ARCHITECTURAL HISTORY HISTORIC PRESERVATION

JAMES L. GARVIN
FARRINGTON HOUSE

30 South Main Street · Building 1, Suite 201 · Concord, New Hampshire, 03301
james@jamesgarvin.net http://www.james-garvin.com

# REPORT ON THE HALL-DYER HOUSE
## 25 GREAT HILL ROAD
## TAMWORTH, NEW HAMPSHIRE

**JAMES L. GARVIN**
**OCTOBER 1, 2012**

This report derives from an examination of the Hall-Dyer House on September 27, 2012. The purpose of the report is to identify the character-defining features of the dwelling as a means of ensuring the protection and preservation of those features as the Tamworth Historical Society rehabilitates the house for its headquarters.

*Hall-Dyer House, Tamworth, New Hampshire: Front (south) and East Elevations*

In order to identify the character-defining features of any building, the history and evolution of the structure must be understood. This report therefore devotes some effort toward a diagnostic description of the features of the building that help to establish its date of construction and degree of architectural integrity.

An understanding of the original character of the house and of the character of later changes should allow original features, and significant later features, to be respected as plans develop for conversion of the building to a structure that welcomes the visiting public and provides resources for storing and researching the collections of the Tamworth Historical Society. Most available grants for historic preservation require that significant features be carefully preserved in order to retain the integrity and historical value of a structure.

Such an understanding should also aid in determining the eligibility of the house for listing in the New Hampshire State Register of Historic Places and/or the National Register of Historic Places.

*Summary:* This report suggests a revised understanding of the date of construction of the Hall-Dyer House, based on the physical evidence described below. That revised understanding, if accepted as a guideline for the treatment of the house, will define the dwelling as retaining a higher percentage of original interior finish than might have been assumed. The date of construction of the Hall-Dyer House has been understood to be "the early 1800s;" some have assumed that the house was built as a contemporary to the Captain Enoch Remick House of c. 1808 across the road to the east. This report estimates the date of construction of the Hall-Dyer House to have been in the early 1830s, with a conservative Federal-style exterior but with innovative yet simple Greek Revival interior finish. In this sense, building of the Hall-Dyer House appears to have been contemporaneous with the first remodeling of the Remick House, which is estimated in the National Register nomination for that property at c. 1830. The house also reveals substantial investment and modernization in the early twentieth century.

*General description*: The following description may be useful in completing a survey form for evaluations the house for eligibility for the State or National Registers of Historic Places. The general description is followed by a discussion of the diagnostic evidence upon which the suggested date of the house is based in this report. For the purposes of this report, the façade of the house is considered to face due south, although it actually faces southeast.

The Hall-Dyer House is a two-story, hip-roofed dwelling with an L-shaped floor plan. The principal façade measures about 38 feet in length and faces south across a long field or lawn toward Tamworth's Main Street. The wing of the dwelling was built in two segments, made architecturally coherent on the exterior but exhibiting differing carpentry systems inside. The length of the side elevation of the house prior to the addition on the wing was likewise about 38 feet; the eastern side of the house is oriented parallel to Great Hill Road in Tamworth Village. The extension of the wing measures about 19 feet in length, bringing the length of the side elevation to 57 feet.

The house is a framed dwelling standing over an excavated basement under the entry, eastern parlor, and original wing; the western sitting room and the extension of the wing stand on stone foundations above shallow crawl spaces. Basement walls are constructed of glacially rounded fieldstone, with split granite underpinning above grade on all visible elevations. The underpinning stones are neatly split, but not hammered to flat faces.

The façade or south elevation of the building, shown above, is distinguished by an entrance doorway or frontispiece with three-over-two double-hung sidelight windows and a false fanlight

having a semielliptical arch surrounding a delicate louvered wooden fan. Above the doorway is a three-part second-story stairhall window with a ten-over-ten central sash, flanked by two-over-two side sashes, all double-hung. These elements constitute an architectural composition that is common in the more elaborate dwellings of Carroll County in New Hampshire and in adjacent York County in Maine, extending throughout the region from the Maine coastal villages. While the combination of arched doorway and three-part second-story sash derive from the early Federal style, these elements on the Hall-Dyer House display pilasters that serve as mullions between the several elements and exhibit profiles that derive from early the Greek Revival period, as described in greater detail below.

The remainder of the façade is clapboarded, and the other front windows are filled with nine-over-six sashes on the first story and by six-over six sashes on the second. The cornice of the house is composed of a cyma recta crown molding above a Grecian ovolo and cavetto bed molding. The bed molding is mitered out about an inch above the architrave of the three-part window in the center of the façade.

The other elevations of the house are marked by clapboarded walls and fairly regular window placement, with each end elevation of the main house having two windows on the first story and two above. The eastern elevation of the original wing has two windows and a secondary entrance on the first story and three windows, placed above the first-floor openings, on the second story. The western elevation of the wing has two windows on the first story and two above them on the second; in addition, this elevation has an added modern exterior doorway that until recently opened into a former enclosed porch, now removed, at the juncture of the main house and the wing.

The added but early extension of the wing echoes the relatively symmetrical fenestration of the original wing, with two windows on each story on the eastern elevation, facing Great Hill Road. The western elevation of the wing retains two windows on the second story, but the first story of this side of the addition has been enlarged with a lean-to or shed-roofed extension having an entrance door flanked by two windows that light the kitchen of an independent apartment occupying the added portion of the wing.

The frame of the house retains integrity from its periods of construction. The main house and original wing are or were hip-roofed. The three hips of the roof retain heavy, hewn kingposts, which rest on hewn tie beams that extend across the width of the respective frames below. The roof frames of the house and original wing are composed of hewn common rafters, with each pair of rafters resting on a hewn tie beam; the tie beams extend across the wall plates and are half-lapped into the tops of the plates. The tops of the rafters are tenoned into hewn pentagonal ridgepoles that span the intervals between the tops of the kingposts.

Roofs of common rafters, whether hewn (as here) or sawn, are uncommon in eastern New Hampshire until the 1830s. By contrast with the roof frame of the original house and wing, the roof of the added section of the wing reverts to the type of framing tradition that had been typical of eastern New Hampshire since the seventeenth century. The added section of the wing, apparently the work of a different carpenter from that of the original house, has a rafter-and-

purlin roof frame. Although the original wing and the added section differ in framing traditions, the addition appears to be only slightly newer than the original house and wing.

*Hall-Dyer House, Tamworth, New Hampshire: Roof frame of main house, looking east*

*Hall-Dyer House, Tamworth, New Hampshire: Roof frame of added wing, looking northwest, showing a principal rafter and two horizontal purlins. The roof sheathing is modern.*

The interior woodwork of the Hall-Dyer House contrasts with the general impression of the exterior of the house. While the latter suggests the Federal style in overall composition, the interior joinery of the principal rooms of the house reflects the new Greek Revival style. The new style is seen especially in the balustrade of the front entry or stairhall and in the doors and the door and window casings of the front rooms. The detailing of the original wing of the house is minimal, and subordinate to that of the stylish front rooms. Window casings in the wing, for example, reflect the then-familiar Federal style, as discussed below.

*Left: Balustrade in front entry, showing heavy, turned newel and angle posts*

*Right: Doorway from parlor chamber to upper stairhall, showing simple torus backband moldings*

The interior joinery of the Hall-Dyer House reflects the aesthetic changes that were occurring in New Hampshire and throughout New England during the 1830s, contrasting with the more conservative Federal style appearance of the exterior of the house. At the same time, the interior

detailing of the house is far simpler than that of contemporary dwellings in urban centers of New Hampshire, seeming to reflect the aesthetic understanding of a rural joiner who was trying to convey the essence of the incoming style without the benefit of nearby sophisticated examples of that style.

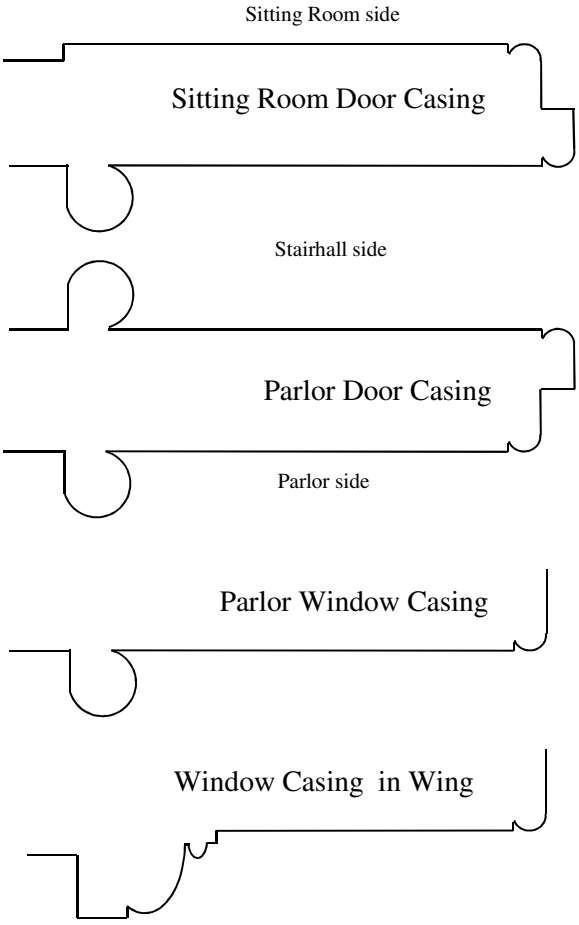
The Hall-Dyer house presently has one internal chimney, adapted for stoves and also serving a furnace located in the basement of the original wing. This chimney seems to bear no relation to the original sources of heat in the house. Original chimneys have been removed with little trace of their masonry and with minimal reflection in the layout of the house frame. Pending further examination, it may be theorized that the original chimneys were designed for stoves rather than for fireplaces, and thus were smaller in dimensions than would have been expected a few years earlier. Cast iron, air-tight parlor stoves and kitchen ranges were being introduced in the 1830s, and more progressive house builders of the period sometimes adopted the new technology, even as more conservative homeowners remained faithful to open fireplaces and to brick ovens for baking.

It seems likely that one original chimney rose through the main house at the center of its eastern wall, where an unusually narrow framing bay exists from cellar to attic and where cuts in existing floor boards and a rafter suggest the former presence of a small chimney.

A second chimney, serving the original kitchen of the house, may have risen along the rear or northern wall of the wing of the house. This area is presently disturbed by a stairwell, and the framing and sheathing of the original hipped roof of the wing were removed when the wing was extended a few years after the house was built, obliterating any evidence that may have existed in the roof fabric. The basement wall in the possible location of the base of such a chimney has been pointed with lime-sand mortar in a way that is not typical of the remainder of the cellar walls, but this difference is not necessarily indicative of the former presence of a chimney here.

The sitting room and the chamber above it at the western end of the main house reveal no clear evidence of an original chimney; these may have been unheated rooms. At some point, an interior chimney was placed against the northern wall of these rooms, and its fragmentary footing or foundation is visible in the crawl space under the sitting room; an exterior chimney, now removed, was later built against the exterior of the northern wall of the house in a nearby location. The roof framing and sheathing above the western end of the house do not reveal obvious evidence of a chimney for these rooms.

As noted above, the Hall-Dyer House exhibits a stylistic hierarchy, with its front rooms displaying joinery of an unorthodox but recognizably Grecian character, and with the rooms in the wing displaying minimal but traditional joinery that looks back to the 1820s. The interior finish suggests the hand of a joiner who was aware of the characteristics of the incoming Greek Revival style but lacked contact with contemporary urban examples of that style and thus produced a vernacular interpretation. The craftsman distinguished the front rooms of the house with his interpretation of the new style but, as was typical of many houses at many periods, reverted to simpler and more traditional detailing in the subordinate rooms in the wing. The difference in interpretation can be seen by comparing door and window casings from the front of the house to those in the rooms of the wing, as shown below:

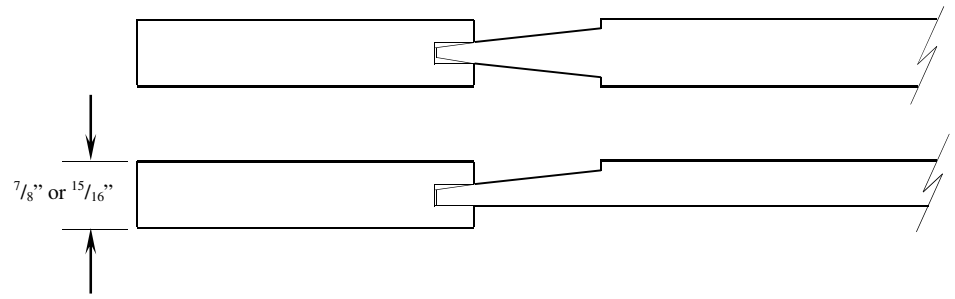



*Not to scale*

The casings or architraves shown above relate in an elementary way to casings that were being introduced in urban buildings during the early 1830s. While the Hall-Dyer House casings are extremely simple, their distinctive backband—a plain round or torus molding—would have been a recognizable reflection of a similar feature that was appearing in more elaborate houses, as seen below.

*Left: Parlor door casing from Upham-Walker House (1831), Concord, N. H.*

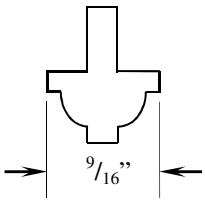
Doors throughout the house display a simple, four-panel design that dispenses with the moldings that ordinarily border the panels of Federal-style doors. The Hall-Dyer doors have raised panels on both sides when they connect two principal areas such as the stairhall and a front room; they have raised panels on one side only when they connect spaces of lesser stature, or closets:




*Not to scale*

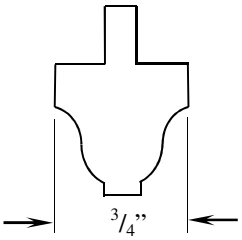
*Changes of the early twentieth century:* All of the basic features described above are character-defining attributes of the Hall-Dyer House as it was constructed, and should be preserved and enhanced during future rehabilitation. There is, however, a second architectural identity embodied in the house, especially in the rooms of the original wing. While many of the later twentieth-century changes to the Hall-Dyer House resulted from its conversion to three independent apartments or living units and were of a makeshift nature, the changes of the early 1900s possess coherence and clearly represent a deliberate investment in the modernization of the house, perhaps for an altered use that has not been documented thus far.

These changes are particularly evident in the following areas: 1. Installation of new window sashes throughout the building except around the doorways; 2. Installation of narrow flooring throughout much of the building: maple in the front rooms and southern yellow pine on the first story of the wing; 3. Construction or remodeling of the stairway in the wing in a distinctive "Craftsman" style; 4. Replacement of the original thumb latches on the original doors with mortise latches having elongated metal escutcheons and glass knobs.




Left: Muntin profile of original sashes

Right: Muntin profile of early twentieth century sashes




*Not to scale*

Replacement of the sashes was done carefully, with new units replicating the presumed original configurations of nine-over-six on the first story and six-over-six on the second. The sidelights of the front door, the three-part double-hung units above, and the transom over the side door of

the wing, being specially fabricated for unique openings, were not replaced during this remodeling. The contrasting muntin profiles of the original sashes and those of the early twentieth century are shown above.

*Above: Early twentieth-century balustrade in wing*

The early twentieth-century features of the Hall-Dyer House represent a conscious adaptation of the house. An element of this adaptation may have been for comfort and style, as in the installation of maple flooring. An element may have been practical, as in the presumed modernization of a kitchen in the wing. But on the second floor of the wing, a series of small chambers were created near the head of the staircase shown above. These small rooms have the appearance of chambers for boarders or possibly servants. The fact that these rooms (some of them having diagonal partitions) reflect a change to an earlier floor plan is indicated by evidence in the floorboards of former partitions, as seen below.

As indicated in Frank West Rollins' *The Tourists' Guide-Book to the State of New Hampshire* (1902) and by several modern sources on Tamworth history, Tamworth was a focus of the summer boarding house movement in the early twentieth century. Well over a dozen boarding houses operated in various parts of the town, attracting summer visitors on an impressive scale. While the Hall-Dyer House is not clearly identified as one of these establishments, further research may disclose that the house did operate as a boarding house, or as an adjunct to nearby accommodations when they were over-full. The provision of small chambers in the wing clearly denoted an important chapter in the history of the property, and this chapter deserves research and interpretation, as well as careful regard for the preservation of its physical evidence.

*Evidence of the construction date of the house:* As stated earlier, the accumulated physical evidence offered by the Hall-Dyer House points to a date of construction in the early 1830s rather than in the first decade of the nineteenth century. If verified by further examination and research, this conclusion will be important in the interpretation and treatment of the house by the Tamworth Historical Society. For this reason, various types of evidence are discussed in greater detail below.

A. Framing: The main diagnostic features of the building frame that point to a date after 1830 are the roof system of common rafters and the absence of evidence for large fireplace chimneys. The latter attribute suggests that the house was originally heated by some form of stove, a heating method that was uncommon until after 1830.

   The common rafter roof discussed and pictured previously was practically unheard-of in eastern or central New Hampshire until about 1830. The roof framing system that had been universal in those parts of the state was the rafter-and-purlin system, which employs roof sheathing boards laid from ridge to eaves rather than horizontally. While common rafter roofs were commonplace in southern New England, especially Connecticut, the influence of that tradition was felt only in the Connecticut River valley of New Hampshire before 1830. In that region, settled by immigrants from Connecticut and Rhode Island, common rafter roofs are frequently encountered in the eighteenth and early nineteenth centuries.

   In the central and eastern portions of the state, the common rafter roof system began to supplant the rafter-and-purlin system after 1830, especially in roofs that employed sawn

rafters. The fact that the Hall-Dyer House employs hewn rafters tenoned into a pentagonal ridgepole, even though the second story floor joists (now exposed in the parlor) are sawn 3" by 8" members, may point to a date early in the 1830s. It is notable that the carpenter who framed the extension of the wing, apparently not long after the house was finished, reverted to the older framing system, which was far more familiar to builders of that transitional era.

B. Granite splitting: The basement of the house is excavated only beneath the stairhall, the parlor (southeastern room), and the original wing. The cellar walls are constructed of glacially rounded fieldstone to the top of grade outside the building. Above grade, the walls are topped with split granite underpinning stones. These stones extend around much of the perimeter of the house, including the later extension of the wing. Under both the original house and the extension of the wing, the underpinning stones were left with a split face rather than being hammered to a plane surface. The split faces of the stones reveals that most or all were split with plug drills, which leave cylindrical holes, and with plugs and feathers, a three-part type of wedge and shim that is adapted to round holes.

   The use of plug drills and plug-and-feather wedges has been studied in scores of accurately dated buildings. With only one or two exceptions seen in leading areas of granite quarrying, this technique was employed only after about 1830. A further explanation of this technology, and the splitting methods that preceded it, is appended to this report.

*Underpinning stone on the south elevation (façade), showing plug drill holes along bottom edge*

It is of course possible that an older house could be underpinned with newly-split granite after about 1830. Upgrading of this kind is sometimes seen in ancient towns like

Portsmouth and Exeter, where many eighteenth-century houses were modernized during the nineteenth century. In the case of the Hall-Dyer House, however, so many other attributes point to a date after 1830 that the underpinning stones may reasonably be regarded as original.

C. Joiner's work or interior and exterior trim: The unusual door and window casings or architraves of the front rooms of the house have been discussed above and linked to urbane examples of trim in the Greek Revival style. As with underpinning stones, it is possible that interior woodwork could be replaced well after a building was constructed, leading to the impression of a later date of original construction. In the case of the Hall-Dyer House, virtually all lath and window casings have been removed from the exterior walls of the parlor. This removal permits an examination of the nail holes in the wall studs and window frames. As seen in the photograph below, right, the window casings have been replaced in their intended position with their nails returned to the original nail holes. There are no other nail holes, demonstrating that these casings are not replacements of a later date, but original to the house.

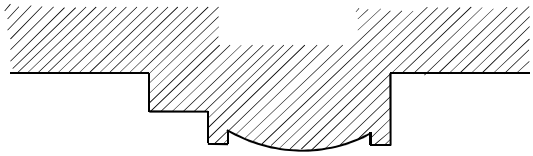
*Left: Parlor window, showing a single set of nail holes on the stud for lath*

*Right: Parlor window, showing a single set of nail holes for the window casing*

The exterior joinery of the house also reveals a later date, but only upon examination of subtle features. The overall form of the central entrance and the three-part second-floor window are characteristic of the Federal architectural style, as seen below.

*Hall-Dyer House: Front doorway and second-story stairhall window*

A closer examination of the principal casings that serve as mullions between the major openings of this composition, however, reveals that these features are uniform throughout both the doorway and the window, and have the profile shown below:



This profile—a broad convex molding embraced by two fillets—is not characteristic of the Federal architectural style, even though the overall composition of doorway and three-part window derives directly from that era. Rather, this symmetrical casing profile is a Greek Revival form. Similar profiles first became familiar to New England craftsmen with the publication of Asher Benjamin's builder's guidebook, *The Practical House Carpenter*, in Boston in 1830. This was the first New England text that delineated the attributes of the new style, signaling the end of the long-familiar forms of the Federal era and the advent of new and bolder details, as well as new floor plans and building shapes.

The impact of the incoming Greek Revival style is seen especially well in Tamworth in the transformation of the Captain Enoch Remick House on the opposite side of Great Hill Road from the Hall-Dyer House. When first constructed, the front section of the Remick House was five bays wide and "two bays deep, with a hip roof that was framed into a second hip roof that covered a two-story, four-bay deep 'ell.' Sometime ca. 1830 the roof was raised and reframed as the present gable roof, which continues in one plane along the entire north-south length of the building."[1] At about the time the Hall-Dyer House was constructed, in other words, the house across the road was transformed from a dwelling of similar L-shaped, hip-roofed configuration into a temple-form structure with a front pediment. Local joiners were clearly aware of the incoming style and, depending upon the wishes and budget of homeowners, were able to reflect the new style in varying degrees of expression and elaboration.

Other categories of evidence bolster the conclusion that the Hall-Dyer House was constructed after 1830 and that its simple interior detailing is original, and represents a deliberate, if vernacular, expression of the incoming Greek Revival style. This evidence includes the technology of the cut (machine-made) nails used in the house and the characteristics of the thumb latches that were originally mounted on the interior doors. Because this evidence was not studied in depth, however, this report will limit itself to the discussion above.

[1] "Remick, Captain Enoch, House," National Register of Historic Places nomination, 1996.

*Character-defining features:* As stated at the beginning, the primary purpose of this report is to identify the character-defining features of the Hall-Dyer House so that these features may be protected and interpreted during future rehabilitation and use of the house as headquarters of the Tamworth Historical Society.

As indicated in the discussion above, the house now appears to retain a greater degree of architectural integrity than might at first be assumed. Features like the simple yet distinctive four-panel doors and the door and window casings of the front part of the house, or the unusual but robust balustrade, appear in most cases to be original. Preservation of these features (or their careful replacement when already removed) must be a priority of future treatment of the house. Further, as noted below, the split-board lath and its surviving plaster on walls and ceilings is shown by nail evidence to be (or, where removed, to have been) original. These plaster surfaces should be preserved and restored. The question of thermal insulation for the house needs to be studied carefully before any further changes are made to the exterior walls.

Nearly all entities that grant funds for architectural preservation make their grants contingent upon treatment of a historic property that complies with federal standards. These standards, developed by the National Park Service, are broadly termed *The Secretary of the Interior's Standards for the Treatment of Historic Properties*. These *Standards* include four sub-categories: *Standards* for preservation, rehabilitation, restoration, and reconstruction. *The Secretary of the Interior's Standards for Rehabilitation*, one of these sub-categories, is most applicable to the adaptive treatment that the Tamworth Historical Society intends for the Hall-Dyer House. *The Secretary of the Interior's Standards for Rehabilitation* are appended to this report.

As stated in Standards 2 and 5, "The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided;" and "Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved." These standards thus require that all but the most obviously makeshift and recent changes that have occurred to the Hall-Dyer House be regarded thoughtfully. Since it now appears that a high proportion of the interior surfaces of the house represent original construction, it will be important to protect all of the remaining interior material until each feature and surface can be studied. The interiors should be studied both in light of their condition and in relationship to changes, such as improved heating and electrical systems or thermal insulation, that may be deemed necessary or desirable during rehabilitation of the house.

As stated in Standard 4, "Changes to a property that have acquired historic significance in their own right will be retained and preserved." This principle requires that some of the later changes to the house, especially those that were carried out coherently and responsibly, apparently in the context of some changed use of the building, be carefully evaluated for significance and preservation. Specifically, the changes that may be dated to the early twentieth century, including the then-new window sashes, the partitions on the second story of the original wing, and the staircase in the wing, should be retained if possible, and a research effort should be made to understand the reasons or motivation for these deliberate alterations.

If successful in raising sufficient funds, the Tamworth Historical Society intends to employ an architect and a consulting engineer to study the physical condition and programmatic needs of the Hall-Dyer House. The resulting proposals for treatment of the property will certainly affect many if not most aspects of the building. In the course of developing guidelines for needed adaptation and rehabilitation, the following attributes should be evaluated thoroughly.

*Foundation:* The Hall-Dyer House stands over a partially excavated basement. The basement extends beneath the stairhall or entry, the parlor, and the original wing of the house. The basement walls are constructed of dry-laid native fieldstone, pointed with lime-sand mortar and chinked with stone and brickbats in some areas. The stones that were employed below grade are glacially rounded. They therefore are inherently not as stable in a wall as split or naturally fractured stone; in fact, a section of the foundation wall near the southeastern corner of the basement appears to have collapsed and to have been repaired with a small area of poured concrete below grade level.

*Hall-Dyer basement, looking southwest, showing fieldstone walls and split granite underpinning*

Like all stone foundations, this foundation is pervious to water infiltration from the roof and from the surrounding soil outside the house. As a consequence, the basement is damp. The result of a damp basement is inevitably the suffusion of water vapor into the air in the upper zones of a building. Water vapor can result in levels of relative humidity that are too high for the proper storage of museum collections, and, under certain ambient conditions, can condense as liquid water or hoarfrost in the winter.

Since the foundation walls and the basement are character-defining features of the Hall-Dyer House, the treatment of the basement and the crawl spaces should be considered carefully and

with respect to moisture management for the entire building. The subject of moisture management in historic buildings is complex, and outside the scope of this report, but will require attention in adapting the building to the needs of the society.

*Building frame:* The Hall-Dyer House has a staunch frame of hewn and sawn timber, well braced between posts and girts. A seen in the photograph above, the first floor frame is composed of hewn girders and of natural tree boles, called "sleepers," which constitute the normal first-floor joists of most older New England houses. As seen in the photograph below, the second-floor frame is composed of a combination of hewn girders and sawn joists (3" by 8" where measured), spaced according to needs that apparently included the location of former chimneys.

*Hall-Dyer second-story frame above the parlor, looking south. Note that the wall post in the southeast corner (left) was hewn back and scarified to receive plaster and thus to be invisible from within the room.*

Since this frame will probably be examined with regard to code-mandated floor loading, and since nineteenth-century carpentry is often found to be theoretically insufficient to bear code-defined loads, it will be important to devise ways of strengthening the frame, if necessary, that are additive rather than subtractive. Adding supplementary framing members, or "sistering" existing members, are often acceptable solutions. The existing ceilings in other rooms may be original, or at least retain original split-board lath if not plaster, so assessment of floor frames elsewhere in the house will need to be done carefully, and strengthening, if found necessary, may be difficult to carry out gently.

It is likewise possible that the roof system of the house will be found to be theoretically insufficient to bear snow and wind loads that are applied in current engineering analysis. If so, the strengthening of the roof should be done in ways that do not remove original material, but supplement such material.

It should be noted that the roof as it stands appears to be in good repair, but also appears to have suffered neglect and damage in the past. The northern (rear) slope of the main roof and the adjoining western roof slope of the wing (both the original and the added sections of the wing) have been re-sheathed. The rafters and sheathing of part of the original roof on the northern (rear) slope of the main house and the adjoining roof of the wing have been replaced, probably reflecting prolonged former leakage that started in the valley at the intersection of the two roof slopes, as seen below.

*Replaced hip and jack rafters and roof sheathing at the intersection of the roofs of the main house roof and the wing, looking southwest from the attic of the wing toward the main attic.*

*Interior finish or joinery:* As discussed above, much of the surviving interior trim of the house may be regarded as original and as highly significant to the architectural identity and integrity of the house. In areas where casings have been removed, as seen in the photograph of the parlor, above, the surviving elements must be regarded as precious and must be safeguarded against loss. The society should plan to reattach the removed backband moldings to their appropriate casings, carefully inserting all nails in their original nail holes, and should similarly plan to reinstall the assembled casings in their original positions after the wall treatments of the parlor and front sitting room are decided upon.

While the casings that have been removed from the parlor are hand-planed and fastened with cut (early machine-made) nails, the casings that have been removed from the opposite front room

(the sitting room) are modern replacements. For some unknown reason, some or all of the original casings in the sitting room were replaced with machine-planed, square-edged boards, fastened with modern wire nails. It will be important to try to determine whether this room originally shared the casing details seen in the parlor. If not, then the existing, modern casings might be reapplied as elements that embody a chapter in the evolution of the house.

As noted above, the original finish floors in the first story of the Hall-Dyer House were replaced, probably in the fairly extensive changes that were carried out in the early twentieth century. The front rooms were re-floored in a hardwood, apparently maple, while those in the original wing (which then probably served as the kitchen area of the house) were replaced with southern yellow pine, a common wood for ordinary flooring at the period. For various reasons, some of these floors have suffered cosmetic damage and deterioration. Their treatment and repair should be considered thoughtfully.

*Wall and ceiling plaster:* As noted above, much of the plaster that survives in the house is applied on original split-board lath. In other areas, the plaster is applied over more modern sawn wooden lath. Both plastering systems are now historic and represent technologies and craft practices that have largely been lost. All remaining plastered surfaces in the house should be assessed for condition and preserved or repaired when it is possible to do so. In many parts of the house, plastered surfaces (especially ceilings) have been covered with sheet materials of indeterminate age. In some rooms, the original plastered ceilings appear already to have been replaced with gypsum board. All of these varying conditions should be inventoried and assessed. Where current surfaces, of whatever composition, are in good condition, it would be prudent to retain them in use unless there is good reason to replace them.

Today's wall and ceiling technology is largely limited to gypsum boards of varying types, used either as a finished material with taped joints, or as a base for a skim coat of gypsum plaster. Since most of the wall and ceiling systems seen in the Hall-Dyer House cannot be replicated easily, their retention rather than their replacement with gypsum products would be financially conservative and should comply with the *Secretary's Standards*.

*Exterior:* Except around the doors and windows, the exterior of the house was not examined in detail. In general, the exterior surfaces are in good (front) to fair (west side) cosmetic condition, with disruption of clapboards caused mostly by removal of features like an exterior chimney and a former north porch that proved rear entry to two apartments.

Although the exterior could benefit cosmetically from repainting, the present paint has failed in a way that suggests excessive moisture content in the clapboards. Re-painting at this stage would probably be wasteful of effort and materials. For economy's sake, exterior painting should await analysis of moisture conditions throughout the house and the successful management of excess moisture.

*Heating systems:* The house currently has two heating systems: a forced hot-air furnace in the first floor kitchen of the northern apartment, vented into an exterior chimney that rises along the northern wall of the wing; and a forced hot-air furnace in the basement of the main house, formerly serving two apartments in the main house and original wing.

The furnace in the occupied apartment is assumed to be in safe operating condition. The furnace in the basement is not in safe condition and should not be activated until it has been professionally serviced. The breeching or furnace combustion vent is not attached to the adjacent brick chimney. The chimney is cracked in a number of areas and should not be used until it is determined whether these cracks extend upward close to the wooden elements of the building. The chimney appears to have been rebuilt in the attic and to be sound at that level.

# THE SECRETARY OF THE INTERIOR'S STANDARDS FOR REHABILITATION

## Standards for Rehabilitation

*"Rehabilitation" is defined as the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values.*

1. A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces, and spatial relationships.
2. The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces, and spatial relationships that characterize a property will be avoided.
3. Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.
4. Changes to a property that have acquired historic significance in their own right will be retained and preserved.
5. Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.

6. Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.
7. Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.
8. Archaeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.
9. New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work shall be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.
10. New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

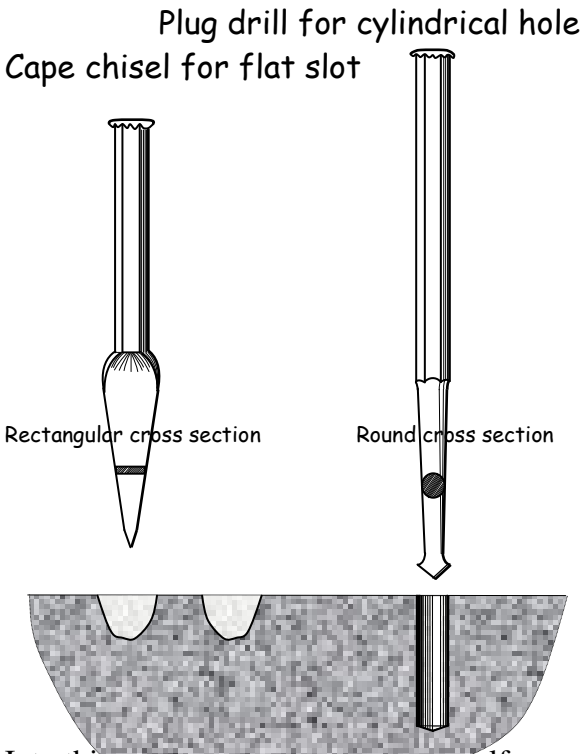
NEW HAMPSHIRE DIVISION OF HISTORICAL RESOURCES
State of New Hampshire, Department of Cultural Resources 603-271-3483
19 Pillsbury Street, 2nd floor, Concord NH 03301-3570 603-271-3558
Voice/ TDD ACCESS: RELAY NH 1-800-735-2964 FAX 603-271-3433
http://www.nh.gov/nhdhr *preservation@nhdhr.state.nh.us*

# GRANITE SPLITTING TOOLS AND TECHNIQUES

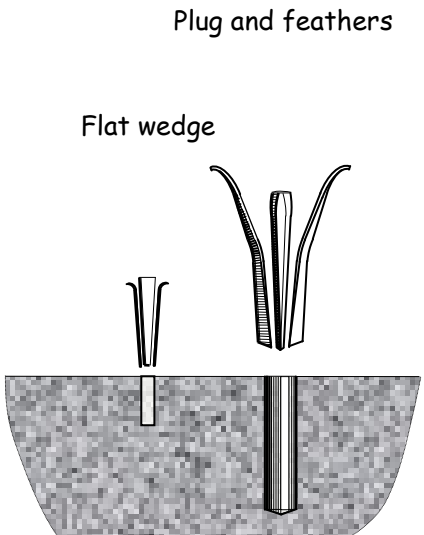
By about 1800, stonecutters in many parts of New England had perfected the basic techniques of finishing and shaping granite. These craftsmen were not only able to split large slabs and posts from boulders, but had also learned to use hammers and chisels to shape the stone to a wide variety of forms, including steps, thresholds, curbs, lintels, columns, watering troughs, and rainwater basins.

In the years just before 1830, a new granite splitting method was introduced. Each method of splitting granite leaves distinctive marks at the edge of the stone, and these marks reveal whether a given piece of granite was quarried or split before or after about 1830—useful knowledge in dating a building or a stone object.

Prior to about 1830, the procedure for splitting granite entailed the cutting of a line of shallow slots in the face of the stone, using a tool called a cape chisel, struck with a heavy hammer. Small, flat steel wedges were placed between shims of sheet iron and driven into these slots, splitting the stone. The new splitting method of circa 1830 used a "plug drill," which had a V-shaped point and was rotated slightly between each blow of the hammer, creating a round hole two or three inches deep.

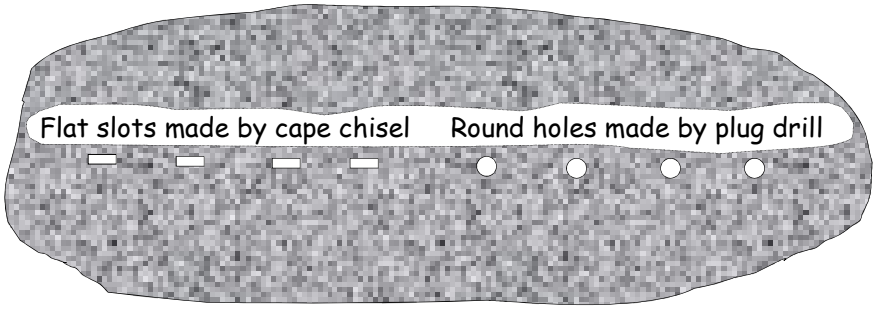



exerted outward pressure and split the stone. The advantage of the "plug-and-feathers" method of splitting was the greater depth within the stone at which the wedges exerted their pressure, thus allowing larger pieces to be split more accurately.



The new splitting technology seems to have spread rather rapidly through the granite quarrying centers of New England, although one is likely to find evidence of both old and new methods being used concurrently in stonework of the 1830s, especially in rural areas. The technique employed on a given stone can usually be seen on the split face, and provides some aid in dating granite masonry. The old, flat-wedge method is marked by a series of slot-like depressions which extend inward an inch or so from the edges of the split stone. The plug-and-feathers method leaves a row of rounded holes, two or three inches deep and usually about six inches apart.

When seen on the surface of a stone that was prepared for splitting but never split, these slots or holes appear as shown below:




The use of the plug drill in combination with the plug-and-feathers provided greater force and control in splitting granite. Until the introduction of the new technique, most granite for buildings and posts was split from surface boulders that had been strewn across the New England landscape at the retreat of the glaciers. Such stone had been transported by the ice from many points of origin, and each boulder challenged the stonecutter with different grain and behavior when split.

The introduction of the plug drill and plug-and-feathers seems to have enhanced stonecutters' ability to quarry granite from ledges. Ledge stone was more uniform in nature and predictable in behavior than granite split from surface boulders. With the opening of early quarries at ledges in Quincy, Chelmsford, and Rockport, Massachusetts; Concord, New Hampshire; and many locations in Maine, Vermont, and Rhode Island, New England began to assume its prominent place in the American and international granite industry.

*James L. Garvin*
*State Architectural Historian*