Oxford Dendrochronology Laboratory
Report 2012/33

The Tree-Ring Dating of the Suffolk Resolves House, 1370 Canton Avenue, Milton, Norfolk County, Massachusetts

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Summary:

MILTON, Norfolk County; The Suffolk Resolves House (42º 14'03N; -71º 06'32W)
(a) South Range *Felling dates:* **Winter 1761/2, Winter 1762/3,** and **Spring 1763**
(b) Raising of roof to South Range *Felling dates:* **Winter 1780/81**
(c) North Wing *Felling dates:* **Spring 1783, Winter 1783/4, Spring 1784,** and **Winter 1784/5**

(a) Joists (4/6) 1762(¼C^3), 1758(+4-5C NM); Principal rafters 1761(C), 1759(+2-3C NM); Wall plates 1762(C, ¼C); Tiebeams 1762(C^3); (b) Tiebeams (1/3) 1780(C); Intermediate tiebeam 1780(C); Dragon tie 1780(C); Stud (0/1); (c) Longitudinal beam 1784(C), 1783(¼C); Sill beam 1784(C); Joists (1/4) 1784(13C); Tiebeams (1/2) 1784(C); Purlins 1784(C^2); Principal rafters (3/4) 1784(C), 1783(C), 1782(20¼C); Hip rafter 1783(C). *Site Masters* 1693-1762 SRHx1 (*t* = 7.26 SEMASS3; 6.83 3EARLY; 6.82 DVR); 1721-1780 SRHx2 (*t* = 6.27 DDMx3; 5.08 DVR; 4.83 TMC); 1681-1784 SRHx3 (*t* = 7.69 SEMASS3; 5.38 NPZNY; 5.13 DVR); 1644-1784 SRHx4 (*t* = 7.59 WAL; 7.05 DRV; 6.03 DDMx3).

The Suffolk Resolves, an important precursor to the Declaration of Independence in which the Suffolk County Convention resolved to resist the oppressive measures adopted by Great Britain, were signed in the house of Daniel Vose on Sept 9, 1774. The current Suffolk Resolves House was owned by Vose's son in 1785 and was commemorated in 1874 as the location of the signing. In 1950, the house was moved to Canton Ave in order to save it from destruction.

The earliest part of the house, built in 1763, a two-room, two-and-one-half story structure with central chimney and a gable roof, forms the southwest part of the current house. In 1781 or shortly thereafter, a new roof was constructed to form a projecting eaves that original portion. In 1785, the house was extended to the northeast by the addition of an ample entry hall, parlour and chamber of Georgian design. The house is now owned by the Milton Historical Society.

Date sampled: 20th and 21st March 2012

Owner and Commissioner: Milton Historical Society

Historical Research: Steve Kluskens

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How Dendrochronology Works

Dendrochronology has over the past 20 years become one of the leading and most accurate scientific dating methods. Whilst not always successful, when it does work, it is precise, often to the season of the year. Tree-ring dating to this degree of precision is well known for its use in dating historic buildings and archaeological timbers. However, more ancillary objects such as doors, furniture, panel paintings, and wooden boards in medieval book-bindings can sometimes be successfully dated.

The science of dendrochronology is based on a combination of biology and statistics. Fundamental to understanding of how dendrochronology works is the phenomenon of tree growth. Essentially, trees grow through the addition of both elongation and radial increments. The elongation takes place at the terminal portions of the shoots, branches, and roots, while the radial increment is added by the cambium, the zone of living cells between the wood and the bark. In general terms, a tree can be best simplified by describing it as a cone, with a new layer being added to the outside each year in temperate zones, making it wider and taller.

An annual ring is composed of the growth which takes place during the spring and summer and continues until about November when the leaves are shed and the tree becomes dormant for the winter period. For the two principal American oaks, the white and red (*Quercus alba* and *Q. rubra*), as well black ash (*Fraxinus nigra*), and many other species, the annual ring is composed of two distinct parts: the spring growth or early wood, and the summer growth, or late wood. Early wood is composed of large vessels formed during the period of shoot growth which takes place between March and May, before the establishment of any significant leaf growth. This is produced by using most of the energy and raw materials laid down the previous year. Then, there is an abrupt change at the time of leaf expansion around May or June when hormonal activity dictates a change in the quality of the xylem, and the summer, or late wood is formed. Here the wood becomes increasingly fibrous and contains much smaller vessels. Trees with this type of growth pattern are known as ring-porous, and are distinguished by the contrast between the open, light-coloured early wood vessels and the dense, darker-coloured late wood.

Other species of tree are known as diffuse-porous, and this group includes the tulip, or yellow-poplar (*Liriodendron tulipifera L.*). Unlike the ring-porous trees, the spring vessels consist of a very small spring vessels which become even smaller as the tree advances into the summer growth. The annual growth rings are often very difficult to distinguish under even a powerful microscope, and one often needs to study the medullary rays, which thicken at the ring boundaries.

Dendrochronology utilises the variation in the width of the annual rings as influenced by climatic conditions common to a large area, as opposed to other more local factors such as woodland competition and insect attack. It is these climate-induced variations in ring widths that allow calendar dates to be ascribed to an undated timber when compared to a firmly-dated sequence. If a tree section is complete to the bark edge, then when dated a precise date of felling can be determined. The felling date will be precise to the season of the year, depending on the degree of formation of the outermost ring. Therefore, a tree with bark which has the spring vessels formed but no summer growth can be said to be felled in the spring, although it is not possible to say in which particular month the tree was felled.

Another important dimension to dendrochronological studies is the presence of sapwood and bark. This is the band of growth rings immediately beneath the bark and comprises the living growth rings which transport the sap from the roots to the leaves. This sapwood band is distinguished from the heartwood by the prominent features of colour change and the blocking of the spring vessels with tyloses, the waste products of the tree's growth. The heartwood is generally darker in colour, and the spring vessels are usually blocked with tyloses. The heartwood is dead tissue, whereas the sapwood is living, although the only really living, growing, cells are in the cambium, immediately beneath the bark. In the American white oak (*Quercus* alba), the difference in colour is not generally matched by the change in the spring vessels, which are often filled by tyloses to within a year or two of the terminal ring. Conversely, the spring vessels in the American red oak (*Q* rubra) are almost all free of tyloses, right to the pith. Generally the sapwood retains stored food and is therefore attractive to insect and fungal attack once the tree is felled and therefore is often removed during conversion.

Methodology: The Dating Process

All timbers sampled were of oak (*Quercus* spp.) from what appeared to be primary first-use timbers, or any timbers which might have been re-used from an early phase. Those timbers which looked most suitable for dendrochronological purposes with complete sapwood or reasonably long ring sequences were selected. *In situ* timbers were sampled through coring, using a 16mm hollow auger. Details and locations of the samples are given in the summary table.

The dry samples were sanded on a linisher, or bench-mounted belt sander, using 60 to 1200 grit abrasive paper, and were cleaned with compressed air to allow the ring boundaries to be clearly distinguished. They were then measured under a x10/x30 microscope using a travelling stage electronically displaying displacement to a precision of 0.01mm. Thus each ring or year is represented by its measurement which is arranged as a series of ring-width indices within a data set, with the earliest ring being placed at the beginning of the series, and the latest or outermost ring concluding the data set.

As indicated above, the principle behind tree-ring dating is a simple one: the seasonal variations in climate-induced growth as reflected in the varying width of a series of measured annual rings is compared with other, previously dated ring sequences to allow precise dates to be ascribed to each ring. When an undated sample or site sequence is compared against a dated sequence, known as a reference chronology, an indication of how *good* the match is must be determined. Although it is almost impossible to define a visual match, computer comparisons can be accurately quantified. Whilst it may not be the best statistical indicator, Student's (a pseudonym for W S Gosset) *t*-value has been widely used amongst British dendrochronologists. The cross-correlation algorithms most commonly used and published are derived from Baillie and Pilcher's CROS programme (Baillie and Pilcher 1973), although a faster version (Munro 1984) giving slightly different *t*-values is sometimes used for indicative purposes.

Generally, *t*-values over 3.5 should be considered to be significant, although in reality it is common to find demonstrably spurious *t*-values of 4 and 5 because more than one matching position is indicated. For this reason, dendrochronologists prefer to see some *t*-value ranges of 5, 6, or higher, and for these to be well replicated from different, independent chronologies with local and regional chronologies well represented. Users of dates also need to assess their validity critically. They should not have great faith in a date supported by a handful of *t*-values of 3's with one or two 4's, nor should they be entirely satisfied with a single high match of 5 or 6. Examples of spurious *t*-values in excess of 7 have been noted, so it is essential that matches with reference chronologies be well replicated, and that this is confirmed with visual matches between the two graphs. Matches with *t*-values of 10 or more between individual sequences usually signify having originated from the same parent tree.

In reality, the probability of a particular date being valid is itself a statistical measure depending on the *t*-values. Consideration must also be given to the length of the sequence being dated as well as those of the reference chronologies. A sample with 30 or 40 years growth is likely to match with high *t*-values at varying positions, whereas a sample with 100 consecutive rings is much more likely to match significantly at only one unique position. Samples with ring counts as low as 50 may *occasionally* be dated, but only if the matches are very strong, clear and well replicated, with no other significant matching positions. This is essential for intra-site matching when dealing with such short sequences. Consideration should also be given to evaluating the reference chronology against which the samples have been matched: those with well-replicated components which are geographically near to the sampling site are given more weight than an individual site or sample from the opposite end of the country.

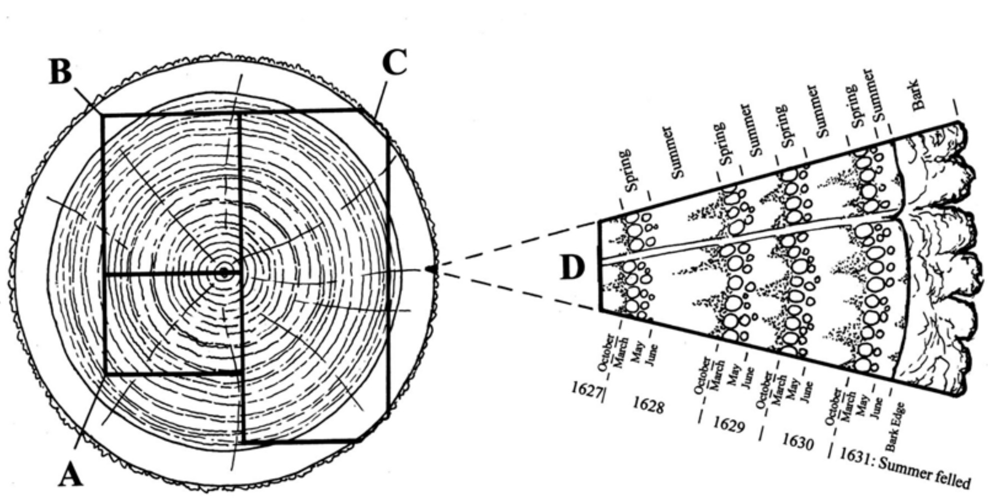
It is general practice to cross-match samples from within the same phase to each other first, combining them into a site master, before comparing with the reference chronologies. This has the advantage of averaging out the 'noise' of individual trees and is much more likely to obtain higher *t*-values and stronger visual matches. After measurement, the ring-width series for each sample is plotted as a graph of width against year on log-linear graph paper. The graphs of each of the samples in the phase under study are then compared visually at the positions indicated by the computer matching and, if found satisfactory and consistent, are averaged to form a mean curve for the site or phase. This mean curve and any unmatched individual sequences are compared against dated reference chronologies to obtain an absolute calendar date for each sequence. Sometimes, especially in urban situations, timbers may have come from different sources and fail to match each other, thus making the compilation of a site master difficult. In this situation samples must then be compared individually with the reference chronologies.

Therefore, when cross-matching samples with each other, or against reference chronologies, a combination of both visual matching and a process of qualified statistical comparison by computer is used. The ring-width series were compared on an IBM compatible computer for statistical cross-matching using a variant of the Belfast CROS program (Baillie and Pilcher 1973). A version of this and other programmes were written in BASIC by D Haddon-Reece, and re-written in Microsoft Visual Basic by M R Allwright and P A Parker.

Ascribing and Interpreting Felling Dates

Once a tree-ring sequence has been firmly dated in time, a felling date, or date range, is ascribed where possible. For samples which have sapwood complete to the underside of, or including bark, this process is relatively straight forward. Depending on the completeness of the final ring, i.e. if it has only the early wood formed, or the latewood, a *precise felling date and season* can be given.

Where the sapwood is partially missing, or if only a heartwood/sapwood transition boundary survives, then the question of when the tree was felled becomes considerably more complicated. In the European oaks, sapwood tends to be of a relatively constant width and/or number of rings. By determining what this range is with an empirically or statistically-derived estimate is a valuable aspect in the interpretation of tree-ring dates where the bark edge is not present (Miles 1997). The narrower this range of sapwood rings, the more precise the estimated felling date range will be.



Section of oak tree with conversion methods showing three types of sapwood retention resulting in **A** *terminus post quem*, **B** a felling date range, and **C** a precise felling date. Enlarged area **D** shows the outermost rings of the sapwood with growing seasons (Miles 1997, 42)

Unfortunately, it has not been possible to apply an accurate sapwood estimate to either the white or red oaks at this time. Primarily, it would appear that there is a complete absence of literature on sapwood estimates for oak anywhere in the country (Grissino-Mayer, *pers comm*). The matter is further complicated in that the sapwood in white oak (*Quercus alba*) occurs in two bands, with only the outer ring or two being free of tyloses in the spring vessels (Gerry 1914; Kato and Kishima 1965). Out of some 50 or so samples, only a handful had more than 3 rings of sapwood without tyloses. The actual sapwood band is differentiated sometimes by a lighter colour, although this is often indiscernible (Desch 1948). In archaeological timbers, the lighter coloured sapwood does not collapse as it does in the European oak (*Q robur*), but only the last ring or two without tyloses shrink tangentially. In these circumstances the only way of being able to identify the heartwood/sapwood boundary is by recording how far into the timber wood boring beetle larvae penetrate, as the heartwood is not usually susceptible to attack unless the timber is in poor or damp conditions. Despite all of these drawbacks, some effort has been made in recording sapwood ring counts on white oak, although the effort is acknowledged to be somewhat subjective.

As for red oaks (*Quercus rubra*) it will probably not be possible to determine a sapwood estimate as these are what are known as 'sapwood trees' (Chattaway 1952). Whereas the white oak suffers from an excess of tyloses, these are virtually non-existent in the red oak, even to the pith. Furthermore, there is no obvious colour change throughout the section of the tree, and wood-boring insects will often penetrate right through to the centre of the timber. Therefore, in sampling red oaks, it is vital to retain the final ring beneath the bark, or to make a careful note of the approximate number of rings lost in sampling, if any meaningful interpretation of felling dates is to be made.

Similarly, no study has been made in estimating the number of sapwood rings in tulip-poplar or black ash, or for any of the pines.

Therefore, if the bark edge does not survive on any of the timbers sampled, then only a *terminus post quem* or *felled after* date can be given. The earliest possible felling date would be the year after the last measured ring date, adjusted for any unmeasured rings or rings lost during the process of coring.

Some caution must be used in interpreting solitary precise felling dates. Many instances have been noted where timbers used in the same structural phase have been felled one, two, or more years apart. Whenever possible, a *group* of precise felling dates should be used as a more reliable indication of the *construction period*. It must be emphasised that dendrochronology can only date when a tree has been felled, not when the timber was used to construct the structure under study. However, it is common practice to build timber-framed structures with green or unseasoned timber and that construction usually took place within twelve months of felling (Miles 1997).

Details of Dendrochronological Analysis

The results of the dendrochronological analysis for the building under study are presented in a number of detailed tables. The most useful of these is the summary **Table 1**. This gives most of the salient results of the dendrochronological process, and includes details for each sample, its species, location, and its felling date, if successfully tree-ring dated. This last column is of particular interest to the end user, as it gives the actual year and season when the tree was felled, if bark is present, and an estimated felling date range if the sapwood was complete on the timber but some was lost in coring, or a *terminus post quem*. Often these *terminus post quem* dates begin far earlier than those with precise felling dates. This is simply because far more rings have been lost in the initial conversion of the timber.

It will also be noticed that often the precise felling dates will vary within several years of each other. Unless there is supporting archaeological evidence suggesting different phases, all this would indicate is either stockpiling of timber, or of trees which have been felled or died at varying times but not cut up until the commencement of the particular building operations in question. When presented with varying precise felling dates, one should always take the *latest* date for the structure under study, and it is likely that construction will have been completed for ordinary vernacular buildings within twelve or eighteen months from this latest felling date (Miles 1997).

Table 2 gives an indication of the statistical reliability of the match between one sequence and another. This shows the *t*-value over the number of years overlap for each combination of samples in a matrix table. It should be born in mind that *t*-values with less than 80 rings overlap may not truly reflect the same degree of match and that spurious matches may produce similar values.

First, multiple radii have been cross-matched with each other and combined to form same-timber means. These are then compared with other samples from the site and any which are found to have originated from the same parent tree are again similarly combined. Finally, all samples, including all same timber and same tree means are combined to form one or more site masters. Again, the cross-matching is shown as a matrix table of *t*-values over the number of years overlaps. Reference should always be made to **Table 1** to clearly identify which components have been combined.

Table 3 shows the degree of cross-matching between the site master(s) with a selection of reference chronologies. This shows the county or region from which the reference chronology originated, the common chronology name together with who compiled the chronology with publication reference and the years covered by the reference chronology. The years overlap of the reference chronology and the site master being compared are also shown together with the resulting *t*-value. It should be appreciated that well replicated regional reference chronologies, which are shown in **bold**, will often produce better matches then with individual site masters or indeed individual sample sequences. Due to the fact that chronologies are still to be developed for many parts of the eastern seaboard of America, the number of chronologies are often limited to just one or two, and this information would alternatively be presented in the summary text.

Figures include a bar diagram which shows the chronological relationship between two or more dated samples from a phase of building. The site sample record sheets are also appended, together with any plans showing sample locations, if available.

Publication of all dated sites for English buildings are routinely published in *Vernacular Architecture* annually, but regrettably there is at the present time no vehicle available for the publication of dated American buildings. However, a similar entry is shown on the summary page of the report, and this hopefully could be used in any future publication of American dates. This does not give as much technical data for the samples dated, but does give the *t*-value matches against the relevant chronologies, provides a short descriptive paragraph for each building or phase dated, and gives a useful short summary of samples dated. These summaries are also listed on the web-site maintained by the Laboratory, which can be accessed at `www.Oxford-DendroLab.com`. The Oxford Dendrochronology Laboratory retains copyright of this report, but the commissioner of the report has the right to use the report for his/her own use so long as the authorship is quoted. Primary data and the resulting site master(s) used in the analysis are available from the Laboratory on request by the commissioner and bona fide researchers. The samples form part of the Laboratory archives, unless an alternative archive, such as the Colonial Williamsburg Foundation in association with the ODL, has been specified in advance.

Summary of Dating

A total of 41 samples were taken from 35 timbers throughout the house. Four distinct building phases were postulated: (a) The primary southwest range, (b) the raising of the southwest range roof, (c) the northeast wing, and (d) the rebuilding of the northeast wing roof. Thirteen timbers were sampled from the first phase (**srh1** - **srh13**), six from the second phase (**srh21** - **srh26**), nine samples from the cellar and upstairs ceiling beam to the north wing (**srh31 - srh39**), and seven from the roof timbers of the north wing (**srh41** - **srh47**). At the time of sampling it was not clear whether last two phases comprising the north wing were not contemporary but both areas were sampled in an attempt to resolve any interpretation difficulties.

A number of timbers had multiple sequences as a result of secondary cores to retain the complete sapwood, or from radial shakes. These were first compared with each other and where satisfactory matching found, were combined to form a mean for timber. The first sample from a cellar ceiling joist encountered an oblique shake during drilling which resulted in three sequences (**srh1a**, **srh1b**, and **srh1c**). None of the segments had enough overlap to be able to cross-match with certainly, therefore all segments were taken through to the next stage of the analysis individually. Two samples were taken from a principal rafter, **srh5a** and **srh5b**, and these were combined to form the same-timber mean **srh5**. Unfortunately both segments lost between 4mm and 5mm of sapwood to the bark edge. Similarly a sample from the north wall plate of the south range lost some sapwood on the first core (**srh9a**), and a short second core (**srh9b**) was taken adjacent with the sapwood intact. These were combined to form the mean **srh9**. From the north wing, two timber were sampled twice – one a joist, the other a tiebeam. Samples **srh36a** and **srh36b** were combined to form the mean **srh36**, and similarly samples **srh37a** and **srh37b** were combined to form the mean **srh37**. With this last pair the t-values were confirm by the strong visual match. In both instances the second core retained sapwood complete to the bark edge. The means thus produced were carried forth to the next stage of the analysis.

Samples from each phase was then compared with each other, and with the reference chronologies individually. Five timbers from the first phase, **srh1c**, **srh4**, **srh6**, **srh8**, and **srh9** were all found to match together consistently as well as match with the reference chronologies individually and were combined to form the 70-ring site master **SRHx1**. Although samples **srh1c** and **srh8** had relatively short ring sequences, they visually matched the other samples well, and confirming significant matches were found with the reference chronologies with consistent felling dates. This dated to span the years 1693-1762, with the best matches with **SEMASS3**, a group of chronologies from the south-eastern corner of Massachusetts. This geographical area has proved to be difficult to date for over a decade, and it is rewarding that this result has now allowed some positive results to emerge.

Six other samples from this phase matched with both the resulting site master as well as with the other component samples, but more weakly, to the point that by including them in the site master resulted in lower matches. Therefore it was considered best to exclude them from the site master but to consider them dated nevertheless. Matches between the individual samples and the site master can be seen in Table 2.

Samples from two other timbers, attic floor joists (**srh12a1** – **12a2**, and **srh13**), failed date with any of the other samples or with the reference chronologies.

From the second phase, six samples were analysed. Of these only three dated. Samples **srh24**, **srh25**, and **srh26** all matched together to form the 60-ring site master **SRHx2**. This cross-matched with the reference chronologies as shown in table 3b, spanning the years 1721-1780. The remaining three samples **srh21**, **srh22**, and **srh23** all failed to match the site master, or any other of the dated samples or reference chronologies.

The remaining samples were all taken from the north wing. Here poor inter-site matching was found, with two groups of timbers being found. The first group consisted of **srh31**, **srh36**, **srh37**, and **srh45**. These were all combined to form the 104-ring site master **SRHx3** as shown in table 3c. This matched well with the reference chronologies spanning the years 1681-1784. Best matches were with **SEMASS3** and **NPZNY**, a chronology from New York.

Four other samples were found to match together: **srh34**, **srh41**, **srh42**, and **srh46**, as shown in table 3d. These were all combined to form the 141-ring site master **SRHx4**. This was found to match, spanning the years 1644-1784. Unlike **SRHx3**, best matches were with nearby Walpole, Dover, and Medfield.

Three other samples from the north wing dated, but like those from the south range, were not sufficiently good enough to warrant inclusion in either site masters. Sample **srh33** matched with a last measured ring of 1784 with a t = 4.46 with **SRHx3**, 5.56 with **OSC** (Concord, Mass), and 5.53 with **SEMASS2**. Sample **srh44** dated to 1783 with a t = 4.14 with **SRHx3**, 5.4 with **DVR**, and 5.37 with **DDMx3**. Finally, sample **srh47** also dated to 1783 with a t = 5.57 with **DVR**, 4.97 with **SEMASS3**, and other weaker matches with other individual samples.

Four other individual samples failed to date: **srh32** and **srh39** due primarily to having less than 40 rings, and **srh38** and **srh43**, ironically with ring counts of 101 and 57 respectively.

It is interesting to note that despite four broadly contemporary site master from the same house, the matches between them were generally very poor, and suggests that the timber for each of the different phases originated from different geographical areas, some picking up more of the local climatic signal, whilst others relating more to chronologies from further to the south-east.

Matrix of t -values and overlaps for comparisons between Suffolk Resolves House site masters

Master:	**SRHx2**	**SRHx3**	**SRHx4**
Last ring date AD:	1780	1784	1784
SRHx1	2.32	2.72	3.80
	42	70	70
	SRHx2	3.38	2.56
		60	60
		SRHx3	4.71
			104

Nevertheless, good results were found from all phases. The first phase consisting of the south range found one timber felled in the winter of 1761/2, another in the winter of 1762/3, and six from the spring of 1763. This would suggest that the house was under construction during the summer and autumn of 1763.

The second phase involved the raising of the roof of the south range. Here three samples dated to the winter of 1780/81, suggesting that this phase was carried out during 1781 or very shortly afterwards.

The north wing produced a variety of felling dates. The earliest was found from the spring of 1783, two from the winter of 1783/4, one from spring 1784, and seven from the winter of 1784/5. These dates were found both in the cellar as well as the roof, proving that the entire north wing as stands today was constructed most likely during 1785.

Acknowledgements

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Table 1: Summary of Tree-Ring Dating

SUFFOLK RESOLVES HOUSE, 1370 CANTON AVENUE, MILTON, NORFOLK COUNTY, MASSACHUSETTS

Sample number & type		Species	Timber and position	Dates AD spanning	H/S bdry	Sapwood complement	No of rings	Mean width mm	Std devn mm	Mean sens mm	Felling seasons and dates/date ranges
PHASE 1: South Range											
srh1a	c	QURU	1st floor joist from S, E end of cellar	-			68	0.98	0.35	0.220	
srh1b	c	QURU	ditto	-			24	1.07	0.21	0.124	
* **srh1c**	c	QURU	ditto	1722-1762		¼C	41	1.22	0.23	0.140	Spring 1763
srh2	c	QURU	3rd floor joist from S, W end of cellar	1698-1762		¼C	65	1.17	0.39	0.115	Spring 1763
srh3	c	QURU	4th floor joist from S, W end of cellar	1689-1762		¼C	74	0.99	0.64	0.143	
* **srh4**	c	QURU	5th floor joist from S, W end of cellar	1700-1758		+ 5mm NM to C	59	1.14	0.33	0.144	*c.* 1762-3
srh5a	c	QURU	NW principal rafter, E gable end	1700-1756		+ 4mm NM to C	57	1.21	0.32	0.134	
srh5b	c	QURU	ditto	1707-1759			53	1.20	0.31	0.116	
srh5		QURU	Mean of **srh5a** + **srh5b**	1700-1759			60	1.22	0.33	0.131	*c.* 1762-3
srh6	c	QURU	N principal rafter, 1st truss from E end	1691-1761		C	71	0.99	0.25	0.145	Winter 1761/2
* **srh7**	c	QURU	Tiebeam, 4th from E end	1693-1762		¼C	70	1.46	0.57	0.129	Spring 1763
* **srh8**	c	QURU	Tiebeam, 5th from E end	1712-1762		¼C	51	1.67	0.44	0.139	Spring 1763
srh9a	c	QURU	N wall plate	1697-1757			61	1.41	0.40	0.140	
srh9b	c	QURU	ditto	1740-1762		C	23	1.13	0.16	0.129	
* **srh9**		QURU	Mean of **srh9a** + **srh9b**	1697-1762		C	66	1.38	0.40	0.133	Winter 1762/3
srh10	c	QURU	S wall plate	1707-1762		¼C	56	1.79	0.40	0.112	Spring 1763
srh11	c	QURU	Tiebeam, W end	1693-1762		¼C	70	1.55	0.59	0.117	Spring 1763
srh12a1	c	QUAL	2nd attic floor joist from S, W bay	-			36	0.81	0.24	0.145	
srh12a2	c	QUAL	ditto	-		C	115	0.77	0.45	0.163	
srh13	c	QURU	1st floor joist from S, 2nd bay from E end	-		¼C	48	2.15	0.32	0.105	
*** = SRHx1 Site Master**				**1693-1762**			**70**	**1.50**	**0.49**	**0.112**	

Key: *, †, § = sample included in site-master; c = core; mc = micro-core; s = slice/section; g = graticule; p = photograph; ¼C, ½C, C = bark edge present, partial or complete ring: ¼C = spring (last partial ring not measured), ½C = summer/autumn (last partial ring not measured), or C = winter felling (ring measured); H/S bdry = heartwood/sapwood boundary - last heartwood ring date; std devn = standard deviation; mean sens = mean sensitivity; QUAL = *Quercus alba* (White oak), QURU = *Q rubra* (Red oak)

Sample number & type		Species	Timber and position	Dates AD spanning	H/S bdry	Sapwood complement	No of rings	Mean width mm	Std devn mm	Mean sens mm	Felling seasons and dates/date ranges
PHASE 2: Raising of Roof over South Range											
srh21	c	QURU	E end upper tiebeam	-		C	53	2.27	0.85	0.121	
srh22	c	QURU	2nd stud from S, E gable end	-		+ 3-4C NM	68	1.14	0.22	0.095	
srh23	c	QURU	Upper tiebeam, 2nd truss from E end	-		C	67	1.29	0.38	0.108	
* **srh24**	c	QURU	Upper tiebeam (skew) 4th truss from E end	1732-1780		C	49	1.81	0.78	0.119	Winter 1780/81
* **srh25**	c	QURU	SW dragon tie	1721-1780		C	60	2.46	0.70	0.112	Winter 1780/81
* **srh26**	c	QURU	Intermediate E-W tiebeam, W end bay	1723-1780		C	58	2.29	0.56	0.133	Winter 1780/81
*** = SRHx2 Site Master**				**1721-1780**			**60**	**2.20**	**0.61**	**0.119**	
PHASE 3: North Wing											
* **srh31**	c	QURU	W longitudinal beam	1713-1783		¼C	71	2.07	0.70	0.119	Spring 1784
srh32	c	QURU	3rd joist from S, centre bay, cellar	-		+7 C NM	33	1.61	0.30	0.129	
srh33	c	QURU	E longitudinal beam, cellar	1681-1784		C	104	1.73	0.57	0.111	Winter 1784/5
† **srh34**	c	QURU	N sill beam, cellar	1711-1784		C	74	1.72	0.66	0.109	Winter 1784/5
srh35	c	QURU	2nd floor joist from W, E bay, attic	-		C	39	1.84	0.34	0.136	
srh36a	c	QUAL	3rd floor joist from W, E bay, attic	1696-1784		4	89	1.19	0.33	0.121	
srh36b	c	QUAL	ditto	1700-1784		13C	85	0.99	0.21	0.123	
* **srh36**		QUAL	Mean of **srh36a** + **srh36b**	1681-1784		13C	104	1.11	0.33	0.119	Winter 1784/5
srh37a	c	QURU	2nd tiebeam from S	1723-1752			30	2.16	0.38	0.141	
srh37b	c	QURU	ditto	1736-1784		C	49	2.03	0.45	0.122	
* **srh37**		QURU	Mean of **srh37a** + **srh37b**	1723-1784		C	62	2.05	0.42	0.131	Winter 1784/5
srh38	c	QUAL	3rd tiebeam from S	-		C	101	1.07	0.36	0.139	
srh39	s	QURU	*Ex situ* joist	-		C	38	2.15	0.41	0.138	
PHASE 4: North Wing Roof											
† **srh41**	c	QURU	Middle purlin W side, N hip end slope	1744-1784		C	41	2.02	0.40	0.116	Winter 1784/5
† **srh42**	c	QURU	Upper purlin E side, N hip end slope	1741-1784		C	44	2.08	0.55	0.116	Winter 1784/5
srh43	c	QURU	W principal rafter 3rd truss from S	-		+ 4-6C NM	57	2.57	0.57	0.185	
* **srh44**	c	QURU	W principal rafter S truss	1739-1783		C	45	1.82	0.45	0.088	Winter 1783/4
* **srh45**	c	QURU	E principal rafter S truss	1712-1784		C	73	1.34	0.33	0.158	Winter 1784/5
† **srh46**	c	QUAL	W principal rafter hip end	1644-1782		20¼C	139	1.14	0.34	0.137	Spring 1783
srh47	c	QURU	SW hip rafter	1726-1783		C	58	1.73	0.30	0.120	Winter 1783/4
*** = SRHx3 Site Master**				**1681-1784**			**104**	**1.56**	**0.32**	**0.109**	
† = SRHx4 Site Master				**1644-1784**			**141**	**1.46**	**0.43**	**0.130**	

Key: *, †, § = sample included in site-master; c = core; mc = micro-core; s = slice/section; g = graticule; p = photograph; ¼C, ½C, C = bark edge present, partial or complete ring: ¼C = spring (last partial ring not measured), ½C = summer/autumn (last partial ring not measured), or C = winter felling (ring measured); H/S bdry = heartwood/sapwood boundary - last heartwood ring date; std devn = standard deviation; mean sens = mean sensitivity; QUAL = *Quercus alba* (White oak), QURU = *Q rubra* (Red oak)

Explanation of terms used in Table 1

The summary table gives most of the salient results of the dendrochronological process. For ease in quickly referring to various types of information, these have all been presented in Table 1. The information includes the following categories:

Sample number: Generally, each site is given a two or three letter identifying prefix code, after which each timber is given an individual number. If a timber is sampled twice, or if two timbers were noted at time of sampling as having clearly originated from the same tree, then they are given suffixes '**a**', '**b**', etc. Where a core sample has broken, with no clear overlap between segments, these are differentiated by a further suffix '**1**', '**2**', etc.

Type shows whether the sample was from a core 'c', or a section or slice from a timber's'. Sometimes photographs are used 'p', or timbers measured *in situ* with a graticule 'g'.

Species gives the four-letter species code used by the International Tree-Ring Data Bank, at NOAA. These are identified in the key at the bottom of the table.

Timber and position column details each timber sampled along with a location reference. This will usually refer to a bay or truss number, or relate to compass points or to a reference drawing.

Dates AD spanning gives the first and last measured ring dates of the sequence (if dated),

H/S bdry is the date of the heartwood/sapwood transition or boundary (if identifiable).

Sapwood complement gives the number of sapwood rings, if identifiable. The tree starts growing in the spring during which time the earlywood is produced, also known also as spring growth. This consists of between one and three decreasing spring vessels and is noted as *Spring* felling and is indicated by a ¼ C after the number of sapwood ring count. Sometimes this can be more accurately pin-pointed to very early spring when just a few spring vessels are visible. After the spring growing season, the latewood or summer growth commences, and is differentiated from the proceeding spring growth by the dense band of tissue. This summer growth continues until just before the leaves drop, in about October. Trees felled during this period are noted as *summer* felled (½ C), but it is difficult to be too precise, as the width of the latewood can be variable, and it can be difficult to distinguish whether a tree stopped growing in autumn or *winter*. When the summer growth band is clearly complete, then the tree would have been felled during the dormant winter period, as shown by a single C. Sometimes a sample will clearly have complete sapwood, but due either to slight abrasion at the point of coring, or extremely narrow growth rings, it is impossible to determine the season of felling.

Number of rings: The total number of measured rings included in the samples analysed.

Mean ring width: This, simply put, is the sum total of all the individual ring widths, divided by the number of rings, giving an average ring width for the series.

Mean sensitivity: A statistic measuring the mean percentage, or relative, change from each measured yearly ring value to the next; that is, the average relative difference from one ring width to the next, calculated by dividing the absolute value of the differences between each pair of measurements by the average of the paired measurements, then averaging the quotients for all pairs in the tree-ring series (Fritts 1976). Sensitivity is a dendrochronological term referring to the presence of ring-width variability in the radial direction within a tree which indicates the growth response of a particular tree is "sensitive" to variations in climate, as opposed to complacency.

Standard deviation: The mean scatter of a population of numbers from the population mean. The square root of the variance, which is itself the square of the mean scatter of a statistical population of numbers from the population mean. (Fritts 1976).

Felling seasons and dates/date ranges is probably the most important column of the summary table. Here the actual felling dates and seasons are given for each dated sample (if complete sapwood is present). Sometimes it will be noticed that often the precise felling dates will vary within several years of each other. Unless there is supporting archaeological evidence suggesting different phases, all this would indicate is either stockpiling of timber, or of trees which have been felled or died at varying times but not cut up until the commencement of the particular building operations in question. When presented with varying precise felling dates, one should always take the *latest* date for the structure under study, and it is likely that construction will have been completed for ordinary vernacular buildings within twelve or eighteen months from this latest felling date (Miles 1997).

Table 2: Matrix of *t*-values and overlaps for same-timber means and site masters

Components of timber **srh5**

Sample:	**srh5b**
Last ring date AD:	1759
srh5a	5.68 / 50

Components of timber **srh9**

Sample:	**srh9b**
Last ring date AD:	1762
srh9a	9.72 / 18

Components of timber **srh36**

Sample:	**srh36b**
Last ring date AD:	1784
srh36a	5.76 / 70

Components of timber **srh37**

Sample:	**srh37b**
Last ring date AD:	1784
srh37a	8.43 / 17

Components of site master **SRHx1**

Sample:	**srh4**	**srh7**	**srh8**	**srh9**
Last ring date AD:	1758	1762	1762	1762
srh1c	1.36 / 37	3.78 / 41	3.50 / 41	3.86 / 41
	srh4	6.66 / 59	3.18 / 47	4.45 / 59
		srh7	4.97 / 51	6.54 / 66
			srh8	3.51 / 51

Components of site master **SRHx2**

Sample:	**srh25**	**srh26**
Last ring date AD:	1780	1780
srh24	7.28 / 49	7.29 / 49
	srh25	7.69 / 58

Components of site master **SRHx3**

Sample:	**srh36**	**srh37**	**srh45**
Last ring date AD:	1784	1784	1784
srh31	5.27 71	4.01 61	4.36 71
	srh36	2.40 62	2.15 73
		srh37	5.42 62

Components of site master **SRHx4**

Sample:	**srh41**	**srh42**	**srh46**
Last ring date AD:	1784	1784	1782
srh34	0.83 41	1.26 44	4.13 72
	srh41	8.53 41	1.40 39
		srh42	4.59 42

Components of site master **SRHx1** (samples **srh1c**, **srh4**, **srh7**, **srh8**, and **srh9**) together with additional dated samples excluded from site master

Sample:	**srh4**	**srh7**	**srh8**	**srh9**	**srh2**	**srh3**	**srh5b**	**srh5**	**srh6**	**srh10**	**srh11**	**SRHx1**
Last ring date AD:	1758	1762	1762	1762	1762	1762	1759	1759	1761	1762	1762	1762
srh1c	1.36 / 37	3.78 / 41	3.50 / 41	3.86 / 41	1.67 / 41	0.23 / 41	2.58 / 38	3.19 / 38	0.30 / 40	1.86 / 41	3.72 / 41	Included
srh4		6.66 / 59	3.18 / 47	4.45 / 59	4.16 / 59	4.03 / 59	4.75 / 52	2.15 / 59	3.23 / 59	3.41 / 52	7.21 / 59	Included
srh7			4.97 / 51	6.54 / 66	3.65 / 65	3.83 / 70	3.89 / 53	2.88 / 60	6.13 / 69	3.55 / 56	4.13 / 70	Included
srh8				3.51 / 51	1.86 / 51	1.89 / 51	1.82 / 48	2.13 / 48	2.65 / 50	2.66 / 51	3.50 / 51	Included
srh9					2.68 / 65	3.19 / 66	4.21 / 53	2.86 / 60	1.53 / 65	3.36 / 56	5.42 / 66	Included
srh2						2.92 / 65	3.36 / 53	3.70 / 60	2.64 / 64	4.54 / 56	4.90 / 65	4.19 / 65
srh3							2.06 / 53	1.35 / 60	4.07 / 71	1.80 / 56	2.15 / 70	3.66 / 70
srh5b								Included	1.99 / 53	2.96 / 53	4.34 / 53	4.44 / 53
srh5									2.13 / 60	4.25 / 53	3.71 / 60	2.90 / 60
srh6										1.84 / 55	1.18 / 69	4.80 / 69
srh10											4.19 / 56	4.24 / 56
srh11												5.49 / 70

Table 3a: Dating of site master **SRHx1** (1693-1762) against reference chronologies at 1762

County or region:	*Chronology name:*	*Short publication reference:*	*File name:*	*Spanning:*	*Overlap:*	t-*value:*
Massachusetts	S E Massachusetts Chronology	*(Miles unpubl)*	**SEMASS3**	1609-1796	70	7.26
Massachusetts	Three Early Buildings (Columbia)	(Krusic and Cook 2001)	3EARLY	1634-1784	70	6.83
Massachusetts	Chickering-Francis Farm, Dover	*(Miles and Worthington 2006a)*	DVR	1671-1785	70	6.82
Massachusetts	Mt Wachusetts & Boston Area	*(Cook and Krusic 2003 unpubl)*	WACHU	1363-1997	70	5.90

Table 3b: Dating of site master **SRHx2** (1721-1780) against reference chronologies at 1780

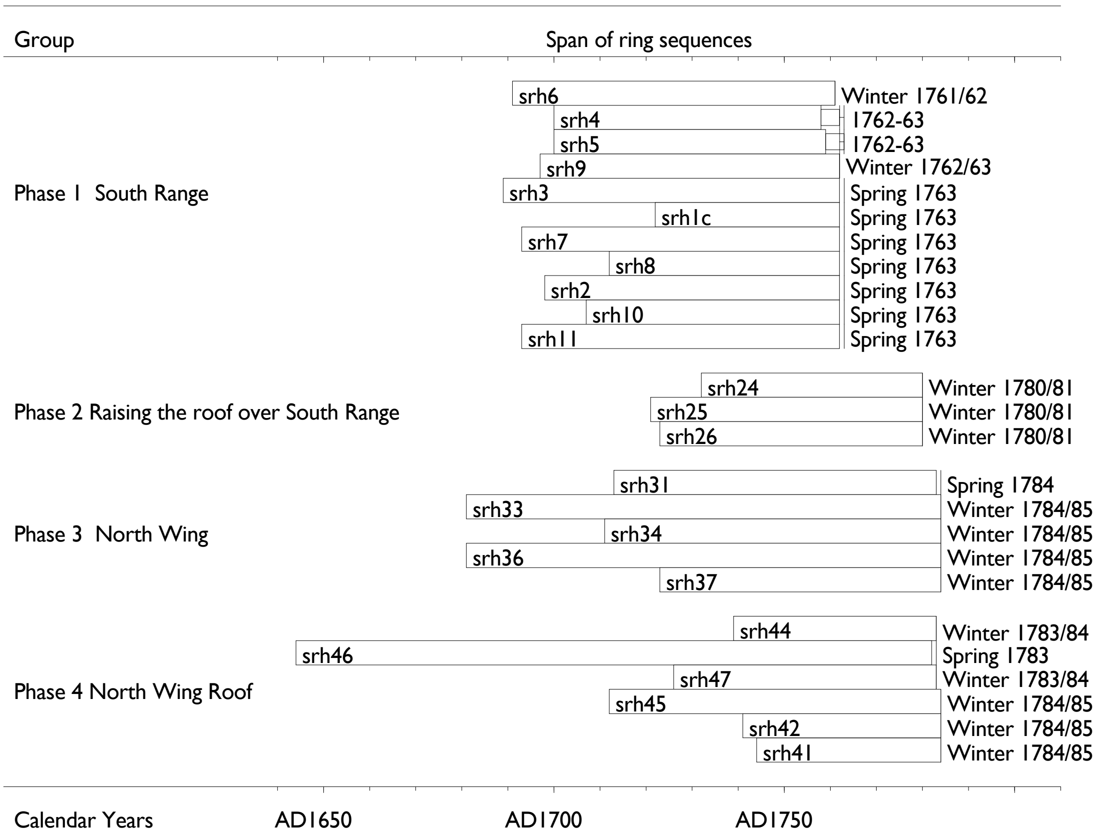
County or region:	*Chronology name:*	*Short publication reference:*	*File name:*	*Spanning:*	*Overlap:*	t-*value:*
Massachusetts	Dwight-Derby House, Medfield	*(Miles 2010)*	DDMx3	1631-1763	60	6.27
Massachusetts	Chickering-Francis Farm, Dover	*(Miles and Worthington 2006a)*	DVR	1671-1785	60	5.08
Massachusetts	United Methodist Church, Townsend	*(Miles et al 2002)*	TMC	1577-1769	49	4.83
Massachusetts	S E Massachusetts Chronology	*(Miles unpubl)*	**SEMASS3**	1609-1796	60	4.66

Table 3c: Dating of site master **SRHx3** (1681-1784) against reference chronologies at 1784

County or region:	*Chronology name:*	*Short publication reference:*	*File name:*	*Spanning:*	*Overlap:*	t-*value:*
Massachusetts	S E Massachusetts Chronology	*(Miles unpubl)*	**SEMASS3**	1609-1796	104	7.69
New York	New Paltz oak 5	*(Krusic pers comml)*	NPZNY	1449-1806	104	5.38
Massachusetts	Chickering-Francis Farm, Dover	*(Miles and Worthington 2006a)*	DVR	1671-1785	104	5.13
Massachusetts	Smith-Healey House, Walpole	(Miles *et al* 2006b)	WLP	1674-1796	104	4.64

Table 3d: Dating of site master **SRHx4** (1644-1784) against reference chronologies at 1784

County or region:	*Chronology name:*	*Short publication reference:*	*File name:*	*Spanning:*	*Overlap:*	t-*value:*
Massachusetts	Smith-Healey House, Walpole	(Miles *et al* 2006b)	WLP	1674-1796	111	7.59
Massachusetts	Chickering-Francis Farm, Dover	*(Miles and Worthington 2006a)*	DVR	1671-1785	114	7.05
Massachusetts	Dwight-Derby House, Medfield	*(Miles 2010)*	DDMx3	1631-1763	141	6.03
Massachusetts	Dwight-Derby House, Medfield	*(Miles and Worthington 2007)*	DDMx2	1680-1760	81	5.78

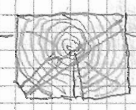


Dated timbers in chronological position

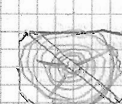
OXFORD DENDROCHRONOLOGY LABORATORY - SITE RECORD FORM *Sheet:* 1/4

Site name: SUFFOLK RESOLVES HOUSE	Township: MILTON	County: NORFOLK	State: MASS
Address: 1370 CANTON AVE.	Building recording: STEVE KLUSKENS	NGR:	
Owner: MILTON HIST. SOC.	Commissioner: MILTON HIST. SOC.	Sample recording: DM	LAT: ° . N
Site Code:	Date sampled: 20-21 Mar 02	Sampled by: DM & MB	LON: ° . W

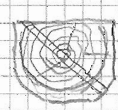
Sample No:	1
Timber & location:	1ST FL JOIST from S, E END CELLAR
Sapwood (No, H/S, C):	C
Sapwood lost in mm:	—
No. of rings lost:	
Species:	
Phase:	



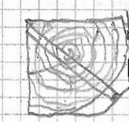
Sample No:	2
Timber & location:	3RD FL JOIST from S, W. END CELLAR
Sapwood (No, H/S, C):	C
Sapwood lost in mm:	—
No. of rings lost:	
Species:	
Phase:	



Sample No:	3
Timber & location:	4th FL JOIST from S, W. END CELLAR
Sapwood (No, H/S, C):	C
Sapwood lost in mm:	—
No. of rings lost:	
Species:	
Phase:	



Sample No:	4
Timber & location:	5th FL JOIST from S, W. END CELLAR
Sapwood (No, H/S, C):	C
Sapwood lost in mm:	5
No. of rings lost:	
Species:	
Phase:	

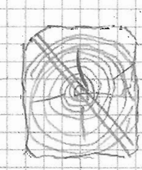


Sample No:	5
Timber & location:	NW PRINC. RAFTER E END
Sapwood (No, H/S, C):	C
Sapwood lost in mm:	4
No. of rings lost:	
Species:	
Phase:	

Sample No:	6
Timber & location:	N PRINC. RAFTER 1st TRUSS fr E
Sapwood (No, H/S, C):	C
Sapwood lost in mm:	—
No. of rings lost:	
Species:	
Phase:	

Sample No:	7
Timber & location:	TIEBEAM 4th fr E END
Sapwood (No, H/S, C):	C
Sapwood lost in mm:	—
No. of rings lost:	
Species:	
Phase:	

Sample No:	8
Timber & location:	TIEBEAM 5th fr E END
Sapwood (No, H/S, C):	C
Sapwood lost in mm:	—
No. of rings lost:	
Species:	
Phase:	



Sample No:	9
Timber & location:	N WALLPLATE W END
Sapwood (No, H/S, C):	C
Sapwood lost in mm:	—
No. of rings lost:	
Species:	
Phase:	

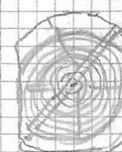
Sample No:	10
Timber & location:	S WALLPLATE
Sapwood (No, H/S, C):	C
Sapwood lost in mm:	—
No. of rings lost:	
Species:	
Phase:	

OXFORD DENDROCHRONOLOGY LABORATORY - SITE RECORD FORM

Sheet: 2/4

Site name: SUFFOLK RESOLVES HOUSE		Township: MILTON	County: NORFOLK / State: MASS
Address:		Building recording:	NGR:
Owner:	Commissioner:	Sample recording:	LAT: ° . N
Site Code:	Date sampled:	Sampled by:	LON: ° . W

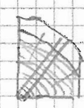
Sample No: 11
Timber & location: TIEBEAM W END
Sapwood (No, H/S, C): C
Sapwood lost in mm: –
No. of rings lost:
Species:
Phase: 1



Sample No: 12
Timber & location: 2nd FL JOIST fr S, W Bay ATTIC FL.
Sapwood (No, H/S, C): C
Sapwood lost in mm: –
No. of rings lost:
Species:
Phase: 1 ?

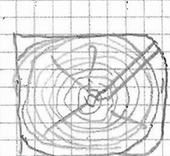
has series of assembly marks on N face

Sample No: 13
Timber & location: 1st FL JOIST fr S 2nd Bay fr E
Sapwood (No, H/S, C): C
Sapwood lost in mm: –
No. of rings lost:
Species:
Phase: 1 ?

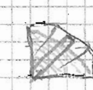


Sample No:
Timber & location:
Sapwood (No, H/S, C):
Sapwood lost in mm:
No. of rings lost:
Species:
Phase:

Sample No: 21
Timber & location: E END UPPER TIEBEAM
Sapwood (No, H/S, C): C
Sapwood lost in mm: –
No. of rings lost:
Species:
Phase: 2

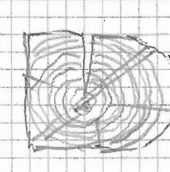


Sample No: 22
Timber & location: 2nd stud fr S, E GABLE END
Sapwood (No, H/S, C): C
Sapwood lost in mm: 3-4
No. of rings lost:
Species:
Phase: 2 ?

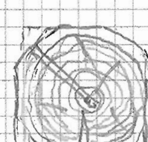


Sample No: 23
Timber & location: UPPER TIEBEAM, 2nd TRUSS fr E END
Sapwood (No, H/S, C): C
Sapwood lost in mm: –
No. of rings lost:
Species:
Phase: 2

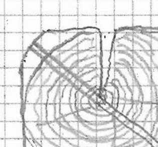
Sample No: 24
Timber & location: upper TIEBEAM (SKEW) 4th Truss fr E
Sapwood (No, H/S, C): C
Sapwood lost in mm: –
No. of rings lost:
Species:
Phase: 2



Sample No: 25
Timber & location: SW DRAGON TIE
Sapwood (No, H/S, C): C
Sapwood lost in mm: –
No. of rings lost:
Species:
Phase: 2



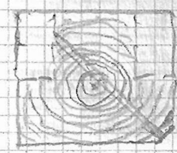
Sample No: 26
Timber & location: INTERMEDIATE E-W TIE, W. END BAY
Sapwood (No, H/S, C): C
Sapwood lost in mm: –
No. of rings lost:
Species:
Phase: 2



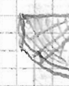
OXFORD DENDROCHRONOLOGY LABORATORY - SITE RECORD FORM *Sheet:* 3/4

Site name: SUFFOLK RESOLVES HOUSE		*Township:* MILTON	*County:* / *State:* MASS
Address:		*Building recording:*	*NGR:*
Owner:	*Commissioner:*	*Sample recording:*	*LAT:* ° . N
Site Code:	*Date sampled:*	*Sampled by:*	*LON:* ° . W

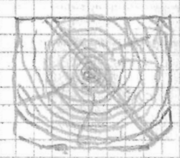
Sample No: 31
Timber & location: W LONGITUDINAL BEAM
Sapwood (No, H/S, C): C
Sapwood lost in mm: ?
No. of rings lost:
Species:
Phase: 3



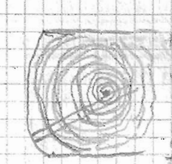
Sample No: 32
Timber & location: 3rd joist from S centre bay
Sapwood (No, H/S, C): C on b
Sapwood lost in mm: 1-2 ?
No. of rings lost:
Species:
Phase: 3



Sample No: 33
Timber & location: E LONGITUDINAL BEAM
Sapwood (No, H/S, C): C
Sapwood lost in mm: –
No. of rings lost:
Species:
Phase: 3

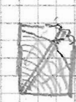


Sample No: 34
Timber & location: N SILL BEAM
Sapwood (No, H/S, C): C
Sapwood lost in mm: –
No. of rings lost:
Species:
Phase: 3 ?

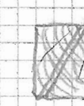
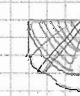


UNUSED MORTICE ? REUSED ?

Sample No: 35
Timber & location: 2nd fm JOIST IN ATTIC from W. E. BAY
Sapwood (No, H/S, C): C
Sapwood lost in mm: ?
No. of rings lost: ?
Species:
Phase: 3 ?



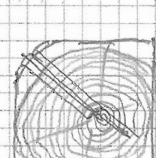
Sample No: 36
Timber & location: 3rd fm JOIST IN ATTIC fm W. E BAY
Sapwood (No, H/S, C): C on b
Sapwood lost in mm: –
No. of rings lost:
Species:
Phase: 3 ?

a b

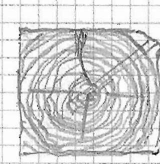
Sample No: 37
Timber & location: 2nd TIEBEAM fm S
Sapwood (No, H/S, C): C on both
Sapwood lost in mm: –
No. of rings lost:
Species:
Phase: 3

IIII



Sample No: 38
Timber & location: 3rd TIEBEAM fm S.
Sapwood (No, H/S, C): C
Sapwood lost in mm: –
No. of rings lost:
Species:
Phase: 2

III



Sample No: 39
Timber & location: EX SITU JOIST
Sapwood (No, H/S, C): C
Sapwood lost in mm: –
No. of rings lost:
Species:
Phase: 3

SLICE

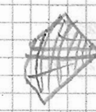
Sample No:
Timber & location:
Sapwood (No, H/S, C):
Sapwood lost in mm:
No. of rings lost:
Species:
Phase:

OXFORD DENDROCHRONOLOGY LABORATORY - SITE RECORD FORM

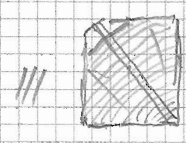
Sheet: 4/4

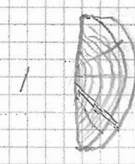
Site name: SUFFOLK RESOLVES HOUSE		Township: MILTON	County:	State: MA
Address:		Building recording:	NGR:
Owner:	Commissioner:	Sample recording:	LAT: ° . N
Site Code:	Date sampled:	Sampled by:	LON: ° . W

Sample No: 41	Sample No: 42
Timber & location: MIDDLE PURLIN W. SIDE N SLOPE	Timber & location: UPPER PURLIN E SIDE N. SLOPE
Sapwood (No, H/S, C): C	Sapwood (No, H/S, C): C
Sapwood lost in mm: –	Sapwood lost in mm: –
No. of rings lost:	No. of rings lost:
Species:	Species:
Phase: 4	Phase: 4

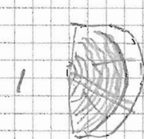


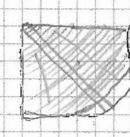
Sample No: 43	Sample No: 44
Timber & location: W PRINC. RAFTER 3rd TRUSS fr S	Timber & location: W PRINC RAFTER S. TRUSS
Sapwood (No, H/S, C): C	Sapwood (No, H/S, C): C
Sapwood lost in mm: 4 - 6	Sapwood lost in mm: –
No. of rings lost:	No. of rings lost:
Species:	Species:
Phase: 4	Phase: 4



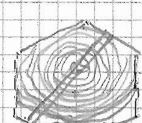


Sample No: 45	Sample No: 46
Timber & location: E PRINC. RAFTER S. TRUSS	Timber & location: W PRINC RAFTER HIP END
Sapwood (No, H/S, C): C	Sapwood (No, H/S, C): C
Sapwood lost in mm: –	Sapwood lost in mm: –
No. of rings lost:	No. of rings lost:
Species:	Species:
Phase: 4	Phase: 4

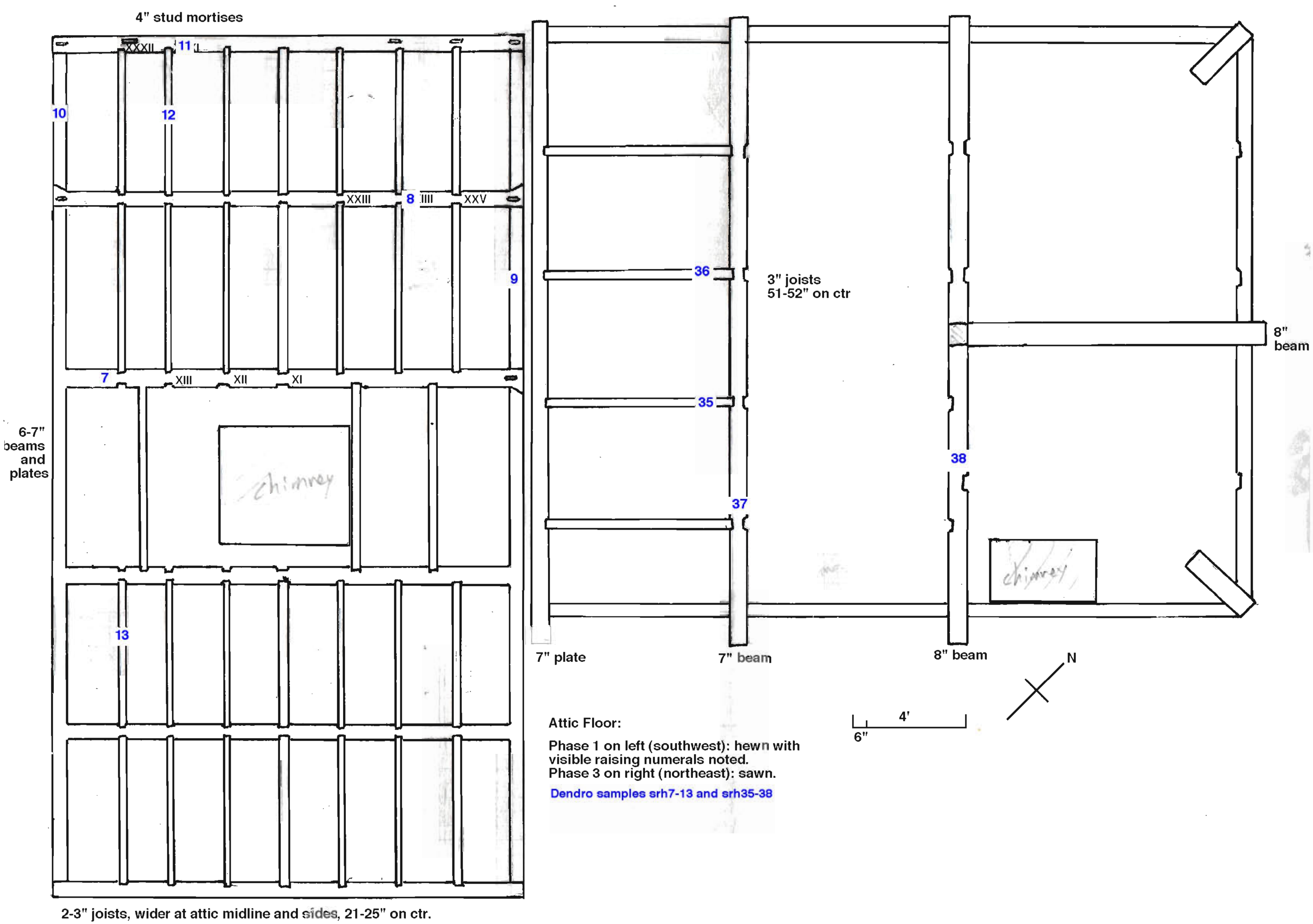




Sample No: 47	Sample No:
Timber & location: S.W. HIP RAFTER	Timber & location:
Sapwood (No, H/S, C): C	Sapwood (No, H/S, C):
Sapwood lost in mm: –	Sapwood lost in mm:
No. of rings lost:	No. of rings lost:
Species:	Species:
Phase: 4	Phase:



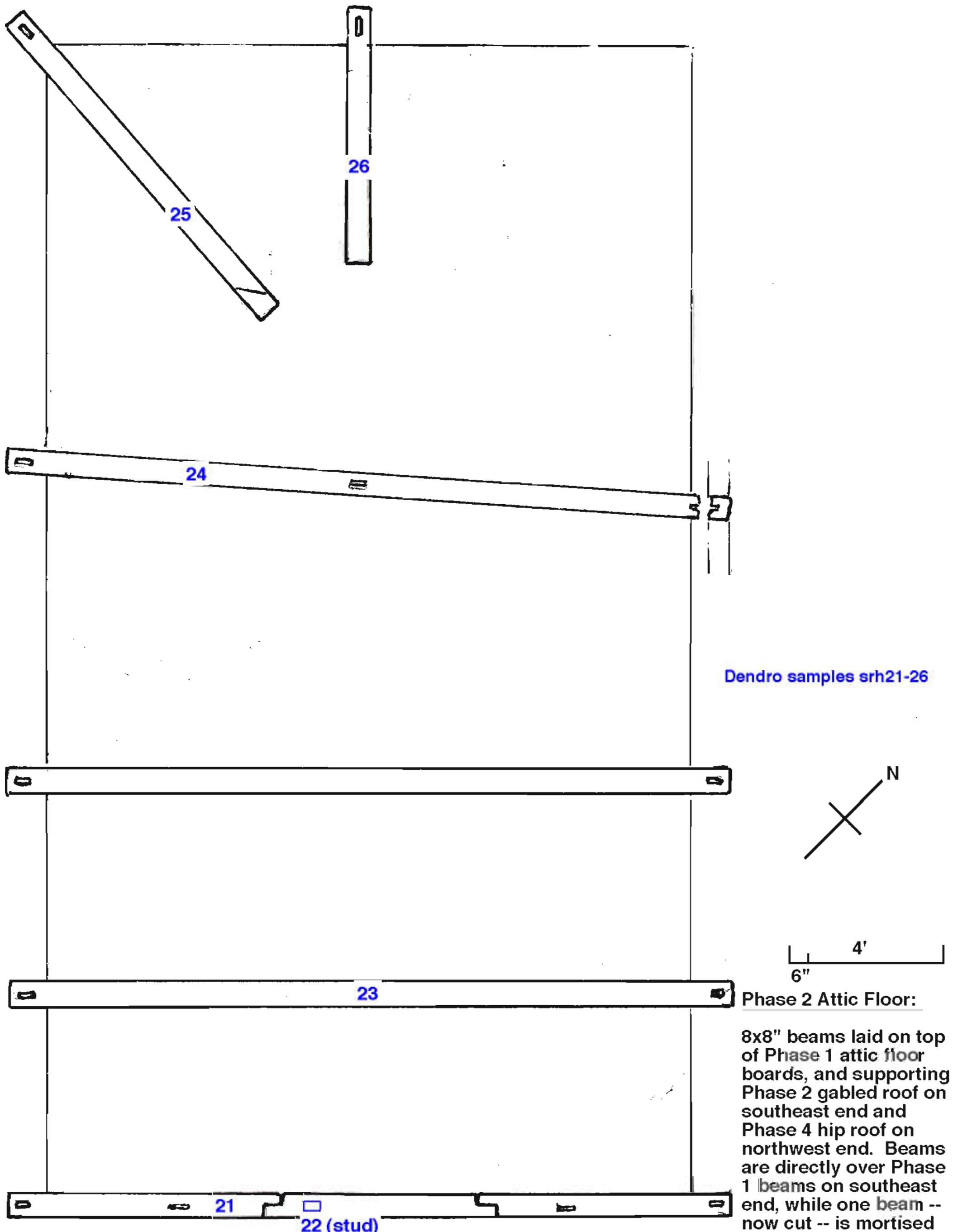
Sample No:	Sample No:
Timber & location:	Timber & location:
Sapwood (No, H/S, C):	Sapwood (No, H/S, C):
Sapwood lost in mm:	Sapwood lost in mm:
No. of rings lost:	No. of rings lost:
Species:	Species:
Phase:	Phase:



Attic Floor:

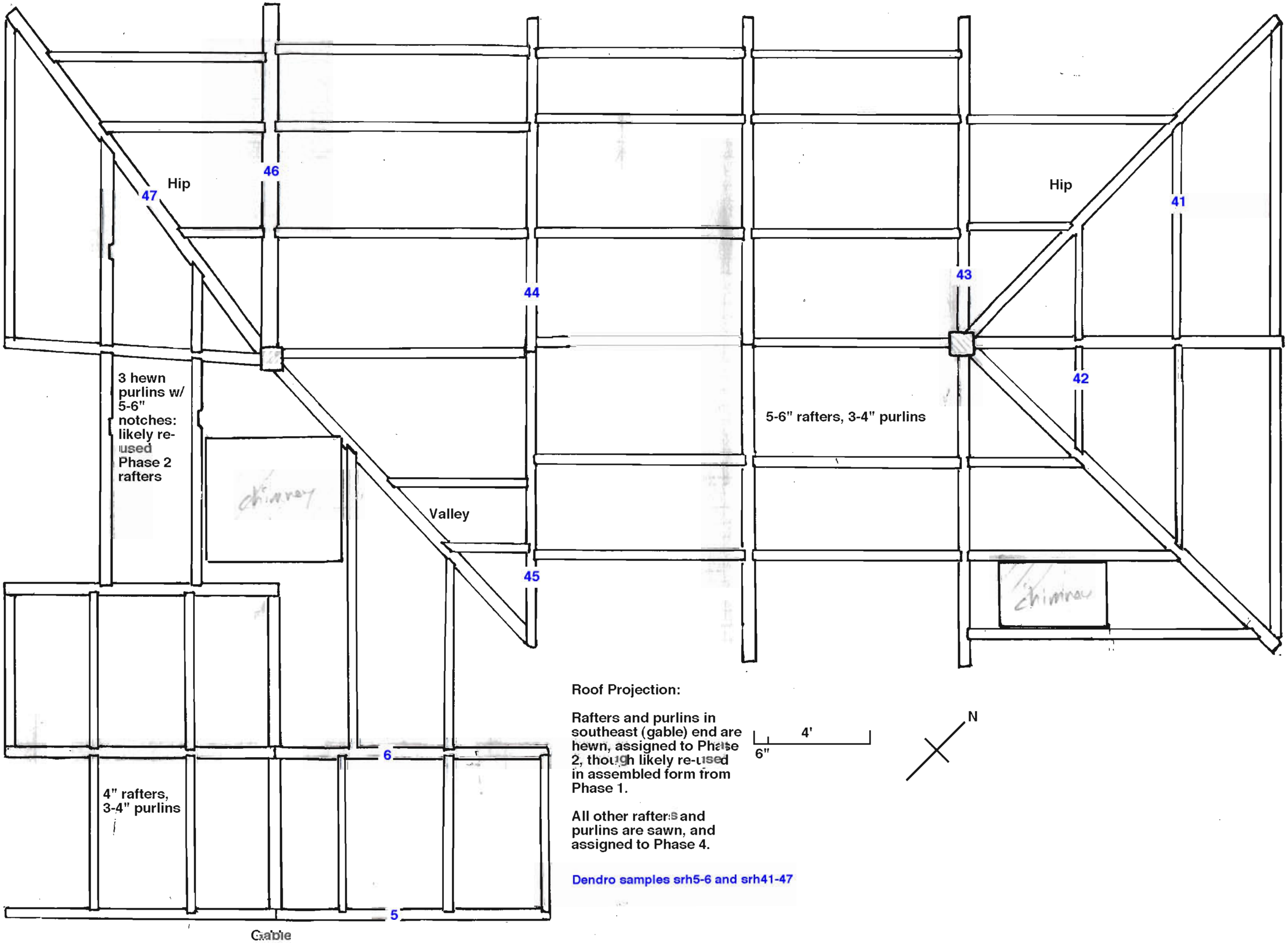
Phase 1 on left (southwest): hewn with visible raising numerals noted.
Phase 3 on right (northeast): sawn.

Dendro samples srh7-13 and srh35-38



Phase 2 Attic Floor:

8x8" beams laid on top of Phase 1 attic floor boards, and supporting Phase 2 gabled roof on southeast end and Phase 4 hip roof on northwest end. Beams are directly over Phase 1 beams on southeast end, while one beam -- now cut -- is mortised and pegged into adjacent Phase 3 plate.

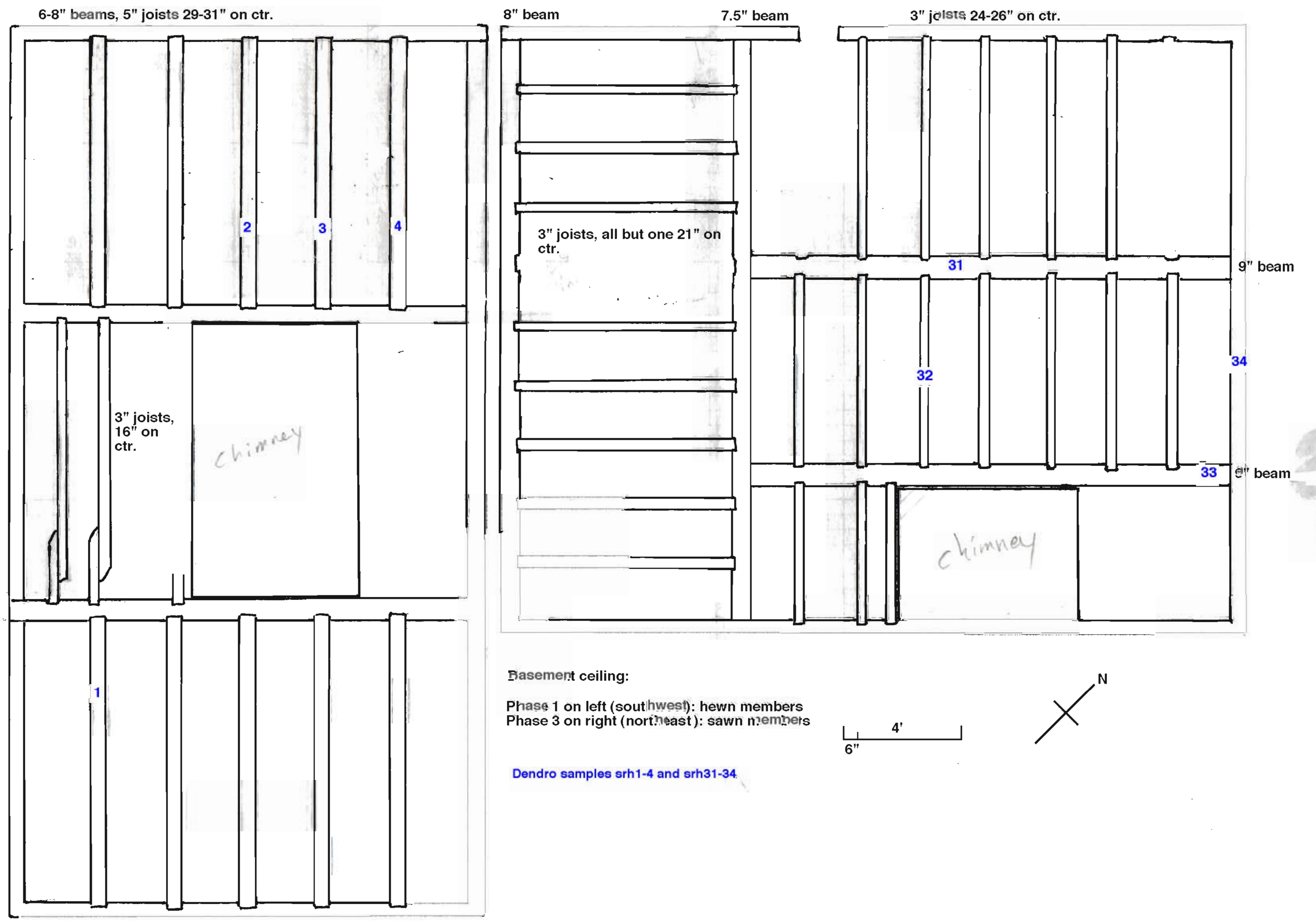


Roof Projection:

Rafters and purlins in southeast (gable) end are hewn, assigned to Phase 2, though likely re-used in assembled form from Phase 1.

All other rafters and purlins are sawn, and assigned to Phase 4.

Dendro samples srh5-6 and srh41-47



Basement ceiling:

Phase 1 on left (southwest): hewn members
Phase 3 on right (northeast): sawn members

Dendro samples srh1-4 and srh31-34