in the attic from the area to the right of the valley, but no obvious defects were observed in that area. The shingles on both of these pitches are fastened with stainless steel staples. The ell roof was installed at the same time as the rear main block roof in 1995.

Photo 7: Detail of the copper valley in photo 6. The orange areas indicate wear to the copper from water running off the shingles, but their are no holes from the wear. Pushing on the copper at the wear spots indicated the wear is currently very minor.

Photo 8: Overview of the south pitch of the rear ell roof and the ell chimney. From this vantage point the shingles appear to be sound, but when examined close up there is considerable wear to the surface of the shingles from ultra-violet (i.e, sun) exposure coupled with erosion from water runoff.

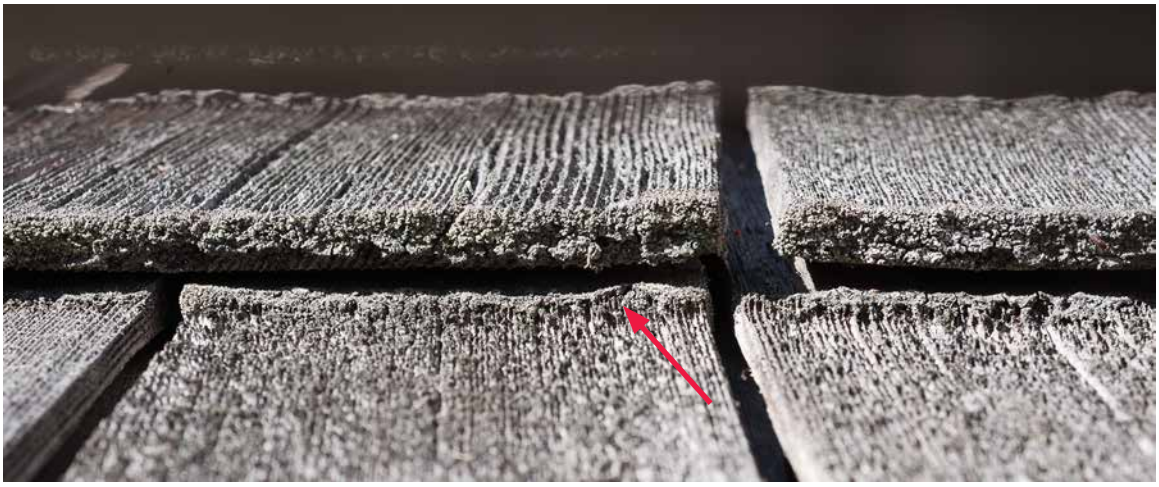


Photo 9: Detail of the south pitch of the rear ell roof shingles showing the extensive erosion to the surface of these shingles that has reduced their original thickness by about 1/3 or more. Their original thickness is visible just under the butts of next course above (arrow).

Photo10: Close up detail of the south pitch of the rear ell roof shingles showing the extensive surface erosion starting abruptly below the butt line of the course above (circle).

Photo11: Section of the south pitch of the tea room roof showing extensive deterioration from surface erosion and lichen growth. While outside the scope of this assessment, this roof clearly should be redone at the same time as the main house front pitch roof. A number of shingles in this photo can be seen to have broken off at the butt line of the course above them. These shingles are also fastened with stainless steel staples and were installed in 1991.

Photo12: Detail of the south pitch of the tea room roof showing where the butt of a shingle is rotted clear through and disintegrating.

Photo13: The gutters installed in 2007 remain in sound condition and were clear of organic debris at the time of our site visit in October. It is important that they be inspected and cleared of any organic debris on a regular basis.

Photo14: gutters showing the top of the downspout. When cleaning the gutters the downspouts should also be checked and cleared of any debris.

Photo15: The wood downspout casing is coming apart at its seams (arrow). It is not clear why this is happening as there is a copper downspout inside it. This one needs to be taken down , its sides drawn together, and then refastened.

Photo16: Photo taken in 2006 showing the chimney flashing not properly seated against the chimney. Their condition is currently unchanged.

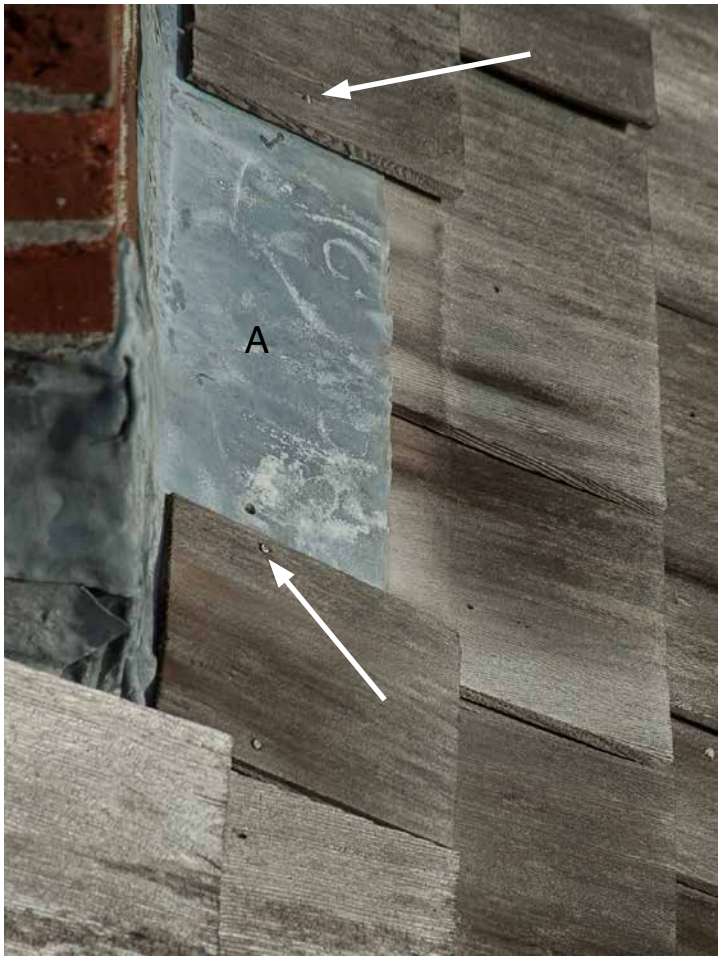


Photo17: Photo taken in 2006 showing the top course of shingles face nailed (arrows) over the lead apron on the downhill side of the chimney and one shingle missing (arrow)with one of its nails sticking out of the flashing and the other leaving a hole in the flashing. Such face nailing can cause leaks. The top course of shingles should be under the flashing with its nails covered by the flashing. If there is a concern about the lead being lifted by the wind, cleats with concealed nailing should be used to hold its lower edge down on top of the shingles. The flashing remains in this condition currently including the missing shingle.

Photo18: Photo taken in 2006 showing a large tear (arrow) in the lead apron flashing on the front side of the chimney. The tear was probably caused by fatigue failure from thermal stress in the long strip of 2 1/2lb. lead. Long exposed pieces of lead should be done using 4 lb. lead to avoid fatigue failure. The flashing remains in this condition today.

Photo19: Photo taken in 2006 showing the bluestone cap on the main block chimney. The white arrows point to hairline separations between the mortar and the bluestone, the black arrow points to a void in the mortar joint. These defects are probably now worse and can allow water infiltration into the chimney flues. The cap should be inspected when the roof is replaced and defective mortar joints redone. Each piece of bluestone is likely over an individual flue. Replacing a couple of bricks with ventilator bricks would help prevent excessive moisture penetration into the flues due to high internal humidity.

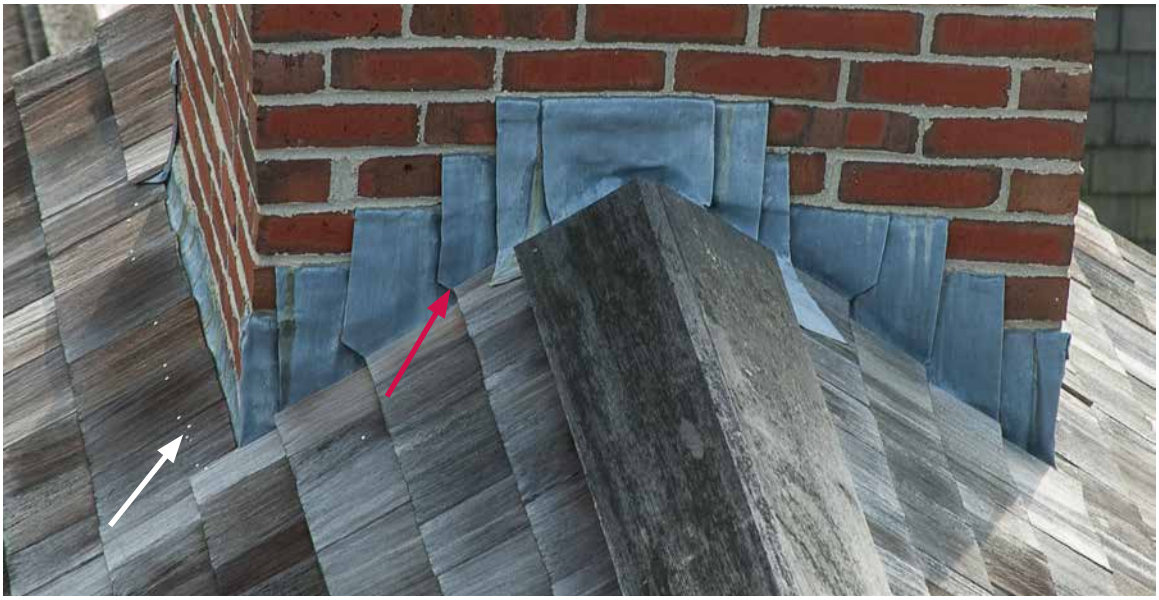


Photo20: Photo taken in 2006 showing the flashing at the rear ell chimney. The white arrow points to face nailing through shingles placed over the apron flashing, which is a problem as discussed at Photo 17. The red arrow points to the lead step flashings that appear to be done as a single piece extending under the shingles. The preferred method is to install two piece flashings consisting of a base flashing and separate counter flashing that covers the upstand of the base flashing. If these lead flashings remain sound they could be trimmed to properly lap over new copper base flashings when the roof is redone.

Photo 21: Photo taken in 2005 showing the crack gauge between the main block on the left side and the southeast corner post of the rear ell just after it was installed. The purpose of the gauge was to determine if there is any current movement between the two portions of the building.

Photo 22: Photo taken in 2016 showing the current position of the red cross hairs on the crack gauge shown in photo 21. The purpose of the gauge was to determine if there is any current movement between the two portions of the building. The slight difference in the position of the cross hairs between the two photos is probably due to the camera angle in photo 21being slightly off center (above and two the left of the cross hairs) whereas in photo 22 it is straight over the cross hairs. The photos demonstrate that there has been no significant movement over the last ten years and the relationship between the ell and the main block is stable. The original cause of the separation is not known, but it was once covered by a piece of trim that extended from the unpainted portion of the corner post to the plaster lath on the left.

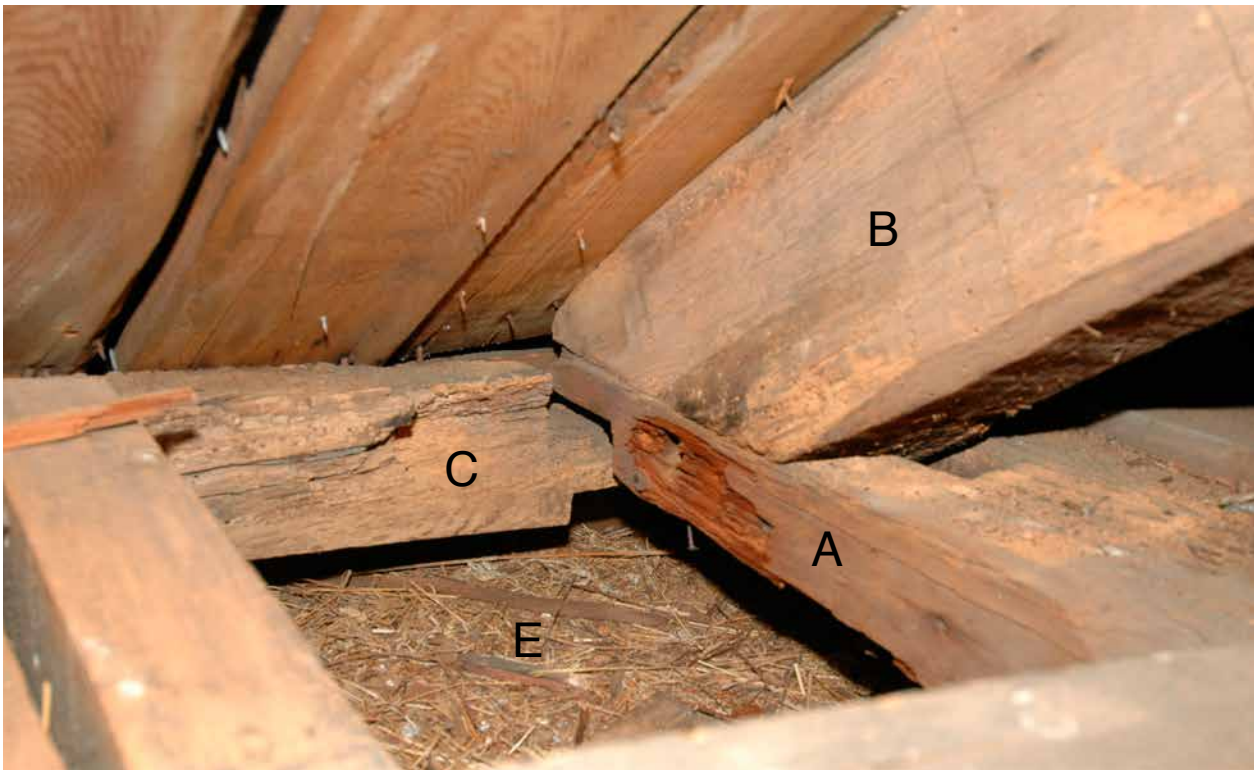


Photo 23: Photo taken in 2005 of the end of the southerly chimney girt (A) and rafter (B) above the front entry. "C" is lowest common purlin that carries the bottom of the roof sheathing over the roof cornice and soffit. The debris at "E" is on top of the cornice soffit. The bottom half of the girt has rotted away.

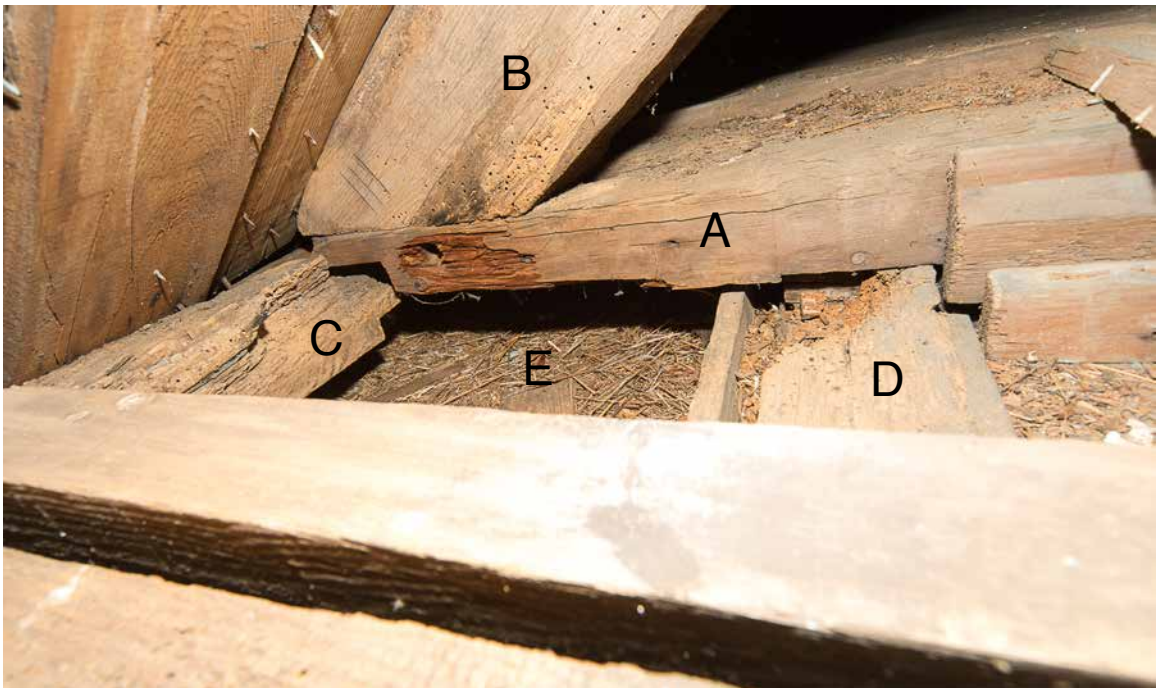


Photo 24: Photo of the end of the southerly chimney girt taken in 2016 showing that its current condition is essentially the same a in 2005. "D" marks the east wall plate (i.e., roof plate) which carries the chimney girt as it passes over it. The end of the girt and the rafter are essentially cantilevered beyond the roof plate. The roof cornice at this location when viewed from the exterior does not show any major sagging or deformation.

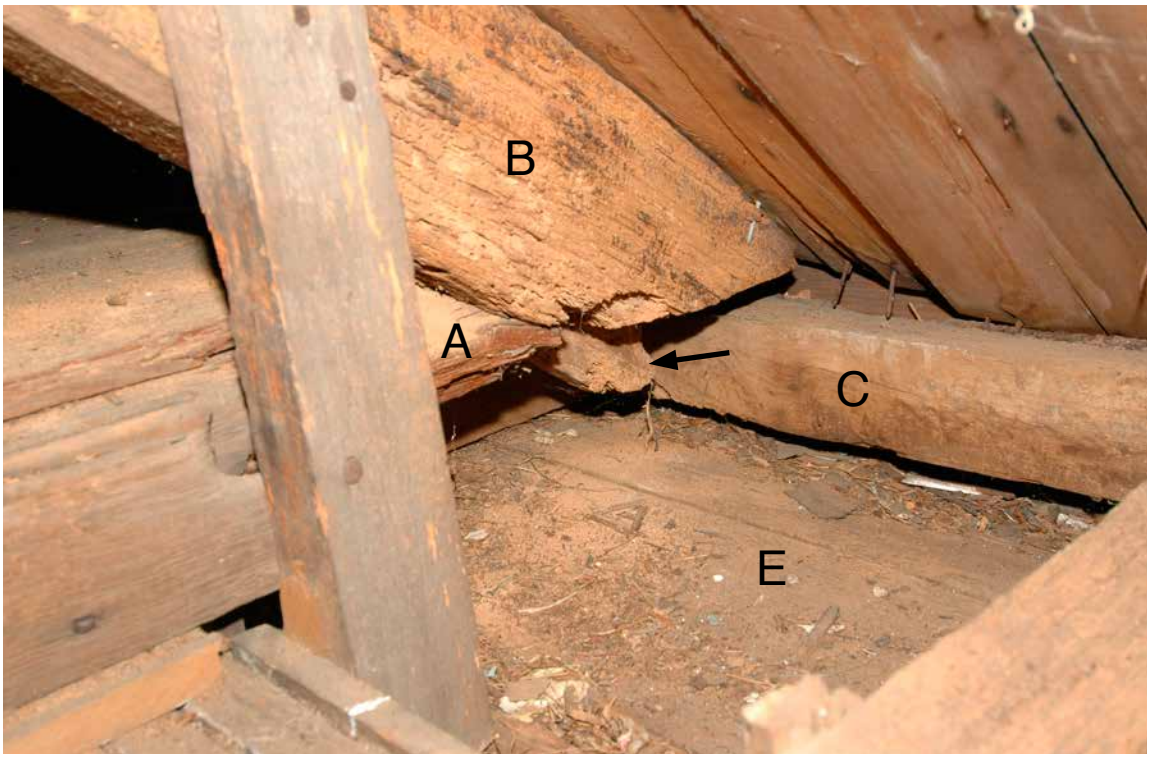


Photo 25: Photo of the end of the northerly chimney girt taken in 2005. The boards forming the cornice soffit are marked "E". The arrow points to the tenon of the rafter that was originally housed in a mortise in the chimney girt. The mortise along with the bottom half of the girt has completely rotted away.

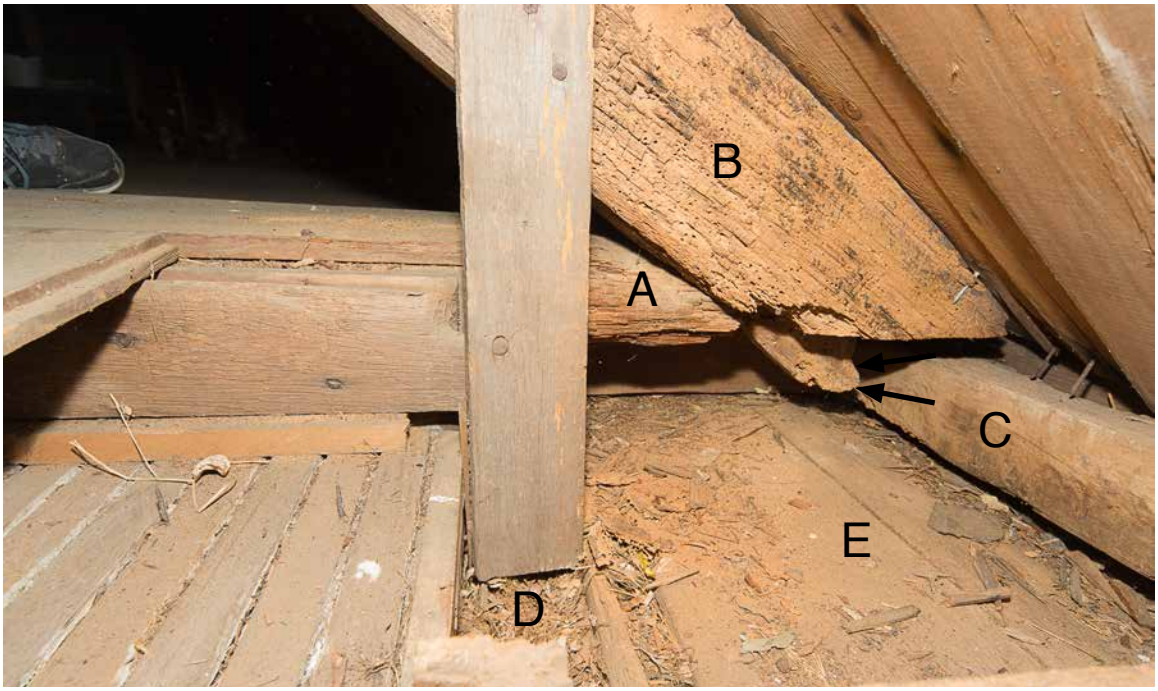


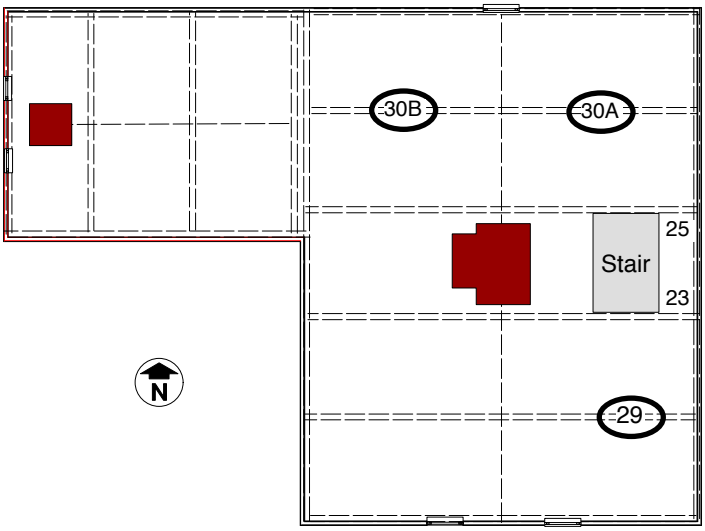
Photo 26: Photo of the end of the northerly chimney girt taken in 2016. The boards forming the cornice sofitt are marked "E". As at the northerly chimney girt, current conditions are unchanged from 2005.

Photo 27: Photo taken in 2016 showing the southerly chimney rafter (B) and the south side of the ca. 1920 attic stair enclosure. The arrows point to an angled post a stud that are seated on the sound portion of the southerly chimney girt. These are probably transferring a significant portion of the roof load from the rafter to the girt. The framing on the south side of the enclosure is similar.

Photo 28: Photo looking toward the south end gable wall showing substantial sag in the common roof purlins as well as past rot in the rafter marked by the arrow. The purlins are undersized by modern standards and their sag has probably been present for many years.

Photo 29: Detail of the rafter (A) marked with the arrow in photo 28 and the purlin that passes over it (B). The strut marked "C" was added some time ago to help support the damaged rafter. The upper third of the rafter is severely rotted, as is the purlin where it passes over the rafter. As the roof sheathing does not show rot above the rafter, the damage must have occurred prior to the installation of the current roof sheathing.

Photo 30: Overview of the damaged rafter and purlin in photo 29 showing the strut (C) that been added to carry loads from the weakened rafter down to the girt under the floor boards. While it probably has prevented failure of the rafter, it does not prevent future failure of the purlin where it passes over the rafter. The conditions at this location should be evaluated by a carpenter with substantial ex-peirence repairing 18th century timber framing and repaired as needed.



Plan 1: Plan of attic. Double dashed lines are principal roof rafters. The numbers refer to photographs of specific areas of concern.

Photo 30A: Junction of rafter tie beam with easterly principal rafter with make-do strut below the joint. The photo is looking toward the north attic gable end. The arrows point to what may be stress cracking. Numerous exit holes in both the rafter and the end of the tie beam indicate past insect activity at this joint. Further evaluation of conditions at this joint is warranted.

Photo 30B: Junction of rafter tie beam with the westerly principal rafter looking toward the north attic gable end. The portion of the rafter from the bottom of the tie beam upwards appears to be a modern replacement that is spliced to the portion of the original rafter that remains below the tie beam. The arrow points to checks in the underside of the rafter that appear to originate at the splice joint. Further evaluation of conditions at this joint is warranted.

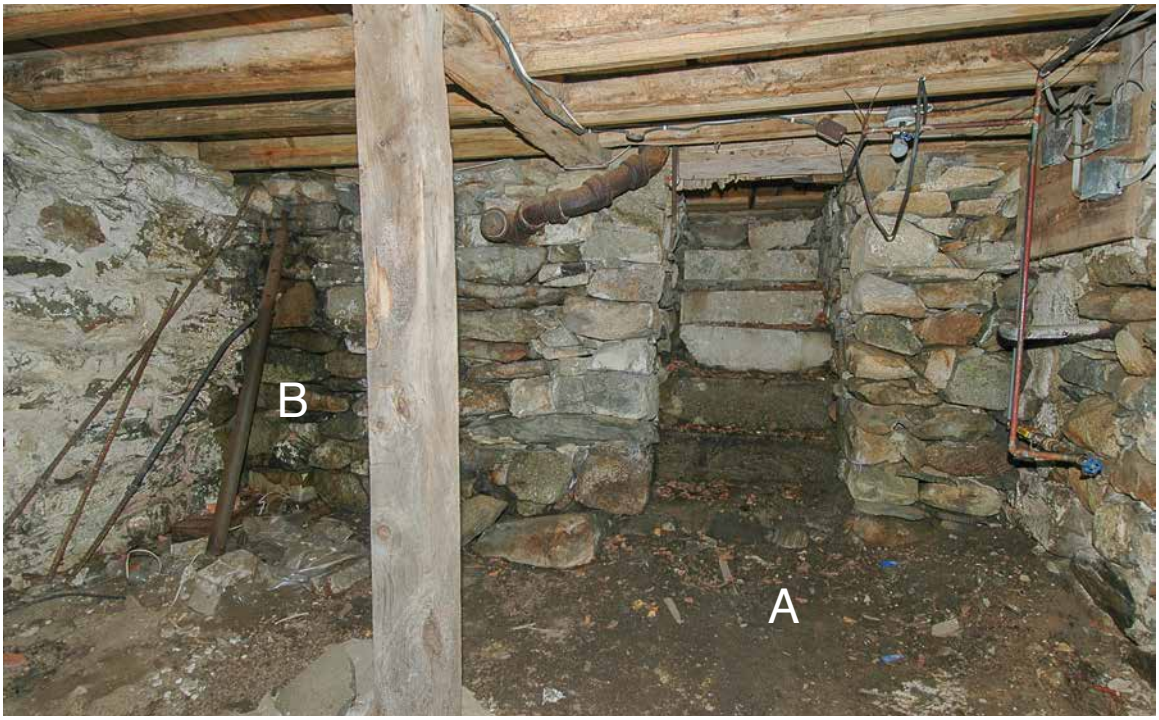


Photo 31: Overview taken in 2005 of the south end of the cellar below the rear ell showing excessive moisture seeping into th space. The darkened soil at "A" is very wet from water seeping in through leaks in the bulkhead at the stairs. The foundation wall at "B" is also dark from water seeping in below the junction of the ell with the main block.

Photo 32: Overview taken in 2016 of the south end of the cellar below the rear ell. The walls were repointed in 2006-7 along with rebuilding the bulkhead cover and adding gutters below the roof. The soil was dry and there were no signs of seepage through the foundation wall. Examination by Peter Krusell after periods of heavy rain did not show any signs of seepage. That the data logs recorded this year still showed high relative humidity is probably a function of vapor transmission from the soil and the foundation walls.

Photo 33: Overview taken in 2005 of the south end of the main block cellar below the kitchen showing excessive moisture seeping into the space indicated by the dark areas on the dirt floor and the foundation wall.

Photo 34: Overview taken in 2016 of the south end (left) and north side (right) of the main block cellar below the kitchen showing the repointing of the foundation done in 2006-7 and the gravel installed over the dirt floor. There are no signs of substantial seepage.

Photo 35: Overview taken in 2005 of the main block cellar below the kitchen looking towards its north end. Dark areas on the dirt floor indicate excessive moisture seeping into the space. Some of the support for the ceiling framing is provided by metal screw jacks which are not considered stable for long term support.

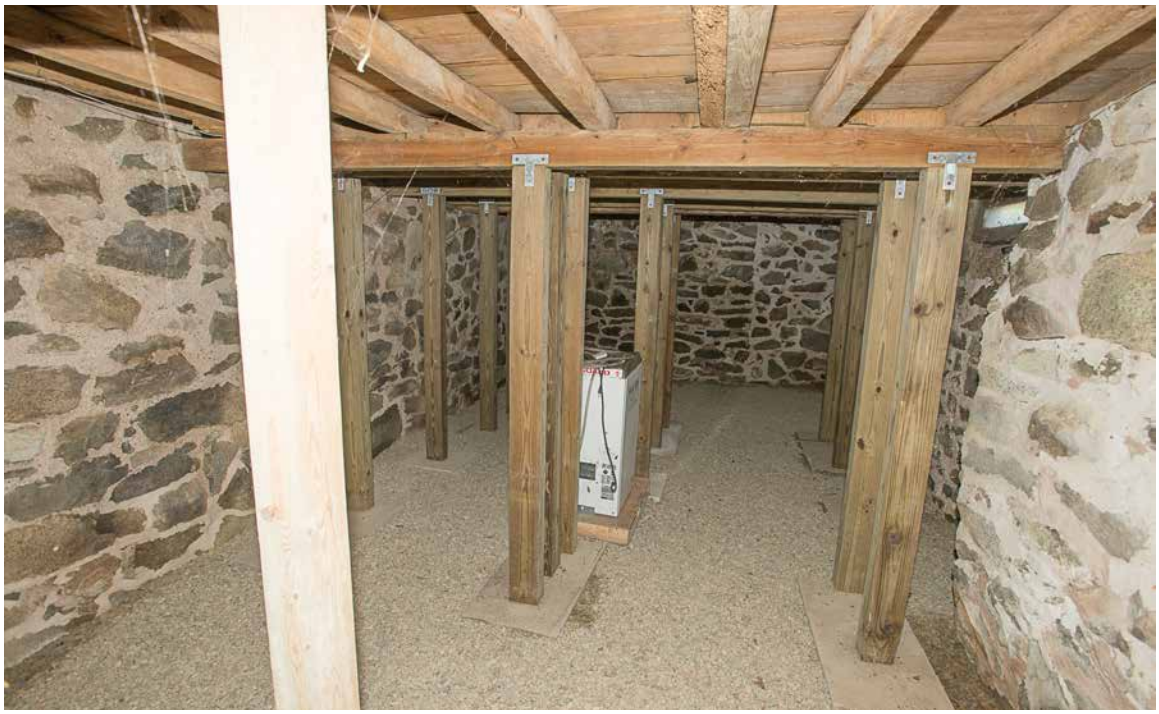


Photo 36: Overview taken in 2016 of the main block cellar below the kitchen looking towards its south end. The dirt floor ha been covered with a plastic vapor barrier with gravel above it. The metal screw jacks have been replaced with wood posts footed on concrete pads. There are no signs of significant seepage, although the RH remains high.

Photo 37: Photo taken in 2016 of the main block cellar below the kitchen showing a small section of its west wall that has some voids in the joints where the mortar butts the stone. The voids due not show up in this photo, but comparison with the 2005 photo shows that both the cracks and the existing mortar predate 2005 and are not a concern.

Photo 38: Detail of the mortar joints in the east wall of the main block cellar. The mortar is probably original to the house or very early as it has numerous particles of shells in it that indicate it was made by burning sea shells rather than limestone. It has a distinctive light reddish brown color. As a rare survival of very early mortar it should be retained and preserved. Is is generally in sound condition.

Photo 39: Buckled plaster on the north wall of the dairy. The buckling is more severe than it is in the 2005 photo below. It does not, however, indicate structural issues. It is simply collapsing from its own weight. It could be carefully re-secured to the studs behind it using plaster washers and screws to preserve it.

Photo 40: Photo of the north (right) and west walls of the diary in 2005 showing the buckled plaster on the north wall. The mortar joints in the foundation wall are severely eroded.

Photo 41: Photo of the west walls of the diary in 2016 showing the repointing of the foundation that was done in 2006-7. There is brick nogging set in clay mortar between the studs which suggests this wall was originally an exterior wall of the house.

Photo 42: Photo of the north and west walls of the pantry in 2016. It probably had a plaster ceiling when originally constructed, as there is no remnant of whitewash above the bottom of the joists and on the wall girts.

Photo 43: Photo of the northwest corner of the buttery showing recent frass (arrow) from wood boring insects (probably *anobia* - commonly called powder post beetles). Although has been treated several times since 2005, the insects continue to persist.

Photo 44: West attic wall of the main block showing two windows where the sills have slipped down exposing the tenons of the jambs (arrows). The frames of these two windows were not repaired in the 2006-7 work, perhaps because access was difficult.

Photo 45: Detail of the southerly window showing that the sill has partially rotted away around the tenon of the right side jamb. This sill needs to be replaced.

Photo 46: Window sash on the west side of the main block where the red finish paint has worn off exposing the white glazing putty. Without sound paint over it, the putty will dry out and crack and require expensive glazing replacement. The window sash should be repainted next year.

Photo 47: Window sash on the south side of the rear ell that never received exterior glazing putty. This window should be glazed next year.

Photo 48: Clapboard siding where the paint (actually a semi-opaque stain) has weathered to become thin and blotchy, and no longer provides adequate protection to the wood surface against deterioration from ultra-violet light and moisture.

Photo 49: The underside of the front roof soffit is very blotchy indicating it needs to be repainted.

Photo 50: The corner quoins had weather checking in 2005, and the current extent of checking appears to be about the same.

Photo 51: The weather checking in th window head does not appear to be worse than it was in 2005. The metal flashing on top of the cap needs to be tacked down tight to the cap.

Photo 52: The condition of the decorative paint on the kitchen ceiling appears to be the same as it was in 2005 based on comparison with the photo below and others that were taken at that time.

Photo 53: The the decorative paint on the kitchen ceiling in a 2005 photo. As an example, the arrow points to a large area of loss that is also marked with an arrow in the 2016 photo above.

Photo 54: 2016 photograph showing substantial paint peeling on the beam casings and plaster ceiling. While there some paint peeling visible in the 2005 photos, the current extent of peeling is much worse. The primary cause is probably calcimine paint under the current modern paint.

Photo 55: Another 2016 photograph showing substantial paint peeling on the beam casings and plaster ceiling of this room. Other than the parlor chamber, the most substantial peeling was occurring in the rear rooms of the main block.

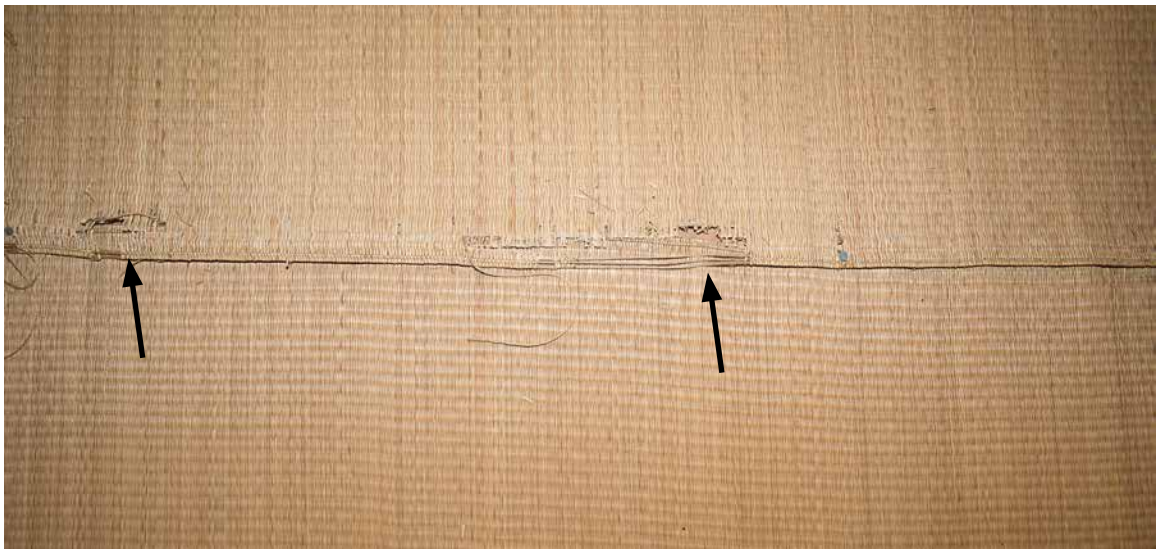


Photo 56: Wear on the edges of the straw matting (arrows) on the floor of the second floor kitchen chambers. This wear poses a tripping hazard for visitors. The matting should be redone with new matting similar to the existing. It was installed as a period appropriate floor treatment to cover the plywood sheets that were installed over the original floor boards to stiffen the floor and prevent loss of paint on the kitchen ceiling

Photo 57: 2004 photo of damage to the surface of the floor boards in the hall (dining room) due to past insect damage. The arrow points to the area marked with an arrow in photo 58.

Photo 58: 2016 photo of the same area of damage to the surface of the floor boards in the hall shown in photo 57. The extent of damage has slightly increased since 2005, but is still quite limited.

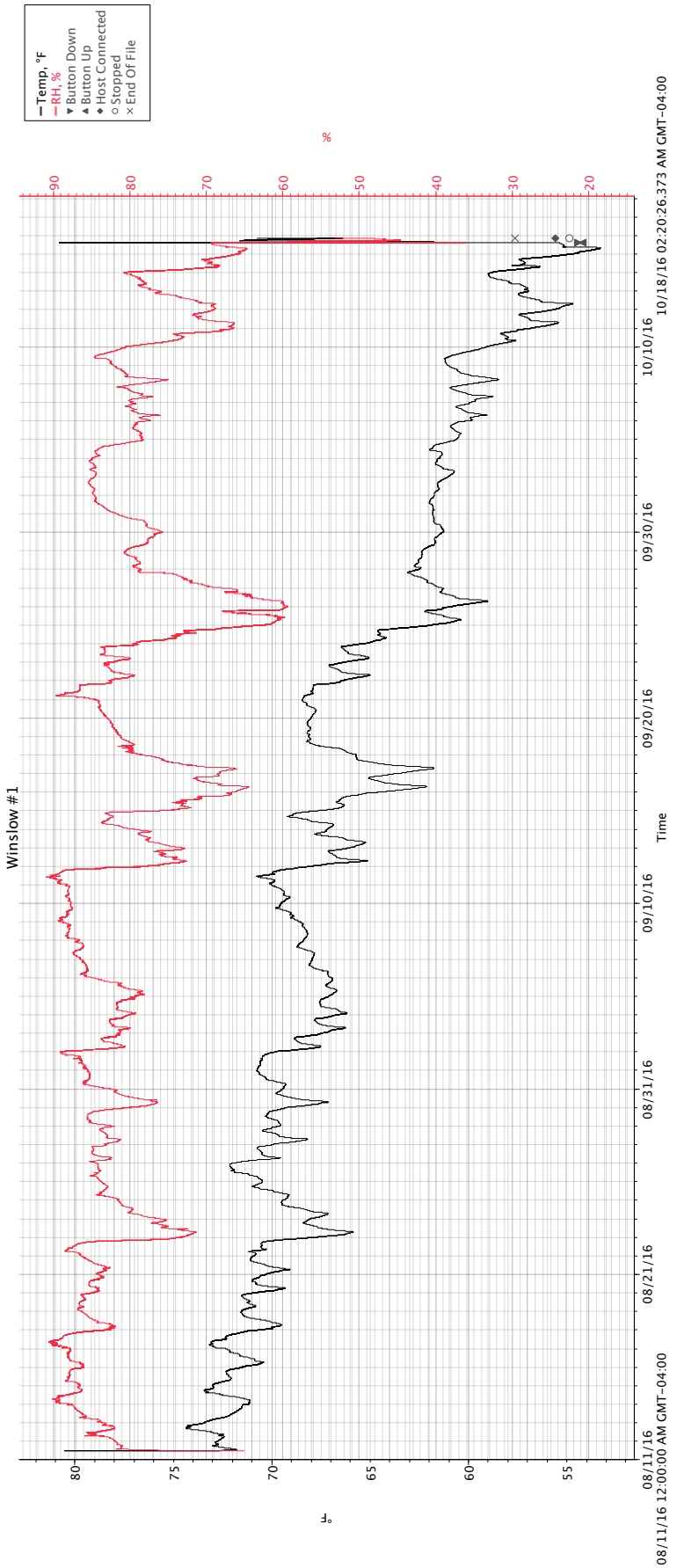


Figure 1: Graph of temperature and humidity in the main house cellar recorded from August 11, 2016 to October 17, 2016. The red graph is the relative humidity (RH) with the RH scale on the right side in red. The black graph is the temperature with its scale on the left side in black. Readings were recorded every 10 minutes throughout the period.

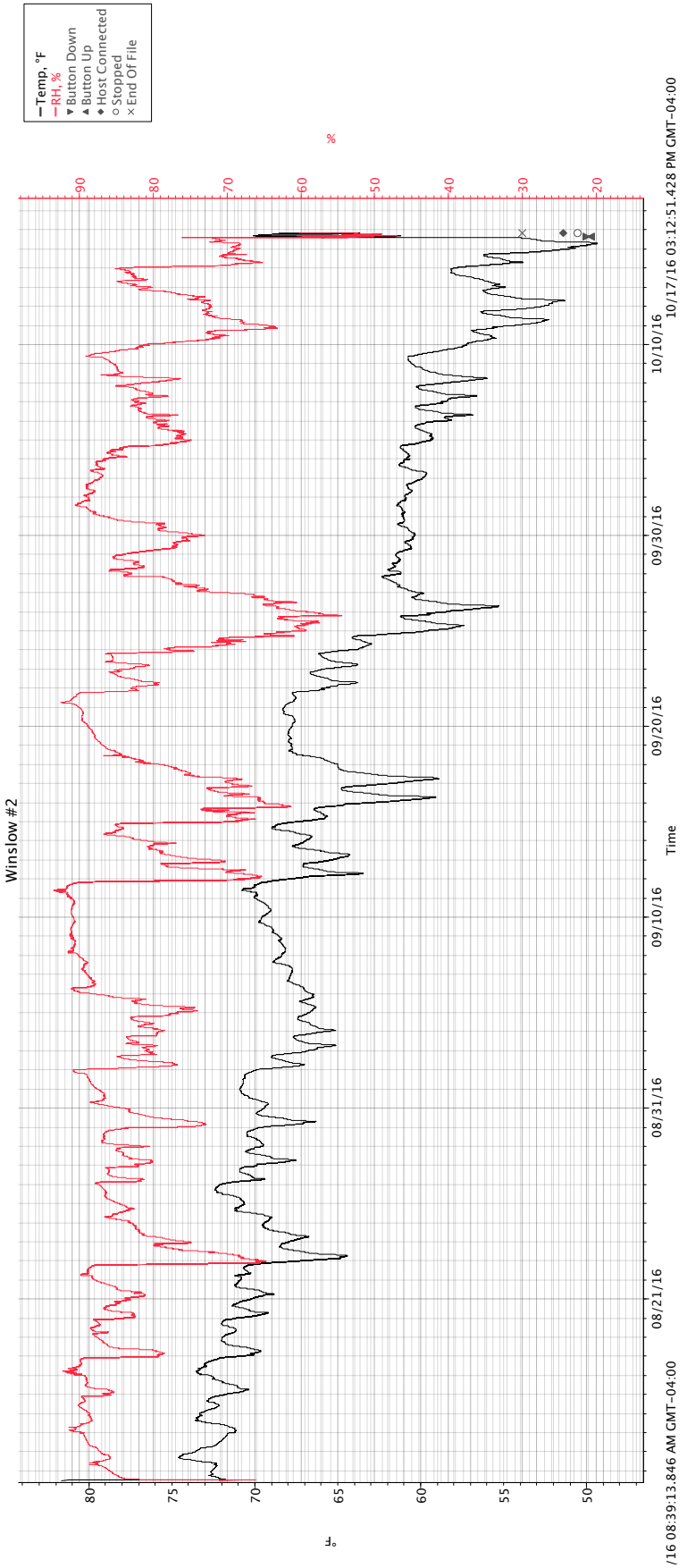


Figure 2: Graph of temperature and humidity in the rear ell cellar recorded from August 11, 2016 to October 17, 2016. The red graph is the relative humidity (RH) with the RH scale on the right side in red. The black graph is the temperature with its scale on the left side in black. Readings were recorded every 10 minutes throughout the period.

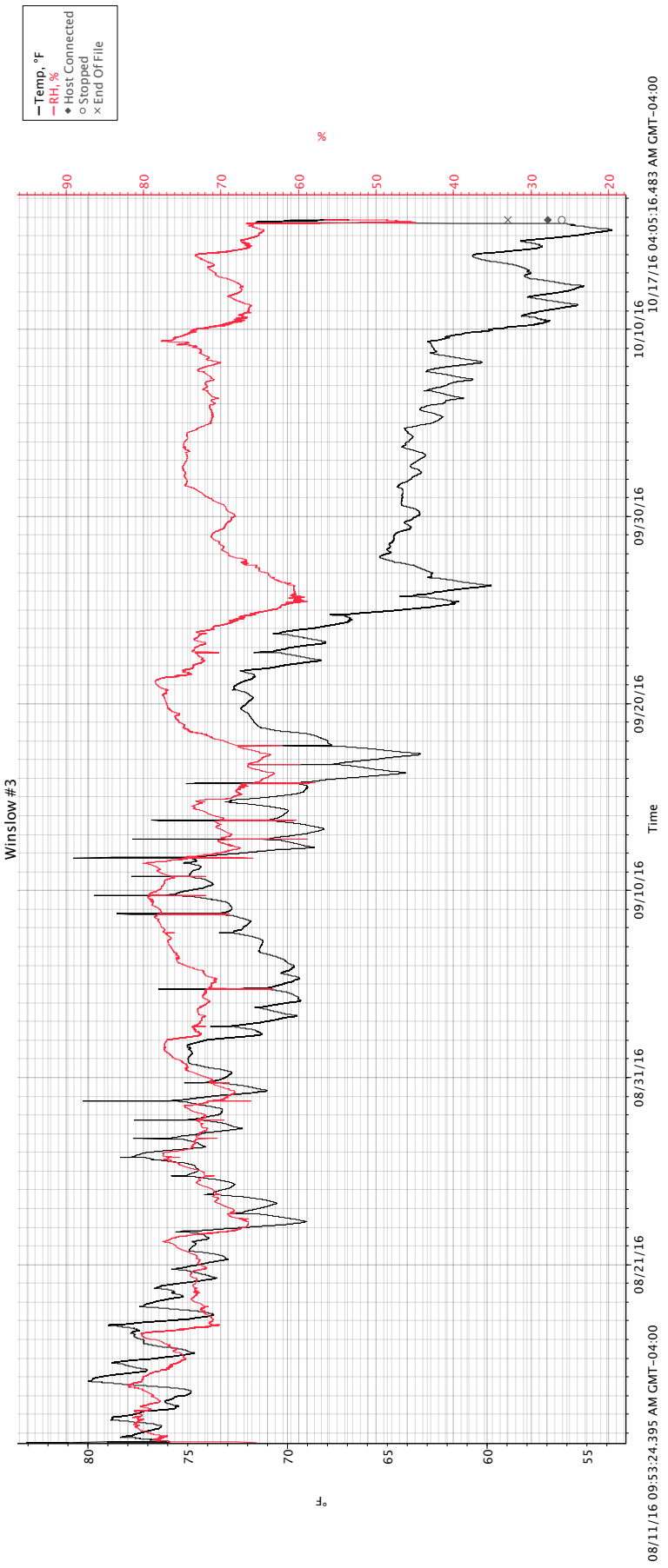


Figure 2: Graph of temperature and humidity in the diary recorded from August 11, 2016 to October 17, 2016. The red graph is the relative humidity (RH) with the RH scale on the right side in red. The black graph is the temperature with its scale on the left side in black. Readings were recorded every 10 minutes throughout the period. While a dehumidifier was running in this space through most of the period, it is believed that it was not functioning properly and was therefore not effective.

Photo 59: Main stair and adjacent woodwork at the Winslow house showing bold turned balusters and bolection moldings on the paneling and closet door that are typical of late first period detailing.

Photo 60: Main stair and adjacent woodwork at the Bryant-Cushing House in Norwell with nearly identical detailing including the bolection moldings on the panel and adjacent closet door. The NR nomination for the Winslow house states it was built by a Thomas Bryant, presumably the same Deacon Thomas Bryant associated with the Bryant-Cushing House. *Photo from HABS documentation of the Bryant-Cushing House.*

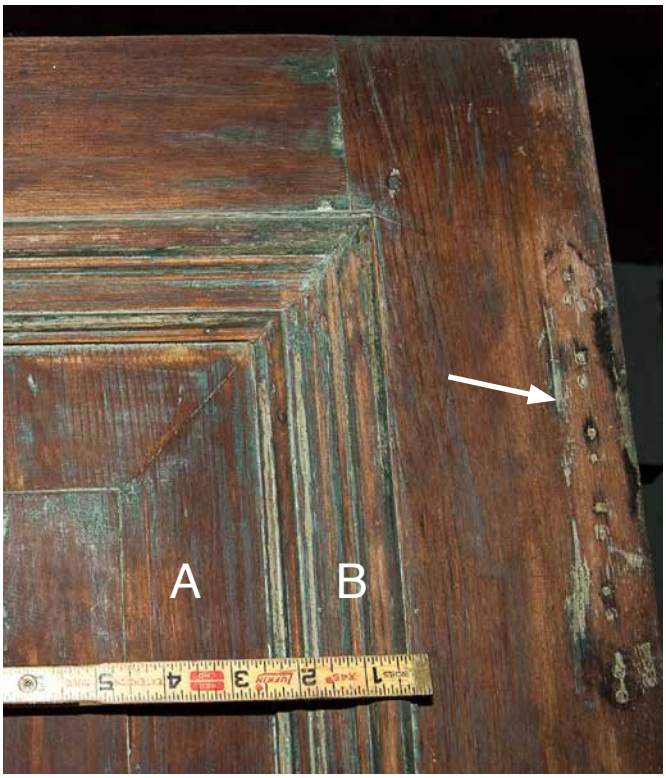


Photo 61: Portion of an original door showing its typical late First Period detailing. The bevel on the raised panel is about 2 1/2" wide with a shallow angle (A), and the panel is framed with a wide bolection molding (B). The arrow points to the ghost of an original wrought hinge with foliate ends. Apparently the door was rehung during the restoration with the hinge on its other side.

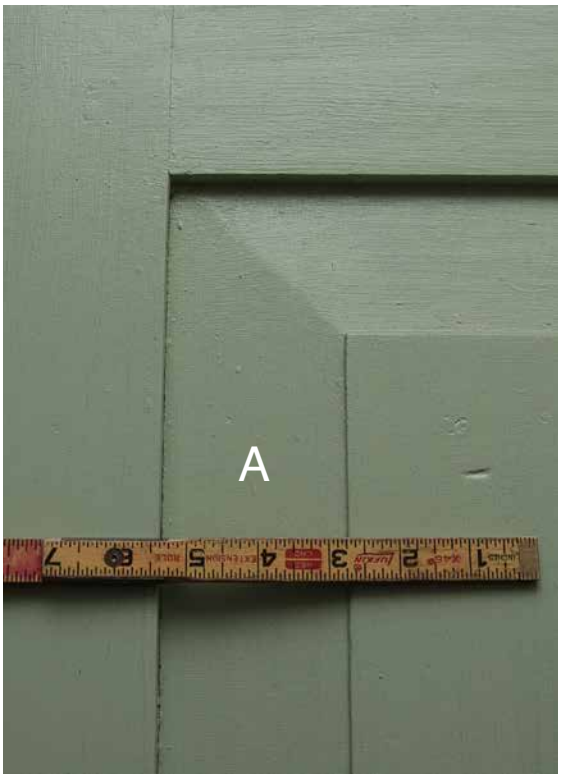


Photo 62: Portion of a door that lacks a bolection molding but has the same 2 1/2" wide bevel (A) on the raised panel as the door in photo 61. It also is likely original to the house and lacks the bolection molding because it is located in a secondary utilitarian room.

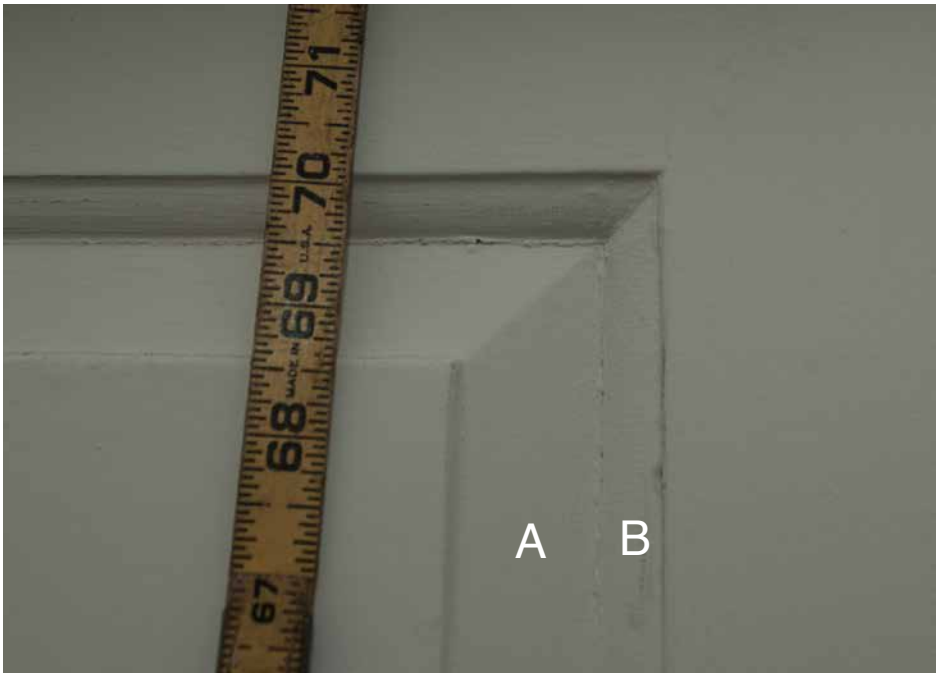


Photo 63: Portion of a door that dates to the Georgian remodeling of the mid-18th century. It has a much shorter and steeper bevel on the raised panel (A), and is framed with an ovolo (i.e., thumbnail) molding (B) that has been worked on the edges of the rails and stiles. This and the other similar doors in the house are two panel doors. Doors from later in the 18th century had similar panel bevels and moldings, but were usually 4 panel or 6 panel doors.

Photo 64: Hall chamber showing original fireplace, bolection molded paneling, and fireplace surround with an extremely bold and large bolection molding. The masonry forming the fireplace also appears to be original and is largely untouched including what is likely original mortar parging over the bricks. The height of the fireplace relative to its width is also typical of first period chamber fireplaces.

Photo 65: Photo from the late 19th century of the Hall chamber showing its Victorian two tone paint scheme. The fireplace opening has been covered over to install the stove, but in other respects the woodwork is unchanged today from this photo. The arrow points to straw matting on the floor. *Photo from the Winslow House Archive.*

Photo 66: Detail of the original paneling on the hall chamber fireplace wall showing the wide panel bevels surrounded by bolection moldings similar to the door in photo 61. Note that the application of the bolection moldings on the fixed panels is reversed from the doors. The hinge in the lower left corner is an original wrought iron hinge with foliate ends.

Photo 67: The interior of the space around the chimney looking from the hall chamber end towards the parlor chamber fireplace wall (A). The back wall of the main staircase is on the right (B). It is somewhat curious that these walls are framed with boards rather than studs. That the gaps between the boards are fairly wide indicates that they did not form the finish to the staircase or the parlor chamber. The lath and plaster on them date to the 18th century as the lath are clearly riven and of uneven width and may be the original finish.

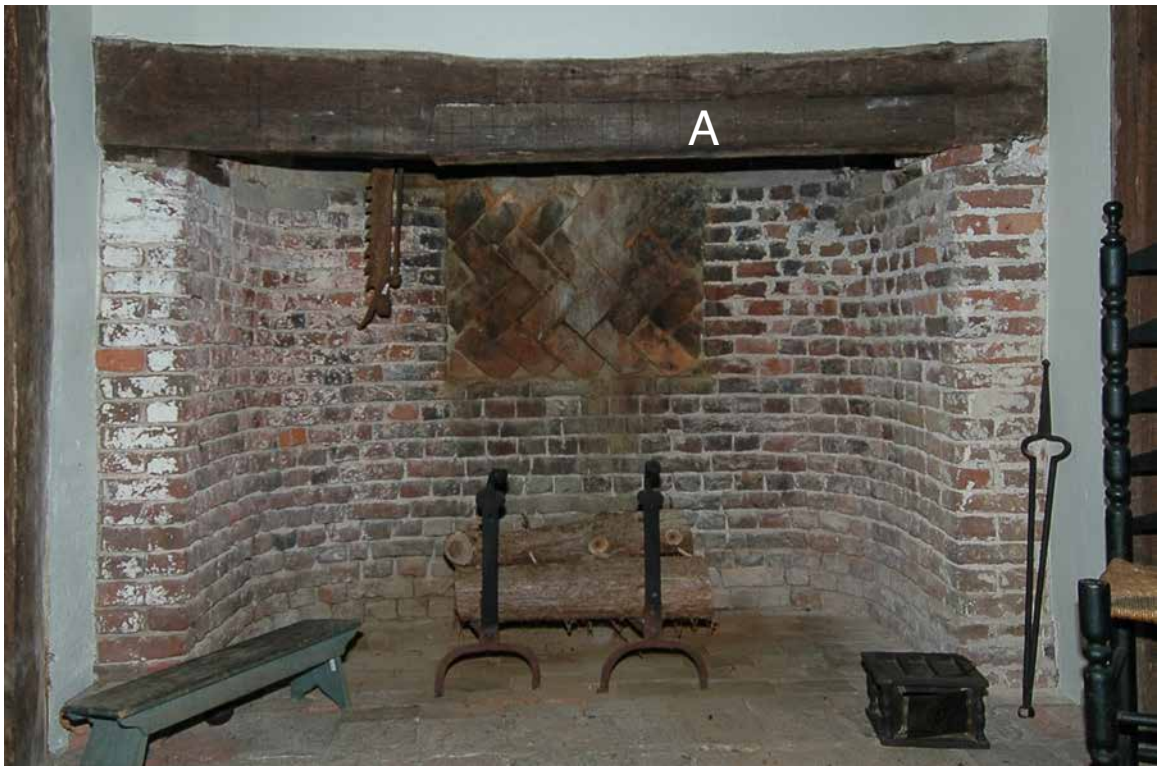


Photo 68: The current appearance of the hall (dining room) fireplace is the result of the 1920 restoration that removed later masonry infill that had reduced the fireplace to a smaller size to fit the wall of paneling that had been installed in the second half of the 18th century. Although there are no records indicating how much of the brickwork was found intact, its size and basic form with rounded rear corners is probably accurate. That the herringbone panel is laid up in clay suggests it is original. The lintel with its Dutchman infill (A) that corresponds to the location of the later fireplace is also original.

Photo 69: Looking up the throat of the fireplace, the char across the full width of the current opening indicates the original width was as restored. The 1920 Dutchman is again marked "A".

Photo 70: Mid-late 18th century paneling that is stored on the attic floor. There is no record of where it came from, but its 7' 10" width matches the original hall fireplace opening width suggesting it was removed from the hall in1920. Its two tone color scheme is similar to the Victorian appearance of the hall chamber woodwork. That there are no marks from plaster lath on indicates it was still exposed at the start of the 1920 restoration. The bare wood around the fireplace opening suggests its molded surround had been removed to fit some later infill over the fireplace masonry.

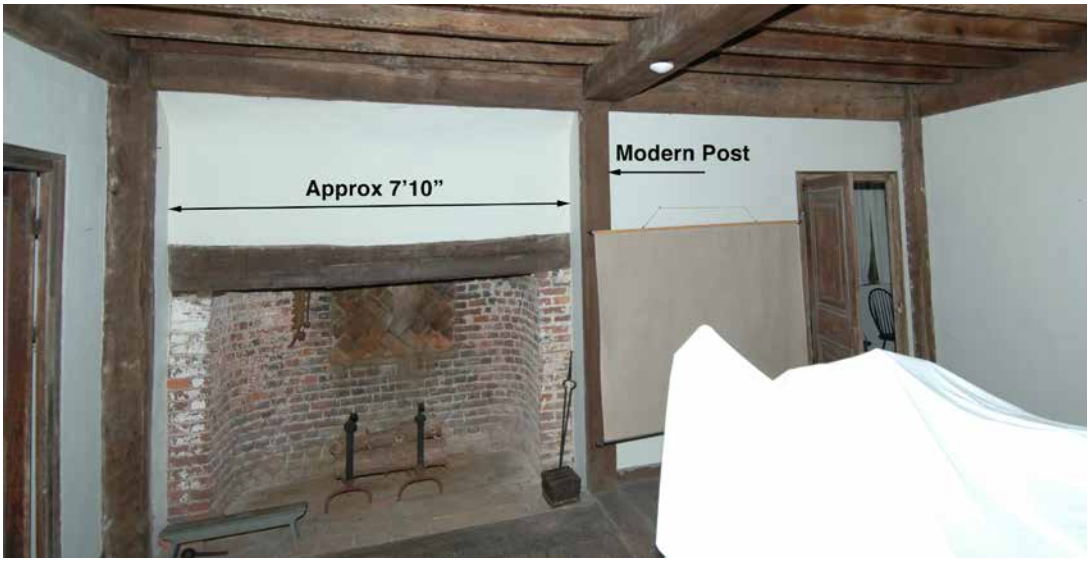


Photo 71: Overview of the west end of the hall. While the fireplace restoration is probably reasonably accurate, there is no evidence to verify that the walls were fully plastered. As shown in the following photographs, there was probably a plaster ceiling on the underside of the joists, and the summer beam, wall girts and posts all would have had wood casings covering them.

Photo 72: West facade hall window with the girt above it. The white arrows point to pins for the second floor window studs that have not been cut off flush to the girt, suggesting there was originally a plaster ceiling on the underside of the joists that concealed the pins. The black arrows point to the pins for the first floor window studs. These have been cut flush to the girt and there is no trace of paint on the girt suggesting it was always covered with a casing below the ceiling. The dashed black lines mark the approximate width of the current window sash. The pins marked with the arrows would be in the center of studs that are probably 3”-4” wide and are too far apart for the width of the current window. This suggests the original windows were wider; possibly a pair of casements.

Photo 73: Detail of the hall summer beam and ceiling joists. An exposed ca. 1700 summer beam would have been chamfered on its lower edges and its surfaces would have been smoothly dressed to hide its adze marks. The hall summer beam has obvious adze marks, there is no chamfer, nor any residue of paint on its surface. This indicates it was covered with casings below the ceiling when the house was originally built ca. 1700.

Photo 74: Fragment stored in the attic that may have been part of a wood wainscot with a molded chair rail on top of it that is similar to the bolection moldings on the original doors. Its paint scheme is similar to the paint on the paneling from the hall. Perhaps this is from an original or early wainscot in the hall.

Photo 75: Detail of the board shown in photo 74.

Photo 76: Another fragment of the molding. This piece looks like the short pieces that were placed between upper and lower panels in high style paneling. It needs to be looked at more closely to verify that possible usage.

Photo 77: Group of paneling fragments in the attic . It is unclear where they might have been used, or if they even came from the Winslow House.

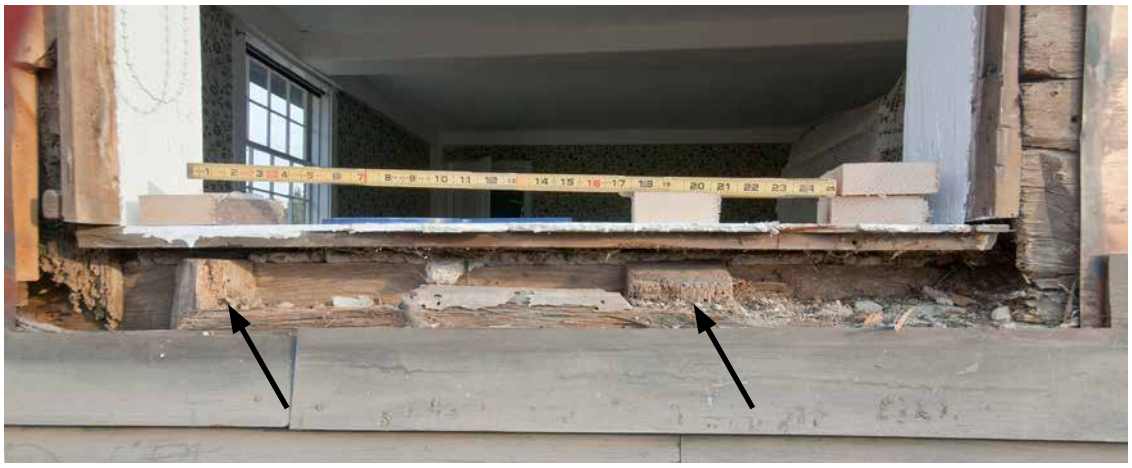


Photo 78: West facade parlor chamber window sill showing evidence that the current two windows in the west wall are not original. They were probably installed when the room was remodeled in the mid 18th century to replace a single window in the center of the wall. The evidence is the two wall studs marked with the arrows that were cur off to install the window. This photo and those below were taken in 2006.

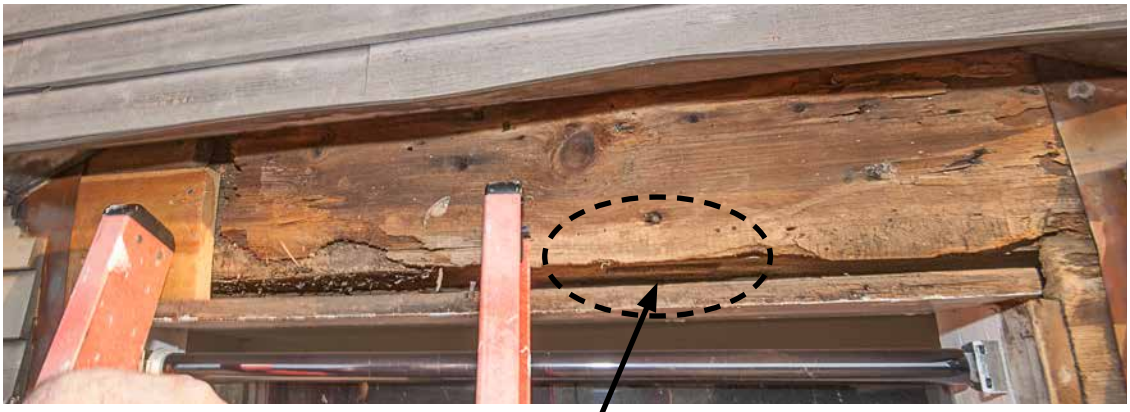


Photo 79: West facade parlor chamber window head showing empty mortise in the girt that originally housed the tenon of the stud marked in photo 78. The stud was partially removed to install the window. Presumably the two first floor windows in the parlor directly below were also installed at the same time. The dashed circle marks the area shown in photo 83 below.

Photo 80: Detail showing the empty mortise in the girt marked in photo 79 above.

Photo 81: Probably the earliest photograph of house, as its round format suggests a date of the 1860s or 70s. The house has 6/6 window sash that likely date to the first half of the 19th century. Its clapboards are in relatively good condition, although the ell is starting to get a little ragged. *Photo from Winslow House Archives.*

Photo 82: Another early photo, perhaps from the 1870s or 80s based on the dress. This shows the added first floor porch and hoods over the south side windows. The porch is also present in photo 81. *Photo courtesy of Historic New England.*

Photo 83: Photo dated 1916 showing the very rundown condition of the house before it was acquired for restoration in 1919. The hoods over the south facade window and the porch have disappeared, and the attic gable has been shingled. *Photo courtesy of Historic New England.*

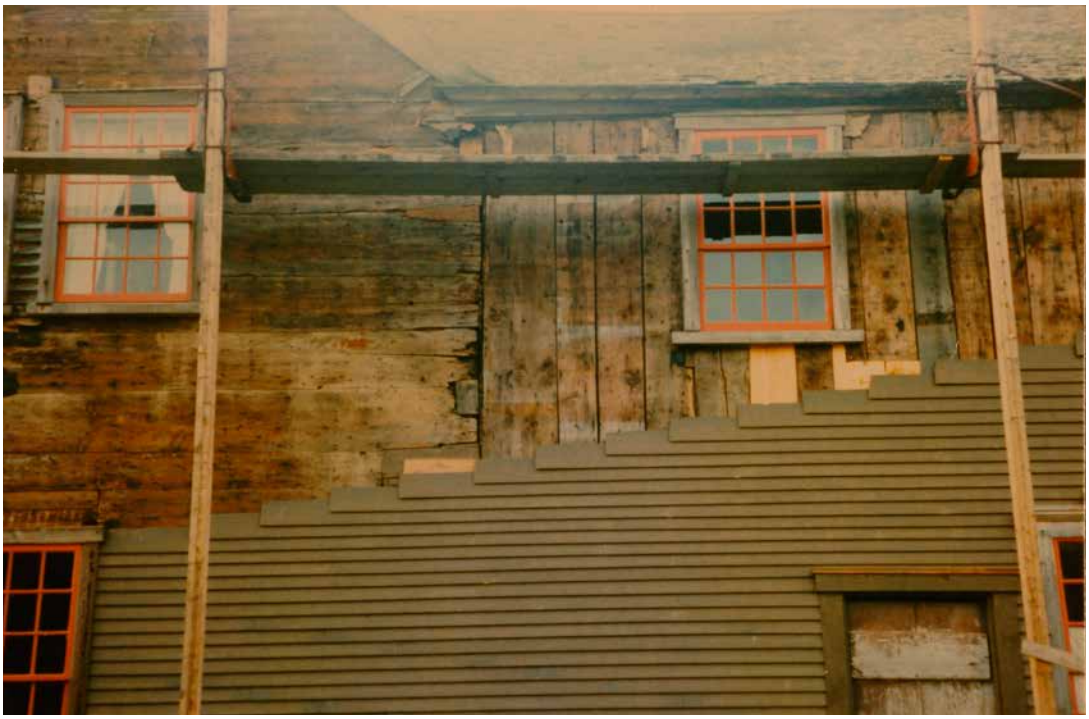


Photo 84: Junction of the north sides of the main block and the rear ell during the installation of new clapboards in the 1990s. The sheathing on the main house runs horizontally indicating it is of stud frame construction. The sheathing on the ell is vertical indicating it is of plank frame construction. Using a different framing style makes the ell unlikely to have been built as an original part of the house.

Photo 85: The arrow points to a notch in the left jamb of the door from main block kitchen into the rear ell. The notch probably was cut to receive a bar to secure the back door of the main house before the ell was added, and is further evidence the ell was added later.

Photo 86: The northeast corner post of the ell against the exterior sheathing of the main house. This and other posts in the ell has a massive shoulder haunch to receive the tie girt above it and has a carefully dressed chamfer along its edge. Both of these features are quite different from the exposed posts in the rear rooms of the main house, suggesting the ell was originally built at a different time and probably a different place.