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NOTES ON THE MAINTENANCE AND REHABILITATION OF THE CAPTAIN ENOCH REMICK HOUSE AND RELATED BUILDINGS TAMWORTH, NEW HAMPSHIRE

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The following notes derive from an inspection of the Remick Country Doctor Museum and Farm on January 24, 1997. Also present at the inspection were Robert C. Cottrell, Director of the museum, and Elizabeth Durfee Hengen, author of the National Register nomination for the Enoch Remick House.

These notes address the points outlined in a document entitled, "Edwin C. Remick Foundation: 1997 Historic Preservation RFP (Request for Proposals)," draft version, 1/22/97.

ADA Accessibility: The Americans With Disabilities Act (ADA) is a civil rights law that was passed in 1990 and became effective in January, 1992.

The ADA requires that any private or public entity that maintains a building that is opened to the public must strive to make its facilities fully accessible to people with handicaps even if the managing entity plans no renovations to the building.

If it is not possible to make a public building, or some part of such a building, physically accessible, the managing entity must provide alternative means of providing access to programs or benefits that are offered in the inaccessible parts of the structure. These alternative means could include audio-visual access from an accessible part of the building (such as the first floor) to an inaccessible part (such as an upper floor). It is always preferable, of course, to provide full public access to all parts of the structure in which programs or benefits are offered.

Under the ADA, if a public or private entity rehabilitates a building (except for routine maintenance such as re-roofing or painting), it must ensure that ADA requirements for access are met.

There are two limitations on this requirement. The first is that the added costs of making a building fully accessible need not exceed 20% of the costs of the planned alterations. The second is that if the building has been designated as “historic” by federal, state, or local authorities, certain minimum standards may constitute compliance if, in the opinion of the State Historic Preservation Office (the New Hampshire Division of Historical Resources), compliance with more stringent accessibility standards would “threaten or destroy” the significance of the building.

Nevertheless, in general, historic properties must be made as accessible as non-historic properties to the greatest extent possible.

The minimum requirements for historic buildings that are subjected to alterations are:

1. Only one accessible route must be provided from a designated access point on the site to an accessible entrance to the building. If necessary, a ramp with a one-in-six slope (steeper than the normally-specified slope) may be permissible for a short run of up to two feet.
2. One accessible entrance must be provided to the building. If it is not possible to make the main entrance or the usual public entrance accessible, then an alternative entrance, unlocked when the building is opened to the public, is acceptable. Signs must be provided to direct people from the main entrance to the accessible entrance, and a notification system (usually, a bell) must be provided at the accessible entrance.
3. If public toilets are provided, only one need be handicapped accessible, and this may be unisex.
4. Public spaces on the level of the accessible entrance (normally, the first floor) must be handicapped accessible. Other public levels of the building must be made accessible whenever practical.
5. Displays or written information should be located where they can be seen by a seated person. Horizontal signage should be no higher than 44 inches above the floor.

Even these minimum requirements for accessibility may be negotiable, under close negotiation with the State Historic Preservation Office, if they conflict with the *Secretary of the Interior’s Standards for Rehabilitation*. The *Secretary’s Standards* have been adopted by the Edwin C. Remick Foundation as guidelines for all work on the buildings and grounds.

For further information on accessibility in the Remick House and service buildings, see the attached *Preservation Brief 32: Making Historic Buildings Accessible*.

Mechanical Systems (heating, electrical, plumbing, etc.): The Enoch Remick House appears to have a fully-upgraded electrical system. Any relics of older systems, especially those that pertain to the introduction of electricity to Tamworth village, should be preserved in place and by-passed if necessary. Rural electrification was one of the transforming themes of country life, and the impact of the introduction of electricity in Tamworth would make an important and interesting educational theme for the museum, especially for younger visitors who have never lived in a household without electricity.

The Enoch Remick House presently has an interesting system of water piping; this includes exposed pipes that traverse ceilings, and other plumbing arrangements that are characteristic of early pressurized systems. Even if these systems should fail in the future and be by-passed, they have a value in displaying the plumbing makeshifts and fixtures that typically were adopted when pressurized water first became available. All surviving early plumbing arrangements should therefore be retained as parts of the history of the property.

Even before the advent of electrical water pumps and air-pressure tanks, it was not uncommon among wealthy estates to have a system of pressurized water. Water pressure was typically obtained through the use of a windmill and an elevated tank, often enclosed in an architecturally interesting tower, placed near the well. From this tank, pressurized water was delivered to the house, with the pressure varying according to the height of the water in the tank above the level of the household fixture to which the water was piped. As an alternative, water was sometimes gathered at an elevated hillside spring, stored in a reservoir, and then piped to the house and barn. The pressure available in such a gravity system depended upon the height of the reservoir, or the top of the closed piping, above the house or barn plumbing fixtures. If any remnants of such systems can be identified at the Enoch Remick House, their interpretation to visitors would be a valuable educational benefit.

The oil-fired steam boiler of the house is currently vented through a power vent in the eastern basement wall of the building rather than through its traditional vent up the central chimney of the main house. This report discusses the condition of the chimney below, under **Chimney**.

In general, it would be advantageous to return the exhaust of the furnace to the chimney. This would keep the chimney stack warm, which reduces the likelihood of freeze-thaw damage to the masonry that is exposed above the roof. It would allow the boiler to operate without the need to rely on a secondary powered device (the power vent). It would prevent the accumulation of soot on the walls of the house around the vent. It would stop the emission of fumes from the area near occupied rooms, and particularly from the area that may become an entrance that is accessible to wheelchair users.

Apart from the necessary reconstruction of the upper parts of the chimney, discussed below, there would be a safety benefit in confining furnace gasses within an improved flue. Flues in old chimney are sometimes re-lined by the pouring of a refractory concrete around an inflated tube, which is deflated and removed after the concrete sets. Other re-lining systems include the insertion of a flexible stainless steel liner, with or without the addition of vermiculite around the outside of the liner.

In general, the *Secretary's Standards* are best observed by systems that are removable or reversible. For this reason, a chimney relining system that uses a device that can be retracted in the future is superior from the standpoint of the *Standards* to a system that entails the pouring of a permanent concrete filling for parts of the chimney.

A number of chimney lining systems of all types are advertised periodically in *Traditional Building*, which is familiar to the Remick Museum. The New Hampshire Division of Historical Resources also has product literature on some of these systems.

Fire Safety: The National Fire Protection Association (NFPA) has published two important documents on fire safety in historic buildings. Both documents--*NFPA 913: Recommended Practice for the Protection of Historic Structures and Sites*, and *NFPA 914: Recommended Practice for Fire Protection in Rehabilitation and Adaptive Reuse of Historic Structures*--are included with this report.

In general, fire protection in any building is accomplished by two means: detection and suppression. Parts of the Remick complex have already been equipped with both security and fire detection systems.

Fire protection in a historic building is often more complex than in a less significant structure. Suppression systems are frequently obvious and visually intrusive. Their installation can be damaging to historic fabric. Their activation can do both harm and good, since most systems use water as an extinguishing agent and water is damaging to historic building fabric and to museum collections.

Some museums and libraries are now experimenting with mist fire suppression systems. In contrast to traditional sprinkler systems, which deliver large quantities of water to the fire zone, mist systems permeate the fire area with a very fine fog of droplets that measure no more than 1,000 microns, and in some systems less than half that diameter. This fog is so fine that it is drawn into the fire plume, cooling the flame and quickly turning to steam, which smothers the fire. The mist also acts as a barrier to the radiant energy of the fire, preventing combustion of nearby flammable objects and allowing them by their relative coolness to absorb water and become less combustible.

Mist fire systems are currently new to the United States and are now undergoing approval by Underwriters Laboratories. Although such systems have not yet been widely accepted within the fire service, they are being experimented with at Canterbury Shaker Village. For further information, contact Sheryl Hack, Curator, Canterbury Shaker Village, Inc.

There are also a variety of fire retardant chemicals and intumescent paints on the market. These react with heat to produce chemicals that extinguish flames, or else effervesce and swell to produce an insulating covering that prevents or slows combustion. Fire retardant chemicals may be especially appropriate for use in hidden areas like inaccessible attics and knee wall spaces, or for use in barns and other buildings where natural wood is exposed.

For detailed planning on fire protection for the Remick properties, the Foundation may prefer to consult with a professional fire protection engineer rather than relying on representatives of various security and fire suppression companies. A list of fire protection engineers has been prepared by the office of the New Hampshire State Fire Marshal and is attached to this report.

If the Remick Foundation wishes to consider a mist suppression system, that fact should be expressed at the outset when sending requests for proposals to fire protection engineers. Due to the newness of mist systems in the United States, some engineers may not yet be willing to be flexible and imaginative in evaluating the benefits of such fire suppression systems versus those of more traditional systems.

Painting and glazing: In general, traditional painting methods and materials are recommended for historic buildings. This means that dry hand-scraping, careful priming followed by caulking as necessary, and the application of one or two finish coats of high-quality paint, long the standard practice of the house painter's craft, is still regarded as the best approach to protecting historic buildings. Although the best paint for exterior use, white lead in linseed oil, is no longer available in the United States under most conditions, modern oil-based paints which use a synthetic alkyd oil are regarded as superior to latex paints for historic buildings. Although white lead is not easily obtained, the best alkyd-based paints that use titanium dioxide as a white pigment can produce a durable coating.

In good traditional painting, the cost of labor always far exceeds that of materials. It is therefore good economy to buy the best possible paint even if its price is twice that of a cheaper paint, or more.

A very high quality titanium dioxide paint is now being imported from Holland by a company in Woodstock, Vermont. Literature on this product is attached to this report.

Since labor is the most costly part of a paint job, it is important to employ house painters who are accustomed to the traditional practices of their craft and who are properly equipped and careful in their work. As an aid to setting standards for painters, sets of generic painting specifications for both exterior and interior painting are attached to this report.

In general, removal of paint from flat surfaces is usually accomplished successfully by hand scraping. Removal of paint from complex surfaces such as mouldings usually requires both softening with chemical paint removers and manual scraping, after softening, with curved scrapers. Recently-introduced systems like "Peel-Away™" are also successful (though often expensive), provided that any residual chemicals are carefully removed by washing with denatured alcohol or other appropriate solvents. Painters with broad experience in the traditional aspects of their trade are familiar with the techniques of preparing wood that has been stripped through the use of solvent paint removers, and figure the costs of careful preparation into their bids for the job.

Where paint is sound and only slightly cracked, as on most of the outside blinds of the Enoch Remick House, adequate preparation is normally achievable through thorough sanding and cleaning to ready the old surface for new paint rather than through wholesale paint removal through chemical dipping or other measures. Wholesale removal of paint by dipping (often used for exterior blinds without full regard for its consequences) can cause two difficulties. First, the powerful chemicals used in tank dipping processes can penetrate the wood, preventing the good adhesion of new paint. Second, in complex but delicate features like window blinds, the accumulated paint layers often serve to seal the joints and to stiffen the shutter. Chemical removal of this accumulated paint membrane can loosen the blinds and require unexpected repair work.

Where repairs are found to be necessary on exterior window blinds, epoxy consolidation is often cheaper, and more in accord with the Secretary's Standards, than replacement of damaged components with new wood. While epoxies are not inexpensive for structural work, such as decayed beams and columns, epoxy wood consolidants and fillers have proven to be especially economical and effective on more delicate building components like sashes and blinds.

For further discussion of paint issues, see the attached *Preservation Brief 10: Exterior Paint Problems on Historic Woodwork*.

Where panes of window glass have been replaced in modern times, single-strength float glass has apparently been used. This type of glass is optically perfect, and contrasts noticeably with the rather crude hand-blown glass employed in the older sashes. If hand-blown glass is wanted, the S. A. Bendheim Company makes cylinder window glass, a form of hand-blown glass. Literature on the Bendheim Company is attached.

Woodwork: Due to continuous maintenance, the exterior of the Enoch Remick House is in generally good condition. Where features may need repair, this should not be difficult to accomplish through careful replacement or patching with comparable wood species, as is recommended by the *Secretary's Standards*. As noted above, epoxy repairs may be appropriate in some areas. Our inspection did not reveal any areas of severe deterioration that would require wholesale replacement of clapboards or trim. In the case of cracked clapboards like the one noted on the western face of the woodshed behind the house, a typical method of repair would be to replace this individual clapboard by cutting off the

nails in the clapboards above it and slipping a substitute clapboard into place. Since all buildings in the complex retain a very high proportion of original clapboards, repair will generally be preferable to replacement wherever possible.

In replacing clapboards, it is best to back-prime the replacements with high-quality housepaint primer before installing them. Back-priming helps to reduce cupping or twisting of the wedge-shape clapboard from heat and moisture.

In general, radially-sawn clapboards are superior to plain-sawn clapboards or to clapboards that have been re-sawn on a bandsaw. Attached to this report is information on a few suppliers of radially-sawn white pine clapboards.

In the case of elements that have deteriorated due to exposure to the weather, replacement will of course be necessary in some cases. Examples of such deterioration would include wooden shingles which, unless protected by often-renewed paint or stain, are considered sacrificial cladding that must be replaced periodically. Shingles in unusually exposed situations, like those on the cupola of the stable, are especially susceptible to deterioration.

In replacing old shingles, it is important to note that New Hampshire buildings built before 1900 were traditionally covered with white pine shingles (either split or sawn, depending on the period) rather than with eastern white cedar or western red cedar shingles. White pine shingles are superior to cedar shingles in their ability to hold paint, and weather to a somewhat different appearance when left unpainted. Due to limited demand for pine shingles today, however, few mills make them. Two firms that have made white pine shingles in recent years are:

Arthur H. Sanborn
Sanborn Farm Building Materials
Chester Road, RFD #2
Candia, New Hampshire, 03034
Tel: (603) 483-2503
483-2227

Shingle Mill, Inc.
73 Stuart Street
Gardner, Massachusetts, 01440
Tel.: (508) 632-3015

Given the importance of native pine shingles to good restoration, and the difficulty of finding such shingles in the marketplace, the Remick Foundation might give some consideration to acquiring a shingle mill and producing shingles from its own stands of pine for both educational and commercial benefit.

Hardware: We did not examine hardware issues in any detail. The Remick buildings seem to retain a large percentage of original hardware. Hardware that is broken or missing pieces should, in general, be repaired or replaced in kind (if possible) rather than supplanted by modern near-equivalents. *Traditional Building* and other source lists provide extensive lists of makers of reproduction hardware of many types.

Weathersealing, insulation, etc.: The issue of heat retention in historic buildings is often a complex one in which the desire for energy efficiency is opposed by the need to permit the building to “breathe,” or transpire the gaseous water (water vapor) that accumulates in any occupied structure. While the nineteenth century was a period marked by deliberate efforts at changing air and increasing ventilation in buildings for reasons of supposed health benefit, the late twentieth century has been a period of ever-tighter sealing and weatherproofing of structures.

In historic houses which lack vapor barriers or retarders on the warm sides of their walls and ceilings, installation of thermal insulation creates a great danger of condensation within wall cavities. For this reason, it is general practice to recommend reasonable sealing of historic buildings against needless infiltration of cold air, but to caution against the introduction of insulation of any kind in wall cavities. Because most heat loss by transmission through building materials occurs through ceilings into attic spaces, it is often good practice to insulate ceilings. At the same time, attics should be ventilated above this insulation to an adequate degree to allow water vapor that passes through the ceilings and through the insulation to evaporate or sublimate into the dry winter air outside the building.

The roof configuration of the Remick House prevents the effective ventilation of attic spaces. If the upper rooms of the house, beneath the lower slopes of the roof, are to be heated and occupied in the future, some thought will have to be given to the venting of water vapor from these spaces in order to prevent condensation on the cold undersides of the roof sheathing boards.

At present, with third-floor rooms largely unheated and little-occupied, the large volume of air in the third story absorbs water vapor that penetrates from the two heated stories below, and this water vapor evidently finds its way to the outside of the building through natural ventilation around third-floor windows, through the wall fabric of the front and rear gables, and elsewhere. Since there was no obvious sign of frost or dampness in the uppermost attic (which we inspected by way of the trap door next to the front chimney), the house does not seem to be suffering from excessive moisture or condensation. This situation should be monitored periodically, and plans for increased ventilation should be made if there is significant wintertime use of the third floor in the future.

One of the best and most effective types of storm sash for old houses is the traditional four-pane wooden sash now used on some windows of the building. These sashes are part of the history of the house and are effective in preventing air infiltration around its

many windows. Other windows are protected by triple-track aluminum storm units. These, too, are effective barriers against wintertime air infiltration.

In general, since the intention of the Remick Foundation is to preserve the integrity of the Enoch Remick house down to recent times and not to restore it to some earlier period, it would be reasonable to retain both types of exterior storm windows as they have been installed and used. As noted above, changes in winter occupancy of parts of the third story may create a need to reassess the management of water vapor in the house.

While the house is presently not to be expected to be highly energy efficient, it appears to be in a healthy wintertime condition and to benefit from its avoidance of too-tight sealing. The building now operates in a manner typical of an early twentieth-century dwelling, with no excessive heat loss but also with ample opportunity for water vapor to transpire to the outside before condensing in cold areas. If fuel costs are not of major concern, this state of affairs is highly beneficial to the building.

In 1979, under RSA 155-D, the State of New Hampshire adopted many provisions of the federal Energy Policy and Conservation Act, which sought to increase energy efficiency in new or remodeled buildings that are heated partly or wholly with fossil fuels. Historic structures are exempt from the provisions of this act. As a property listed in the National Register of Historic Places, the Enoch Remick House need not conform to the provisions of the act even if extensively remodeled in the future.

Because the Remick Foundation now treats most of the contents of the Enoch Remick House as museum collections, a higher standard for environmental conditions should be applied within the building than in a private dwelling. The delicate wall murals of the house are of additional concern.

In a museum or historic house, the major objective is constant relative humidity throughout the year. To obtain constant relative humidity, a building usually must be largely sealed against the exterior environment and, if it is not fully air-conditioned, the internal air temperature must usually be warmer in the summer and colder in the winter than is consistent with full human comfort. Since the Enoch Remick House is used both as a residence and a museum house, it will be difficult to obtain even an approximation of ideal storage conditions for the collections. If the Remick Foundation wishes to seek a detailed analysis of conditions in the house, and recommendations of ways to mediate between human comfort and the needs of the collections, the trustees might consider applying for a Conservation Assessment Program (CAP) grant, available through a program administered by the Institute of Museum Services.

For further information on energy use, see the attached *Preservation Brief 3: Conserving Energy in Historic Buildings*, and *Preservation Brief 24: Heating, Ventilating and Cooling Historic Buildings*.

Structural integrity: We did not assess the structural condition of the house. We examined structural problems in the stable (discussed below), and noted that structural deficiencies in the cattle barn are being attended to by a major rehabilitation of that structure.

Drainage: Due to cold temperatures, we did not observe or analyze any of the drainage issues that reportedly appear in the springtime.

Enoch Remick House front chimney: This chimney has been used for wood stoves for many years. Until recently, the oil-fired steam boiler in the cellar was vented through a flue of this chimney, presumably the flue of a bricked-up first-floor fireplace.

As is typical of any chimney used for wood-burning appliances, the upper zones of the stack have become saturated with creosote. Above the roof, the chimney was rebuilt in the late nineteenth century with a new stack and an ornate cap of corbeled bricks. We did not have the opportunity to examine the section of the chimney above the roof in any detail.

Just below the roof, the chimney stack is built of relatively soft-burned bricks that were laid in lime-sand mortar, probably at the time of the rebuilding of the cap; a chimney of the early 1800s would normally have been constructed with clay-sand mortar, and we may assume that the lower areas of the Remick chimney retain this kind of construction. The bricks below the roof have become saturated with creosote, which has penetrated and weakened the mortar joints and has run down the face of the stack to an unknown depth within the house. Typically, this kind of creosote saturation is most extreme in attic areas and diminishes sharply in lower and warmer zones of a dwelling. We may assume that the area of greatest saturation is somewhere within and above the third story of the house.

The chimney appears to have been cleaned often enough that it has had few chimney fires. Unlike creosote-saturated chimneys that have suffered many fires, this stack shows no cracked bricks. Nevertheless, the condition of the upper chimney was of sufficient concern that the house boiler was disconnected from it and was vented through a power vent installed in a basement window.

From the standpoint of safety, the best approach to treatment of this chimney would be to record the design of the stack above the roof in detail, to dismantle the chimney down to a point within the third story, and to rebuild the stack from that point up with new, clean, hard bricks below the roof, and with the existing Victorian bricks above the roof. At the same time, as noted above under **Mechanical Systems**, a flexible stainless steel liner could be inserted at this time in the flue that has been dedicated to the boiler.

In rebuilding a historic chimney, or any early brickwork, it is important to use a mortar mix that is weaker than the bricks. Normally, this rule dictates that reconstruction be done on a soft, lime-sand (Type O) mortar, without the addition of any Portland cement.

Issues of mortar hardness are discussed in the attached *Preservation Brief 2: Repointing Mortar Joints in Historic Buildings*.

It would also be worthwhile to consider whether the simple insertion of a flexible flue liner, coupled with any necessary chimney repointing above the roof, might make the chimney in its present condition safe for use with the boiler. The *Secretary's Standards* would be best served if the chimney could be kept as it has survived but made safe for venting the oil burner without rebuilding.

Enoch Remick House cellar: We did not inspect the cellar in detail. The only obvious area that could stand attention in the cellar is the re-mortaring of the loose joints between foundation and underpinning stones on the west side of the main house, where daylight is visible. This repointing should also be done with a soft lime-sand (Type O) mortar, which is the type that would have been used originally in any mortared joints in the foundation.

Enoch Remick House roof: The roofs of the house and the stable are presently covered with sheets of galvanized pressed metal. To judge from general style and appearance, this metal covering was probably installed shortly after the turn of the twentieth century. As determined by inspection inside both buildings, these sheets were applied over wooden shingles. Each sheet is impressed with an imbricated or fish-scale pattern. We did not examine the roof closely enough to know whether the metal plates are merely galvanized or have been painted.

Although several companies manufacture pressed metal ceiling and wall coverings for interior use, it presently appears that no one makes this particular pattern of galvanized roof cladding. Thus, preservation of the roof covering will entail careful examination to evaluate its condition, followed by appropriate treatment.

As seen from the ground, the metal roof appears to be in good condition on both buildings. Although the lower edges of some sheets near the northeast corner of the house have been lifted slightly by the wind, allowing some leaks of wind-driven rain, the defect here appears to be one of attachment rather than of the metal sheets themselves. This same area appears to show slight rusting, but this may actually be surface dirt or staining.

If the sheets were galvanized when installed, and if they were installed some eighty or ninety years ago, it is likely that they have had to be repainted periodically for protection. Various roof paints, intended for tinned or galvanized iron or steel sheets, are available. If repainting of these two roofs is needed, careful preparation and the use of a high-quality metal primer and paint should preserve the sheets for many years.

The edges of the metal roofing sheets are nailed into the edges of the underlying roof shingles, sheathing boards, and/or crown mouldings. These nails have loosened in some areas, partly due to icicles on the horizontal eaves, and need to be tightened or replaced.

If something more than simple re-nailing is found to be appropriate on close inspection, loosened nails might be replaced by drive screws or by nails of larger gauge, with rubber gaskets under the nail heads to prevent leaks around their shanks.

Due to the fact that we could not inspect the roofs at close range, a full evaluation of the best approach to the conservation of the roofs will have to await an inspection from ladders, preferably by, or in the company of, an experienced roofer or painter.

The crown mouldings of the horizontal eaves of the house were functioning rainwater gutters until the present metal cladding was added over the previous wood shingle roof. These gutters retain the holes where they drained into the leaders or downspouts in several areas. On the west side of the house, two galvanized leaders have inexplicably been left attached to the house. These leaders are of a style that has been popular since the turn of the twentieth century, though they are attached to the house by hand-forged brackets that were originally intended for wooden leaders or an earlier type.

The eaves gutters were probably bypassed by the metal roofing because they developed icing problems. These problems may have been inconsequential as long as the house was heated by fireplaces or stoves, but perhaps became serious after steam heating was installed and the general temperature of the house was thereby raised.

Given the fact that the house has no insulation in the roof, it is likely that ice dams are a continuing problem during snowy winters. This problem would be increased if more heat were released into the hall or other rooms on the third story.

Thus, it seems prudent for the moment to assume that the eaves gutters were covered for a good reason, and to observe and record conditions during several winters to learn how the house reacts to heavy snows and to its usual heating regimen. If gutters should be found useful in reducing basement dampness or damage to the lower walls of the house from the splashback of roof water, suspended metal gutters would probably be more effective than attached wooden crown moulding gutters like those that are now covered.

Exterior woodwork: See the earlier general discussion.

Painting: See the earlier general discussion.

East side porch post: It seems likely that a third post once supported the northeast corner of the cantilevered second-story porch. In the absence of such a post, a temporary prop has been placed under this corner. The area where such a post would have met the girt or beam at the edge of the porch is covered by a casing board or plancia. This board should be removed carefully to see whether there is evidence of a former column here.

We noted in the attic above the porch ceiling that there appears to be a diagonal plank laid in the north wall of the porch to serve as a tension member. Thus, it is possible that this

wall was always cantilevered and supported by a diagonal member within its own membrane rather than being supported from below by a column.

Interior of the Enoch Remick House: The most sensitive features of the interior are the painted wall murals. These appear to have been coated with varnish after they had begun to chip in a few small areas. It will be necessary to have the condition of the murals evaluated by a trained conservator who can determine the nature of their coating, the nature of the original paints, and the appropriate conservation measures, if any.

One trained conservator who has shown a willingness to travel and to work on architectural painting is Nicholas Isaak, River Road, Westmoreland, New Hampshire, 03467 [Tel.: (603) 399-7009].

Stable sills: Our inspection showed that the roof loads and hayloft loads of the stable are largely transmitted by a complex and effective system of queenpost trusses to four posts in the front wall of the stable and four posts in the rear wall. Under conditions when the hayloft is filled with hay and the roof is weighted with snow or buffeted with winds, many thousands of pounds of vertical stress are transmitted down to the sills through these posts.

The front (south) sill of the building has decayed and needs replacement. Because of the amount of weight transmitted to the sill by the four posts, the sill needs to be intact to prevent the sagging and misalignment of the front wall of the building.

Sill replacement in a building with this type of frame is carried out by jacking the four posts while supporting the floor membrane from beneath. After the posts are lifted into their proper position, the old sill is removed and replaced in-kind, with new mortises cut on its upper inside edge to receive the ends of the floor joists. The new sill should duplicate the old in dimensions and design; if the old sill is in sections rather than a single continuous stick, the new one may be also. Some thought ought to be given to use of a fungicide to slow future decay of the new sill. Attached is literature on the use of borate compounds as a fungicide; borates have few toxic effects on life forms other than fungi.

We noted that the lower diagonal struts of the queenpost trusses in the roof system were added well after construction of the building, evidently to brace the timber queenposts against lateral deflection.

Where a hayloft joist above the sliding doors has cracked along a natural split or check, and has been sistered, we noted that an appropriate repair would be a replacement sister joists that is better fastened to the original by a series of spikes or bolts placed both above and below the split.

The League of New Hampshire Craftsmen, 205 North Main Street, Concord, N.H., 033301 [Tel.: (603) 224-3375] can recommend one or more craftsmen who are capable of making a weathervane that matches the original from the Remick stable.

Replacement window sashes that match the originals in the stable can be fabricated by the Walter T. Phelps Company in Brattleboro, Vermont. Some Phelps literature, including drawings of a sash that approximates the narrow-muntined stable units, is attached.

In repairing the north wall of the stable, white pine replacement shingles might be considered instead of cedar (see above, **Woodwork**).

The traditional underlayment for wooden wall shingles is rosin-sized building paper, which serves as a windbreak yet allows water vapor to pass through it to a degree. The evacuation of water vapor is especially important in a stable, where the respiration and excretions of animals creates damp conditions. The use of a more impervious underlayment, like tarred felt, for wooden shingles can cause condensation problems.

Modern synthetic substitutes for paper or felt are much used today. Sold under trade names like Typar™ or Tyvek™, these materials are said to act as windbreaks while allowing the passage and transpiration of water vapor. Some historic buildings on which these underlayments have been applied beneath clapboards have experienced severe deterioration of the clapboards, even where the latter were back-primed before application. Thus, the use of Typar™, Tyvek™, or similar products is not recommended until we have had the benefit of several decades of further experience and study.