

Wagon Hill, Master and
Management Plan 1995

Master & Management Plan
Wagon Hill Farm
Durham, New Hampshire

Prepared For
Strafford Regional Planning Commission
& the Town of Durham, New Hampshire

Prepared by

The Cavendish Partnership Inc.
Banwell, White, Arnold Hemberger & Partner Inc.
Bourne consulting Engineering

Funded By

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the town of Durham and a grant
from the office of state Planning,
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and Atmospheric Administration

August 21, 1995

ACKNOWLEDGMENTS

The following citizens and public officials participated in the development of the Master and Management Plan for the wagon Hill Farm. These individuals participated in a variety of ways including: attending meetings and workshops, preparing written input, reviewing plans and discussing their views with the Recreation Committee and consulting team by telephone or in person. Without their participation in this and previous efforts the development of a plan, with the depth and broad public consensus that this plan has, would have been impossible.

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Donna Wadsworth Theresa Walker Mary & James Walsh Anne Whittenbury
Larry R. Wood Diane Woods Barbara Yates and to the many other citizens who
participated but did wish to be included on the mailing list.

Thank you for your time and consideration!

Durham Recreation Committee
Town of Durham
Strafford Regional Planning Commission

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SECTION ONE: SUMMARY OF FINDINGS

OVERVIEW

The Wagon Hill Farm Master and Management Plan has been prepared at a fascinating point in American history. At every level of government there are discussions on reducing the size of government, making government more accountable and entrepreneurial. More and more communities are enacting impact and user fees so that the cost of governmental services is distributed equitably, proportionate to the level of use by individuals or organizations. Many communities are privatizing traditional government services. This report has been prepared in that spirit. The Recreation Committee and the consultants have investigated ways and means to fund needed improvements at Wagon Hill Farm through a variety of traditional and non-traditional sources.

The following report summarizes the findings and recommendations of the Recreation Committee and the consulting team for the Wagon Hill Farm. The planning process involved several interactive workshops involving citizens, the Recreation Committee, public officials and the consulting team. Both the land and buildings were inventoried and analyzed by the consulting team. At the first workshop, the public had an opportunity to review the inventory and analysis, and discuss what they thought would be appropriate uses for the property. Based on the comments and suggestions from the first workshop three alternative master plans were prepared. At the second workshop, citizens reviewed the three concepts and made suggestions for improvements and adjustments. A final plan was prepared based on citizen input and feedback from the Recreation Committee. The final plan was on display for public comment at the Durham Day Picnic held at Wagon Hill Farm. The final master and management plan addressed improvements to the grounds and buildings. Following the preparation of the master plan, cost estimates, preliminary organizational, budgetary and marketing plans were prepared and are contained in this report. The following narrative summarizes important findings and recommendations:

Site

The "North Forty" should be sold and funds from the sale should be used to improve the Farm. The Farm should be developed for passive recreational uses. Active recreational (playing fields) uses were investigated and found to be inappropriate because they required too much earth work to be economically and environmentally feasible. In addition, active field recreation would be in conflict with the Town's stated goals for the property. It is recommended that further human intervention on the site should be limited primarily to shoreline stabilization, seeding of areas with grass and wildflowers, improvements to the walking trails, a bridge and a lookout structure. If the Town elects to increase the use of the buildings and promote the use of the Farm, additional parking will also be required. The existing maintenance budget is inadequate and the site is beginning to show signs of overuse in environmentally sensitive areas. (See Sections 2 & 3)

Buildings

The farm house is historically significant and worthy of restoration/reconstruction for adaptive reuse. The building is in various states of deterioration and requires immediate attention. After the "house" has been improved it will be suitable for limited pedestrian traffic - visitor's center, museum, comfort station, etc. The "ell" could be renovated for interpretive displays and meeting rooms. The overall building form and finishes should be compatible with the house. The "horse barn" should be reconstructed and could be used as meeting space and public restrooms. Rental of the building for residential use should be subordinate to other building uses and if possible the tenant should have some relationship to the maintenance and development of the property. If the Town wishes to increase the size of the meeting space or create buildings to generate more income, it is recommended that the cider mill and dairy barn be reconstructed. (See Sections 2 &3)

Costs and Sources of Income

The costs for improvements vary depending on the level of maintenance, expansion and whether the construction work is contracted or completed through volunteerism and in kind services. At a minimum it is anticipated that approximately \$500,000 will be required to make repairs to the buildings and grounds. Cost estimates and annual budgets have not been adjusted for inflation. In addition, deferring maintenance will continue to increase costs. If the Town chooses to go beyond maintenance and make improvements to the grounds and buildings the cost increases significantly. Reconstruction of the cider mill and dairy barn would increase the costs by \$800,000.

A number of methods for funding the improvements have been identified. The time, complexity and ultimately the cost of the improvements are directly proportionate to the methods of raising the funds. For example, if the Town votes to increase taxes to fund the improvements they could be completed in a short period of time and would require minimal expense for fund raising, marketing, organization and would not be subject to inflation. If the Town decides to complete the work on a "pay as you go approach" the improvements would be completed over a longer period of time and would incur fund raising, marketing and organizational expenses and be subject to inflation. In addition, many of the improvements identified in the master plan have the potential for actually generating income. For example, the dairy barn has the potential of generating over \$50,000 annual income for 20 years. (See Sections 3 &5)

Organization

If the Town decides to pursue the repairs and improvements outlined in the Master and Management Plan a careful analysis of the structure and organization of the Recreation Committee will be required. If the repairs and improvements are funded through taxes the Recreation Committee may be able to complete the work without altering its present structure. If the Town decides to pursue the improvements on a "pay as you go approach" - without significantly increasing taxes, then the Recreation Committee will need to be reorganized into a more entrepreneurial entity or a separate organization charged with the development of the farm will need to be formed. The "pay as you go approach" will require skillful leadership, administrative support, an army of "well connected" volunteers and a major effort in securing

donations and grants. To fund the improvements on the "pay as you go approach" could take 25 years.

(See Section 6)

Marketing

Another aspect of the "pay as you go approach" is that it will require a sophisticated marketing approach to attract visitors to generate the revenue. There are, and will continue to be, a number of exciting recreational attractions in the seacoast area. Wagon Hill Farm will have to create a message and a program that is unique. Wagon Hill Farm will have a target audience that seeks out heritage and environmental experiences. To the extent possible, Wagon Hill Farm should enter into cross marketing agreements with other similar recreational attractions, for example, Strawberry Banke. If the Town decides to fund the improvements through tax increases it will not be required to create an extensive marketing program but may still wish to create some materials to promote use of the Farm and collect user fees. (See Section 7)

Summary

What is needed at Wagon Hill Farm is clear. The question that remains is how much and when. Creating "balance" between the natural, economic, political and social environments in which constructive change can occur is the next challenge. Doing nothing is not an option, even modest changes will require a substantial investment. The Town must decide whether it wishes to invest in the Farm in the traditional manner, through tax increases, or whether it wishes to adopt a more enterprising approach to securing the necessary funds. All that remains is the social and political will to make the decision now.



SECTION TWO: PLANNING PROCESS

2A BACKGROUND

The Wagon Hill Farm consists of 139 acres. It consists of a 99-acre parcel on the south side of Route 4 and a 40-acre parcel on the north side of Route 4. It has approximately 1100 feet of frontage on Little Bay.

The farm was purchased by the Town of Durham in 1989. The land was purchased by the Town *"to preserve its scenic vistas, provide for future municipal purposes, preserve open space, provide a healthful and attractive outdoor environment for work and recreation, and to conserve land, water, forest and wildlife resources."*

In 1995 the Strafford Regional Planning Commission and the Town of Durham received a grant from the New Hampshire Office of State Planning, New Hampshire Coastal Program to hire a consultant to prepare a master and a management plan for the process. The Strafford Regional Planning Commission issued a Request for Proposals for the work. It received four proposals from consulting firms. After interviewing three of the firms who submitted proposals it selected one of the firms, The Cavendish Partnership Inc., to perform the work. The following documents the planning process and planning and management recommendations for the Wagon Hill Farm.

2B COMMUNICATIONS STRATEGY

To insure full public participation in the planning process the consultant and the Town developed the following communications strategy. First, the consultant would carefully review previously prepared studies completed by the Town. If appropriate, incorporate the findings into the planning process. Second, the public would have an opportunity to work with the consultants in developing a plan at three planning workshops. Third, the public would have a toll free number to call to offer comments and suggestions. Fourth, the public would be encouraged to provide the consultants with written comments. And finally, the consultants would be available to present their findings at the Durham Day Picnic at Wagon Hill Farm. In addition, the consulting team would work with the Town of Durham Recreation Committee in developing the Master and Management Plan. The planning process was divided into four steps: inventory and analysis: workshop #1 to review the findings: conceptual plans; workshop # 2 to review the plans; and final plans; and the Durham Day Picnic and Council Meeting to review the final master and management plans.

WAGON HILL FARM

Durham, New Hampshire

Location Map



2C INVENTORY AND ANALYSIS

Existing Site Conditions

The 139-acre site is located three miles from downtown Durham on Route 4. The site is bisected east to west by Route 4 with 100 acres to the south and 39 acres to the north. The farm has not been used agriculturally for several years and indigenous plants have begun to reclaim the pastures north of Route 4 and to some degree around the perimeter of the southern parcel. Gently rolling fields are the dominant feature of the parcel south of Route 4. (See Location Map)

The openness of the meadows affords distant views to Little Bay to the south and Oyster River to the southwest. The high knolls create an opportunity for significant views across the 100-acre parcel. The views from the shores of the Oyster River are exceptionally good. The views of Route 4 may be considered undesirable due to the heavy volume of automobile and truck traffic. The "wagon" is the focal point on the property for motorist traveling on Route 4.

There are a number of important historic sites and structures on the property. The most prominent historic feature of the site is the Bickford-Chesley farmhouse and its surrounding foundations. The Davis graveyard and the area where the garrison house once stood are also important features. On the northern parcel are the remains of a school house close to Route 4. The history of the site could be interpreted to provide a strong focus for future improvements.

The existing trails system traverses the southern portion of the site with trails in both meadows and wooded areas. Overall the trails are in excellent condition, however, some degradation has occurred due to excessive use in sensitive areas by pedestrians and equestrians. Improved surfaces and the introduction of some structures in sensitive areas could prevent future degradation in wet and shoreline areas. If the number of visitors continues to increase, the trails will have to be surfaced with a material that will help define and maintain the walking surfaces while at the same time providing a surface suitable for physically and visually impaired visitors.

The prevailing winds come from the northwest, however, the site's proximity to the coast make it susceptible to local coastal weather patterns. The average temperatures on the site do not differ dramatically from normal inland conditions . . . average daily temp 60 degrees Fahrenheit for a high and 34.5 degrees Fahrenheit for a low. The warmest areas of the site are the fields with a southwest orientation on the 100-acre parcel. The normal annual rainfall is 42.18 inches. (See Existing Conditions Map)

Elevation and Surface Hydrology

The site has two distinct high points. The northern high point is at the most northerly portion of the 39-acre parcel along Watson Road. Water drains from this area and collects in the wetland adjacent to Route 4. The other high point is on the 100-acre parcel and is where the wagon is located. Water drains from this ridge north to the wetlands along Route 4 and south to

In the Davis Creek to the Oyster River water that collects in the wetland along Route 4

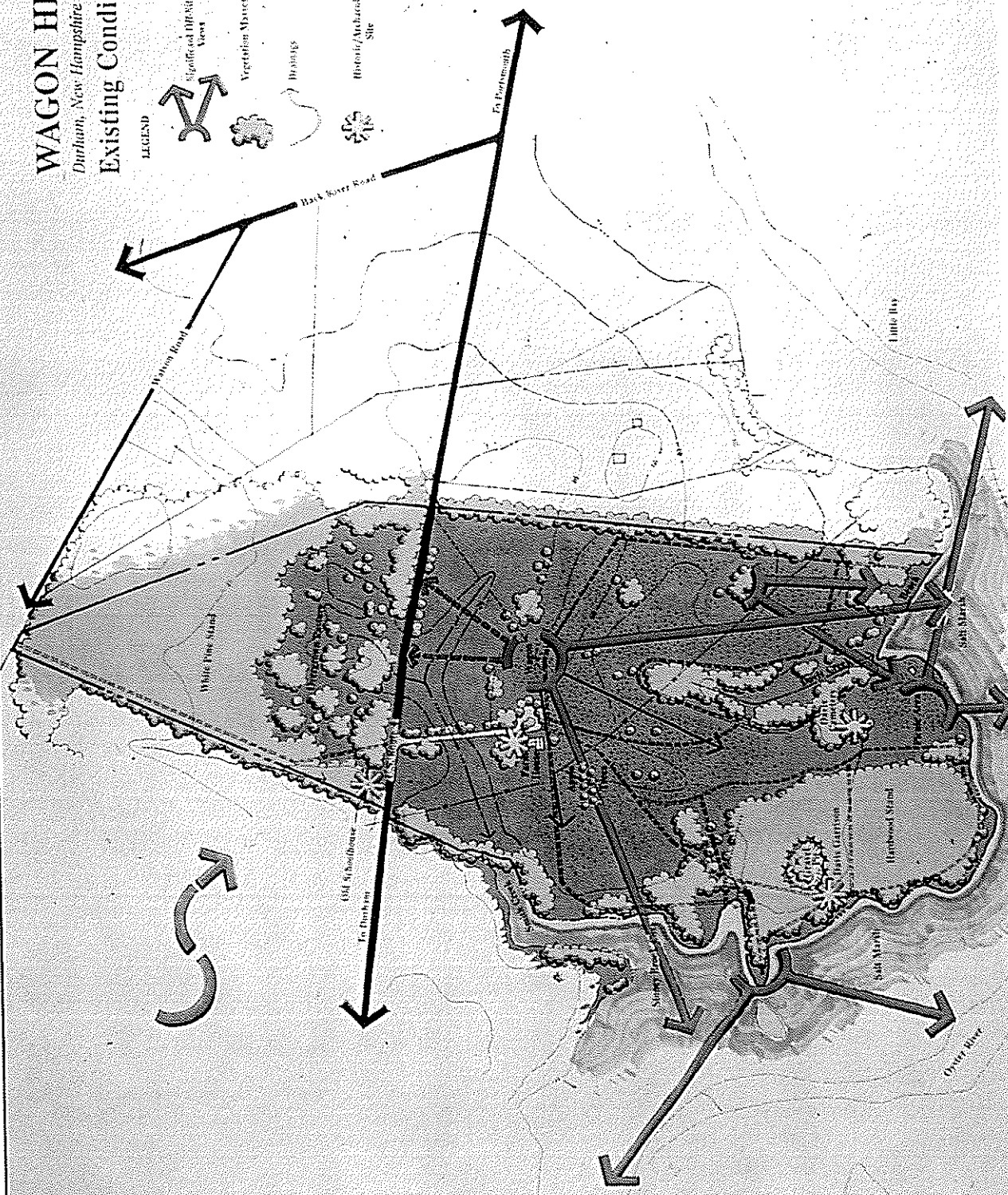
WAGON HILL FARM

Durham, New Hampshire

Existing Conditions & Viewsheds

LEGEND

- Significant On-Site View
- Significant Off-Site View
- Unobstructed Views
- Vegetation Mosaic
- Structures
- Hedges
- Rural Solar Receipt
- Trash
- Prestige Wind
- Historic/Archaeological Site



See Title Block for any property address with lot to which this plan is related and the date when this plan was recorded.

<p>THE PROFESSIONAL SEALING AND SIGNATURE OF THE ARCHITECT OR ENGINEER</p> <p>DATE: 10/15/2010</p> <p>PROJECT: WAGON HILL FARM</p> <p>PROJECT LOCATION: WAGON HILL FARM, DURHAM, NH</p> <p>PROJECT NO.: 10-001</p> <p>SCALE: AS SHOWN</p>	<p>DATE: 10/15/2010</p> <p>SCALE: AS SHOWN</p>
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eventually exits under Route 4 - westerly to Smith Creek and into the Oyster River. (See Elevation and Surface Hydrology Map)

Slope Analysis

The slope analysis data was derived from United States Geological Survey mapping and site observations. The slopes are generally gradual to moderate on the 39-acre parcel with no areas above 10% gradient. The steepest slopes, in excess of 10% are on the 100-acre parcel around the farmhouse; along the southerly and westerly shorelines; in the gravel pit; adjacent to the knoll with the wagon; and along Davis Creek. The remainder of the 100-acre parcel has gradients within the 2 to 10% range. (See Slope Analysis Map)

Soils Analysis

Soil information was derived from the Soil Survey of Strafford County, New Hampshire prepared by the United States Department of Agriculture - Soil Conservation Service and the Soils Potential Report, prepared by the Strafford County Conservation District. The following soil types have been identified on the Wagon Hill Farm site. (See Soils Analysis Map)

- Be Biddeford Silty Clay on a small portion of the 39-acre parcel
- BzB Buxton Silt Loam - 3 to 8% gradients on the 100 and 39 acre parcels
- GV Gravel Pit located on in the southwest portion of the 100-acre parcel
- HcB Hollis-Charlton - fine sandy loams on top of the knoll on the 100-acre parcel
- HcH Hollis-Charlton - on 8 to 15% gradients on the 100-acre parcel
- HfC Hollis-Gloucester - fine sandy loams, on 8 to 15% gradients on the northeast portion of the 39-acre parcel
- ScA Scantic silt loams on 0 to 3% slopes on the majority of the 39-acre parcel and in the low lands adjacent to Route 4 on the 100-acre parcel
- SfC Suffield silt loams on 8 to 15% gradients along Davis and Smith Creeks
- Ta Tidal Marsh - along the shores of the Oyster River

The Soils Potential Report identified 48 acres on the 100-acre parcel (Bzb and SfC) as having medium potential for recreational development. The remaining 92 acres were poorly drained with low to no potential for recreational development.

Vegetation

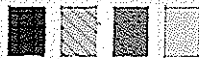
This information was derived from a report entitled, Summary of Existing Potential Biodiversity of Wagon Hill Farm, Durham, New Hampshire, by Auchly, Jones, Kimmel, Midura, 1990. The report identified forty four-different plants. The types of vegetation are indicative of the micro climatic and soil conditions of the site. The white pine stand is significant in that historically the British Navy harvested white pines for ship masts from this region. The diverse plant material also provides food for a variety of wildlife that lives on or in close proximity to the site. The site may be suitable for an arboretum or coastal botanical garden. (See Existing Vegetation Map)

WAGON HILL FARM

Durham, New Hampshire

Soils & Analysis

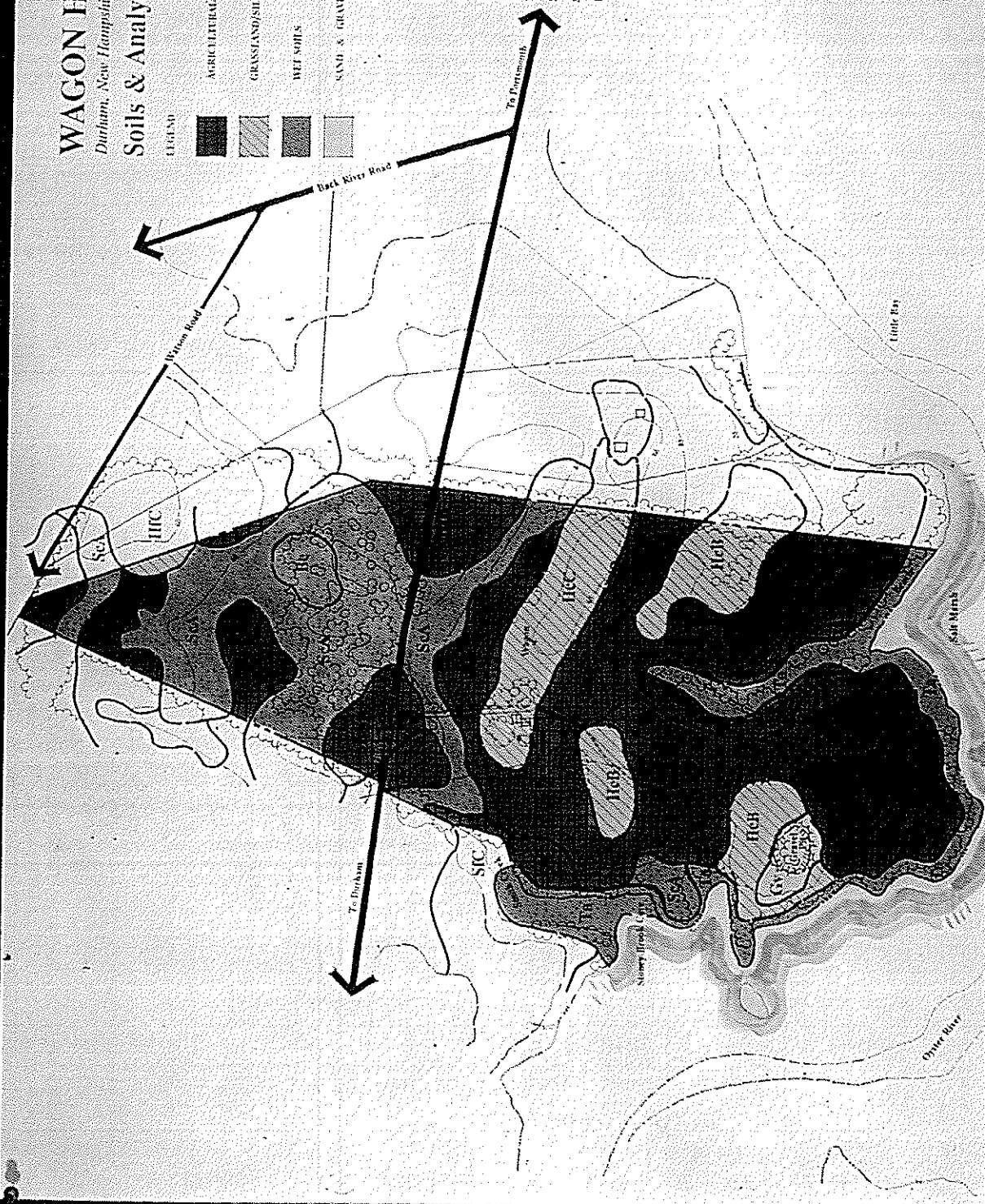
LEGEND



Soil Type	Development Potential
Agricultural Soils	MEDIUM
Grassland/Shallow Soils	VERY LOW
Wet Soils	VERY LOW
Sand & Gravel	VERY LOW

Soil Conservation Service Classification

- Bc - Bluffs and silty clay loam
- Bcb - Bluffs and silty loam
- Gr - Gravel and borrow pit
- Hbc - Heavy-Charleston fine sandy loam, 3 to 8% slopes
- Hbc - Heavy-Charleston fine sandy loam, 8 to 15% slopes
- Hbc - Heavy-Charleston fine sandy loam, 8 to 15% slopes
- Hbc - Heavy-Charleston fine sandy loam, 8 to 15% slopes
- Sa - Scenic till loam, 8 to 15% slopes
- Sic - Surficial till loam, 8 to 15% slopes
- Ta - Tidal marsh



Note: These documents are for planning purposes only. They are not intended to be used as a legal document.

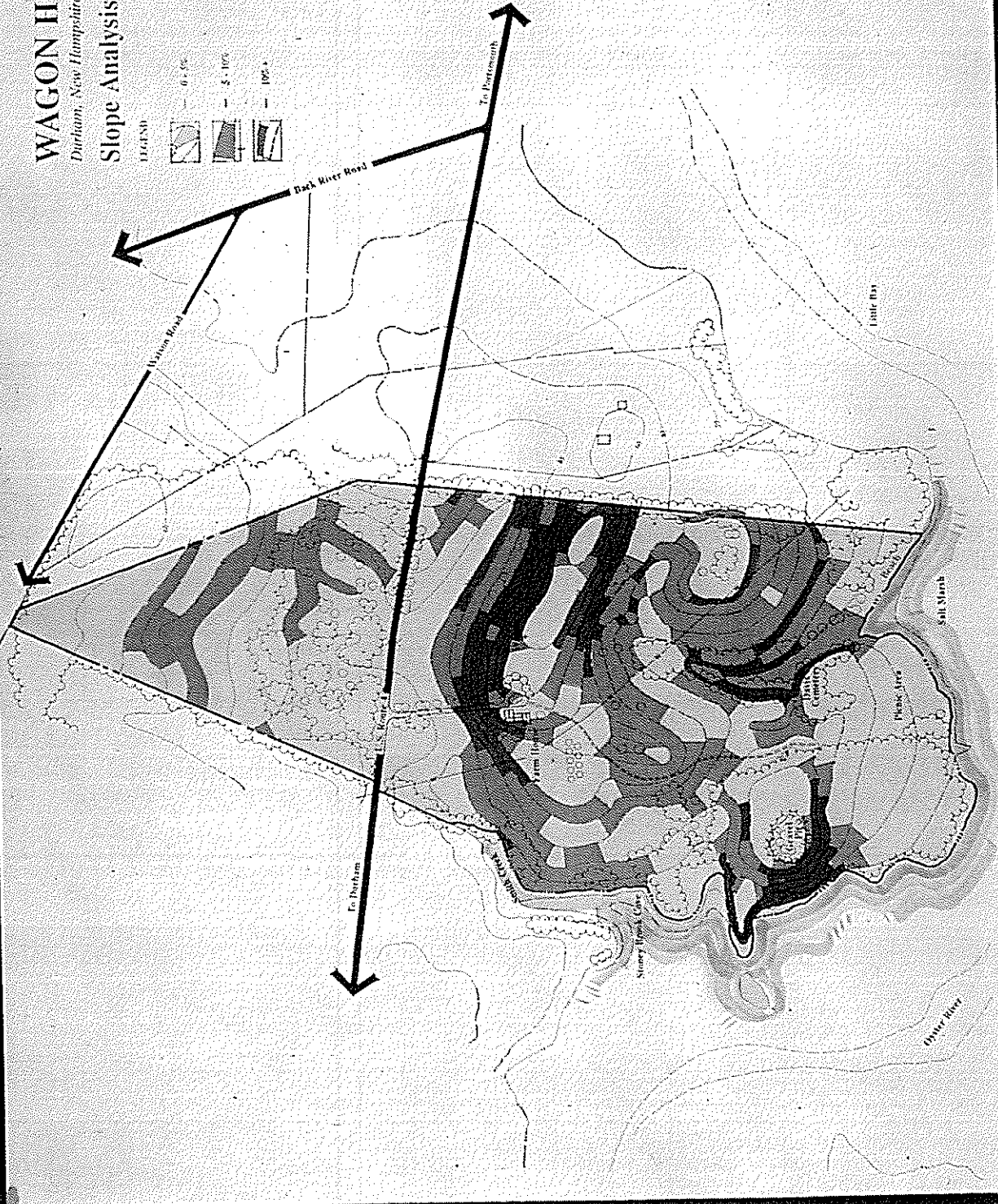
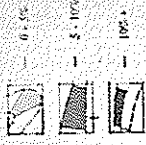
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WAGON HILL FARM

Durham, New Hampshire

Slope Analysis

LEGEND



Note: These boundaries are for planning purposes only. They are not to be used for legal purposes. Report more details from area on the back.

THE UNIVERSITY OF NEW HAMPSHIRE
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100 University Hall
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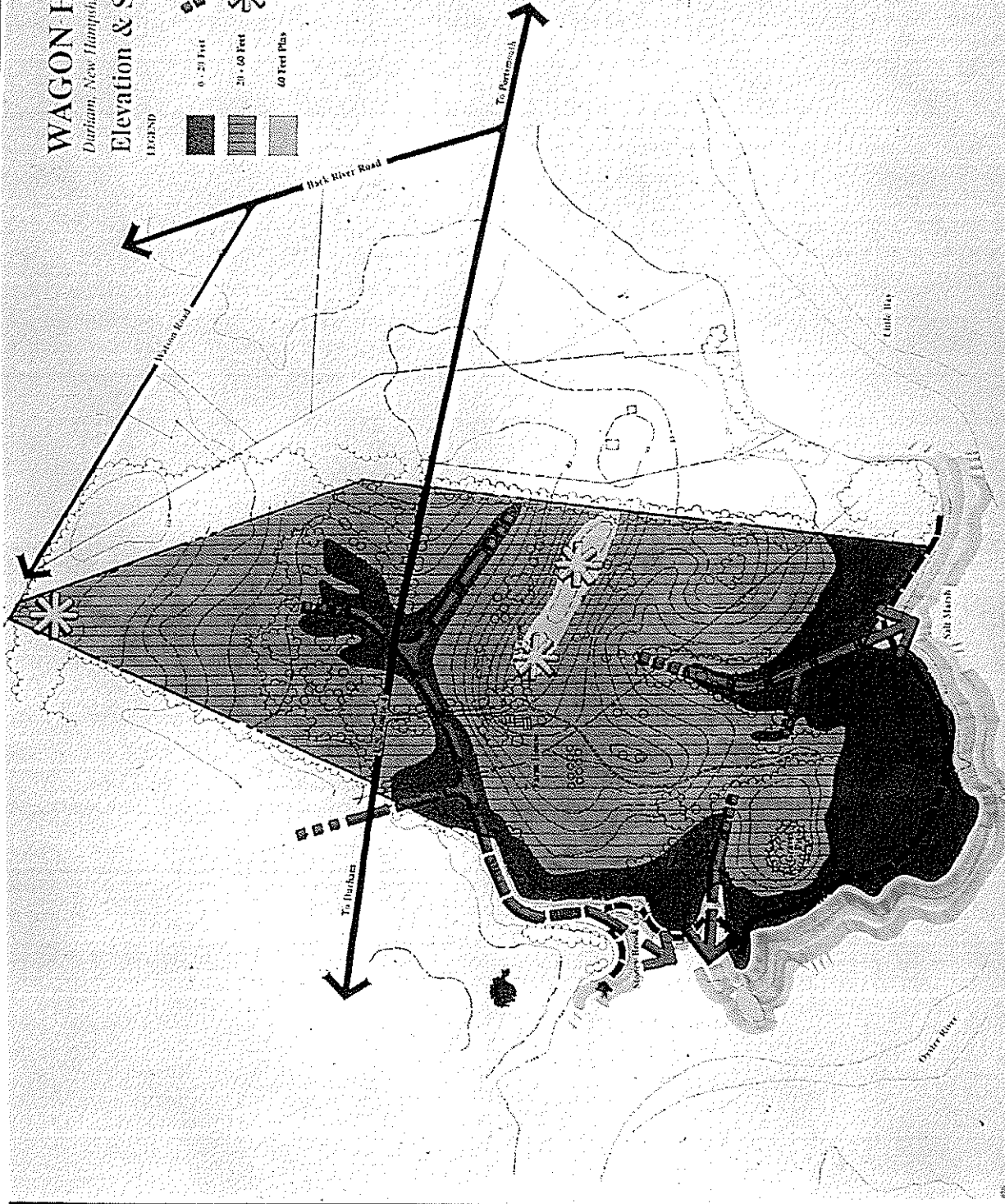
WAGON HILL FARM

Dartmouth, New Hampshire

Elevation & Surface Hydrology

LEGEND

	0 - 20 Feet		Major Drainage
	20 - 40 Feet		High Point
	40 Feet Plus		100 Year Flood Line



Note: Check elevations for proposed development. Use the sum of this information to determine the 100 Year Flood Line.

<p>DATE: 08/11/2009 PROJECT: WAGON HILL FARM DRAWN BY: J. B. BROWN CHECKED BY: J. B. BROWN SCALE: AS SHOWN</p>	
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WAGON HILL FARM

Duchess, New Hampshire

Existing Vegetation

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Note: These drawings are for general reference only and are not to be used for construction purposes without the approval of the architect.

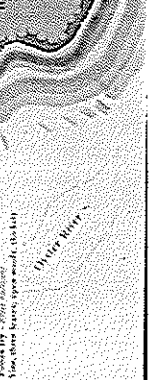
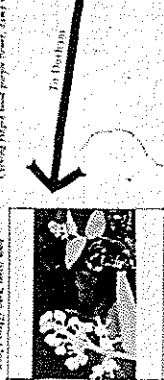
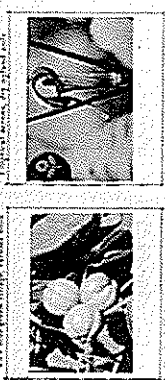
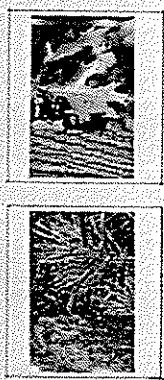
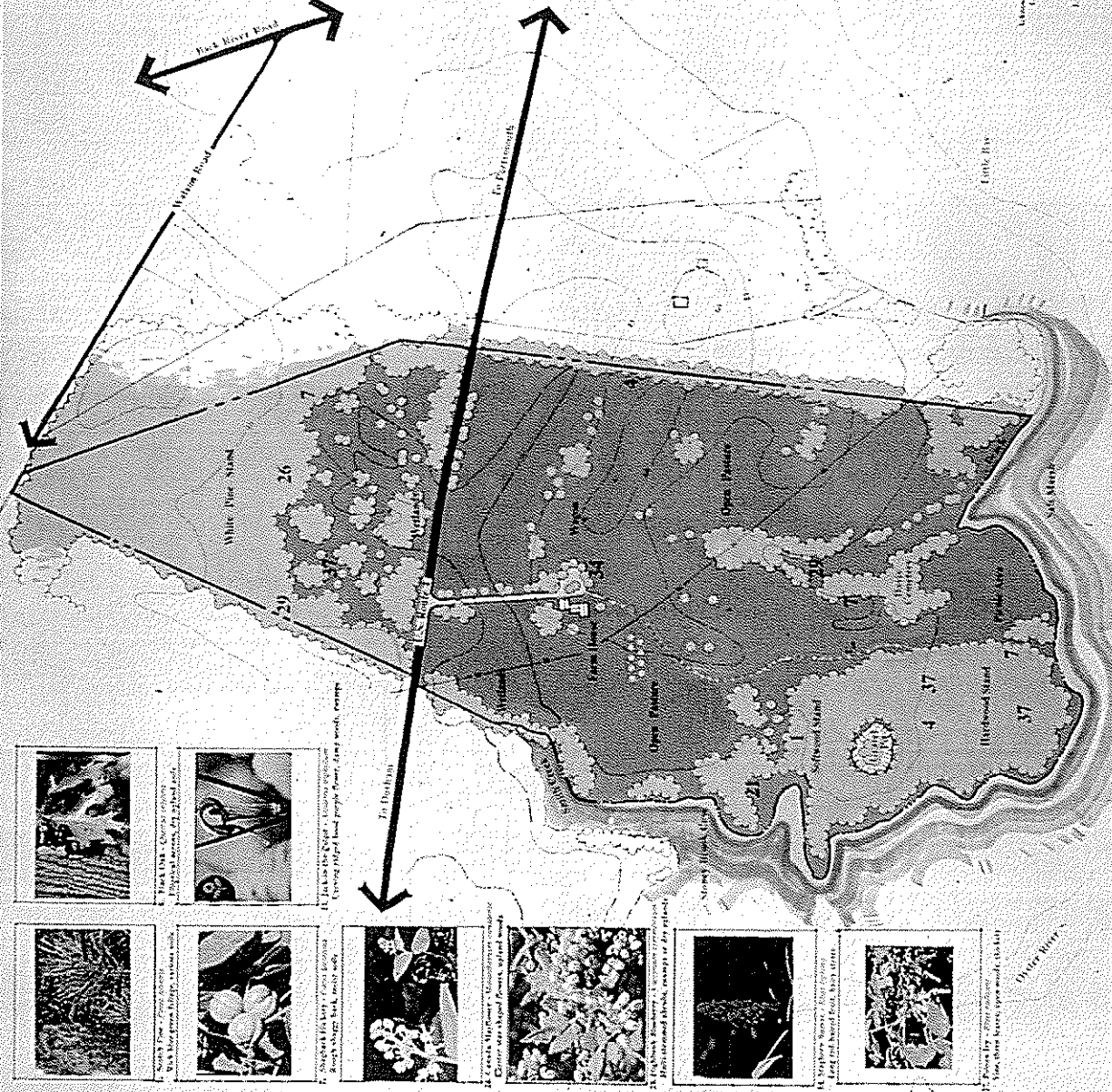
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DATE
 1977
 PROJECT NO.
 17-38989C

DATE
 June 11, 1977

SCALE
 1" = 20'



The authors assume that all information contained herein is accurate and correct. The authors assume that all information contained herein is accurate and correct. The authors assume that all information contained herein is accurate and correct. The authors assume that all information contained herein is accurate and correct. The authors assume that all information contained herein is accurate and correct.

Wildlife and Domesticated Animals

This information was also derived from the Summary of Existing and Potential Biodiversity of Wagon Hill Farm, Durham, New Hampshire report that identified birds, mammals, and coastal flora and fauna. There were fourteen bird species identified on the site and in addition another 28 species were identified as having the potential to utilize the site. Eleven mammals and two sea creatures were also identified. The site is used extensively by visitors walking and running dogs. Dogs (domesticated or otherwise) are natural predators for a variety of animal species and they are naturally perceived as a threat by mammals and birds, even if they don't physically harm them. Dogs may threaten other species by leaving scent, making noise or by disturbing habitat areas. Dogs running loose can trample plants and unattended leave scat throughout the site. It is recommended that the management plan should provide an opportunity for dog owners to continue to bring their dogs to the farm if specific areas are designated for walking dogs with leashes and for allowing dogs to run free. In addition, existing leash laws should be strictly enforced and owners should be responsible for removing scat from the farm. Preservation and enhancement of the wildlife of should be encouraged to create a balance in natural, economic and social use of the site. (See Wildlife and Their Habitats Map)

Shoreline Conditions

The existing shoreline conditions are a result of soil and ice and tidal forces and human intervention. Segments of the shoreline indicate over use by visitors which has created erosion. These unnatural conditions (pathways) are exacerbated by natural conditions including wind, tidal and ice forces. This erosion, unchecked, has and will continue to result in degradation of the shoreline and salt marshes, negative impacts on wildlife, shell fish and fish habitats. It is recommended that a shoreline stabilization program be implemented as soon as possible. The measures taken should be as minimally as possible, emulating the natural conditions of the shoreline. Rip-rapping should only be used where absolutely necessary and whenever possible plant materials or erosion control fabrics should be used. The farm site is susceptible to flooding during the 100-year flood stage and flooding should not impact most recreational uses. (See Waterfront Existing Conditions Map)

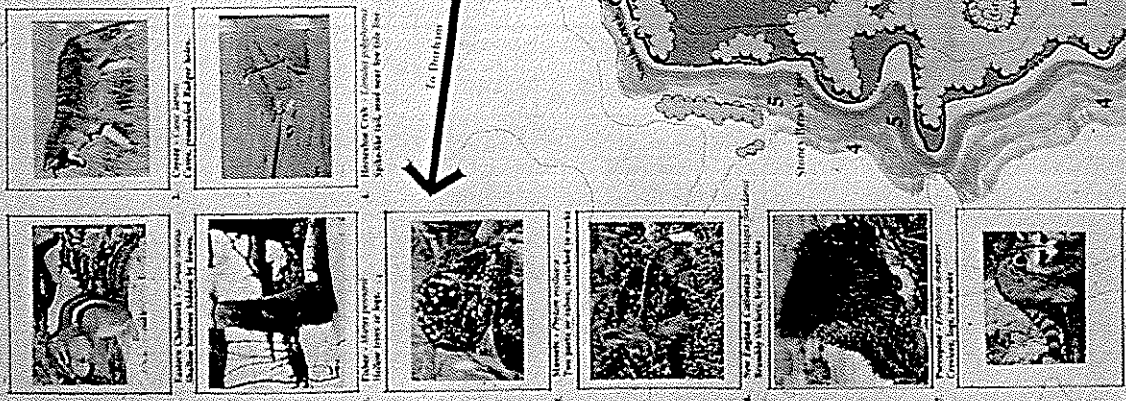
Water-based Recreation

The farm is primarily used for land-based recreation. The potential for boating is limited due to tidal conditions, water depths and a shoreline that is naturally limited for launching boats. The installation of piers and boat landings may be difficult to permit and implement due to the currents, ice and tidal conditions. Swimming is now taking place on the 100-acre parcel on a limited basis. The site is not ideal for swimming due to tidal conditions and the water currents and it is not recommended that this activity be encouraged to expand for both safety and environmental reasons. Environmentally the salt marshes are particularly sensitive to pedestrian activity which may result from the unplanned expansion of existing swimming areas. Limited access from the water by canoes and kayaks is now taking place and has a minimal impact of the farm as long as the access points are defined and controlled. (See Waterfront Existing Conditions Map)

WAGON HILL FARM

Durham, New Hampshire

Wildlife & Their Habitats



1. Black Bear - Common in the White Mountains. Feeds on berries, nuts, and insects. Hibernates in caves or hollow trees.

2. Moose - Common in the White Mountains. Feeds on leaves, twigs, and bark. Hibernates in swamps.

3. White-Tailed Deer - Common in the White Mountains. Feeds on leaves, twigs, and bark. Hibernates in swamps.

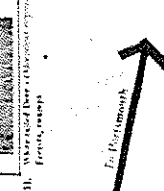
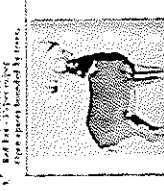
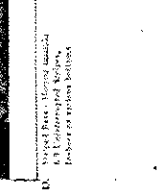
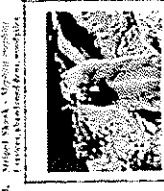
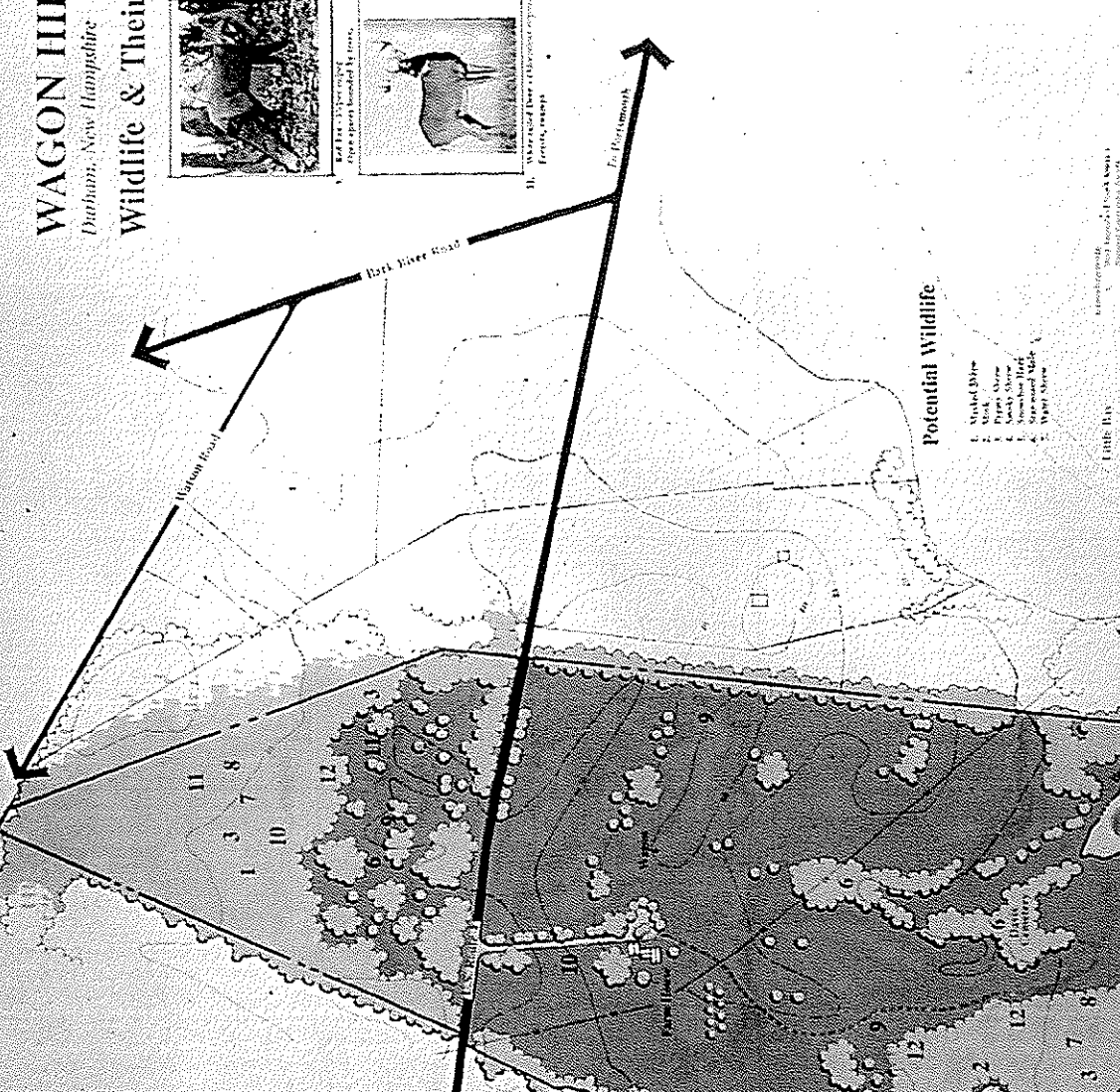
4. Cottontail Rabbit - Common in the White Mountains. Feeds on leaves, twigs, and bark. Hibernates in swamps.

5. Eastern Chipmunk - Common in the White Mountains. Feeds on nuts, seeds, and insects. Hibernates in burrows.

6. Eastern Squirrel - Common in the White Mountains. Feeds on nuts, seeds, and insects. Hibernates in burrows.

7. Fox - Common in the White Mountains. Feeds on small mammals, birds, and insects. Hibernates in burrows.

8. Raccoon - Common in the White Mountains. Feeds on nuts, seeds, and insects. Hibernates in burrows.



<p>THE WAGON HILL FARM 100 Wagon Hill Farm Durham, New Hampshire 03824</p>	<p>THE WAGON HILL FARM 100 Wagon Hill Farm Durham, New Hampshire 03824</p>	<p>THE WAGON HILL FARM 100 Wagon Hill Farm Durham, New Hampshire 03824</p>	<p>THE WAGON HILL FARM 100 Wagon Hill Farm Durham, New Hampshire 03824</p>
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Potential Wildlife

1. Black Bear
2. Moose
3. White-Tailed Deer
4. Cottontail Rabbit
5. Eastern Chipmunk
6. Eastern Squirrel
7. Fox
8. Raccoon

Scale
 1/4 Mile

Directions
 From Durham, N.H. take Rte. 101 N. to Rte. 102 E. to Wagon Hill Farm.

Map
 Prepared by the Wagon Hill Farm, Durham, N.H.

Copyright
 © 1975 Wagon Hill Farm, Durham, N.H.

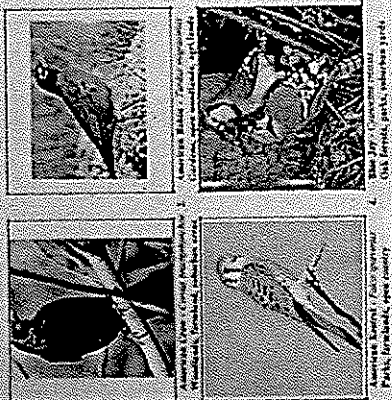
Printed in the U.S.A.

Wagon Hill Farm
 100 Wagon Hill Farm
 Durham, New Hampshire 03824

WAGON HILL FARM

Durham, New Hampshire

Birds & Their Habitats



Open Field - A field with tall grasses and scattered trees. It is a good habitat for many songbirds.

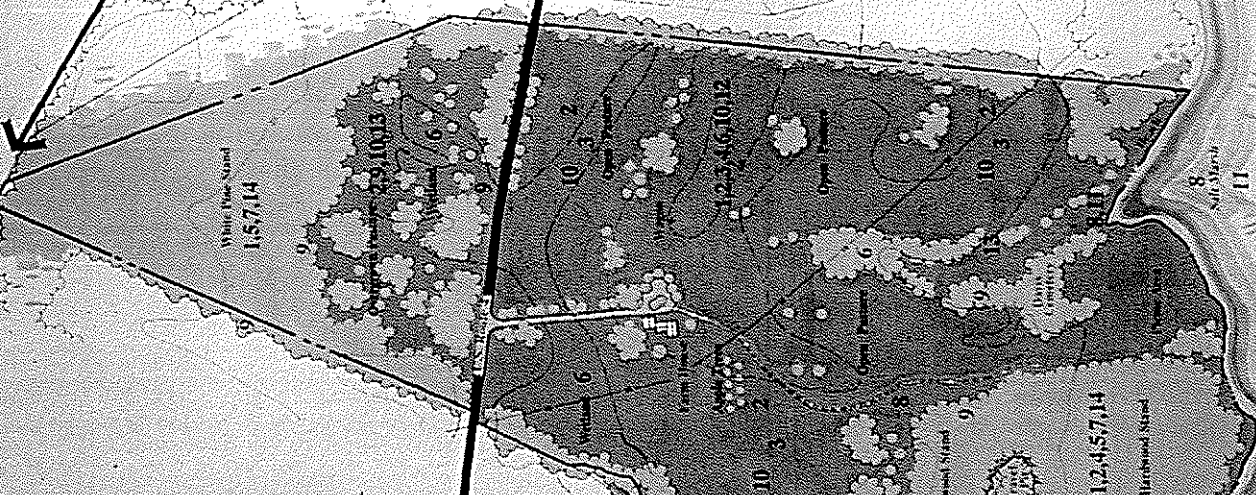
Wetland - A pond area with water, lily pads, and surrounding trees. It is a good habitat for waterfowl and other birds.

Wooded Area - A wooded area with many trees and undergrowth. It is a good habitat for many birds.

Field - A flat, open field with scattered trees. It is a good habitat for many birds.

Field - A flat, open field with scattered trees. It is a good habitat for many birds.

Field - A flat, open field with scattered trees. It is a good habitat for many birds.



Potential Birds

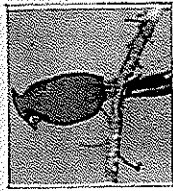
- Northern Section**
1. Canada Warbler
 2. Cowbird
 3. House Wren
 4. Eastern Towhee
 5. Field Sparrow
 6. Starling
 7. Chipping Sparrow
 8. Starling
 9. Starling
 10. Starling
 11. Starling
 12. Starling
 13. Starling
 14. Starling
- Southern Section**
1. Cowbird
 2. Cowbird
 3. Cowbird
 4. Cowbird
 5. Cowbird
 6. Cowbird
 7. Cowbird
 8. Cowbird
 9. Cowbird
 10. Cowbird
 11. Cowbird
 12. Cowbird
 13. Cowbird
 14. Cowbird

The habitats shown on this map are based on a survey of the area by the author in 1974. The number of birds seen in each habitat is given in parentheses. The number of birds seen in each habitat is given in parentheses. The number of birds seen in each habitat is given in parentheses.



1. Cowbird - A small, brown bird with a white breast. It is often found in open fields.

2. Cowbird - A small, brown bird with a white breast. It is often found in open fields.



3. Cowbird - A small, brown bird with a white breast. It is often found in open fields.

4. Cowbird - A small, brown bird with a white breast. It is often found in open fields.



5. Cowbird - A small, brown bird with a white breast. It is often found in open fields.

6. Cowbird - A small, brown bird with a white breast. It is often found in open fields.

Wagon Hill Farm
Durham, New Hampshire

Birds & Their Habitats

Map

Scale

North Arrow

Legend

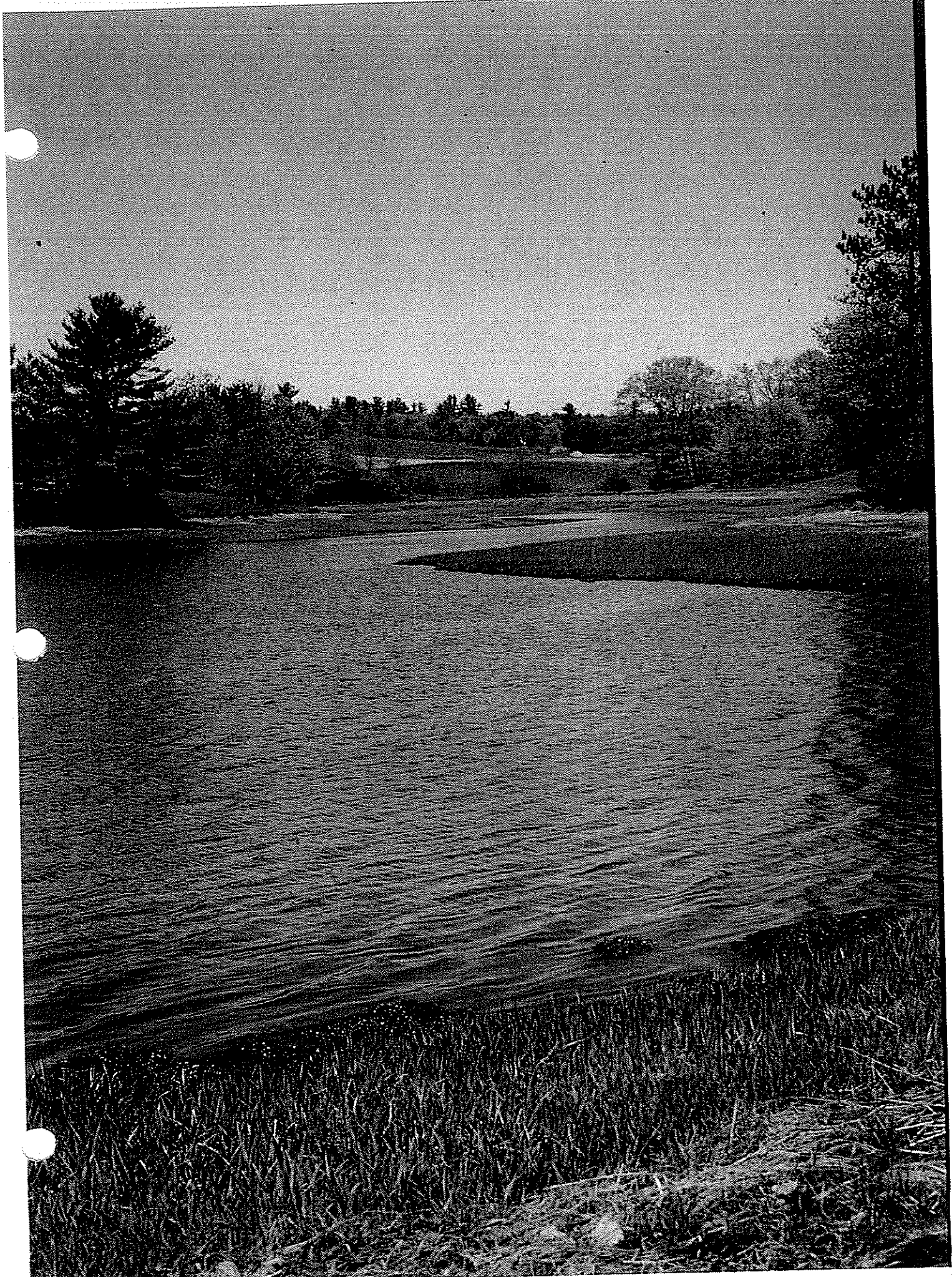
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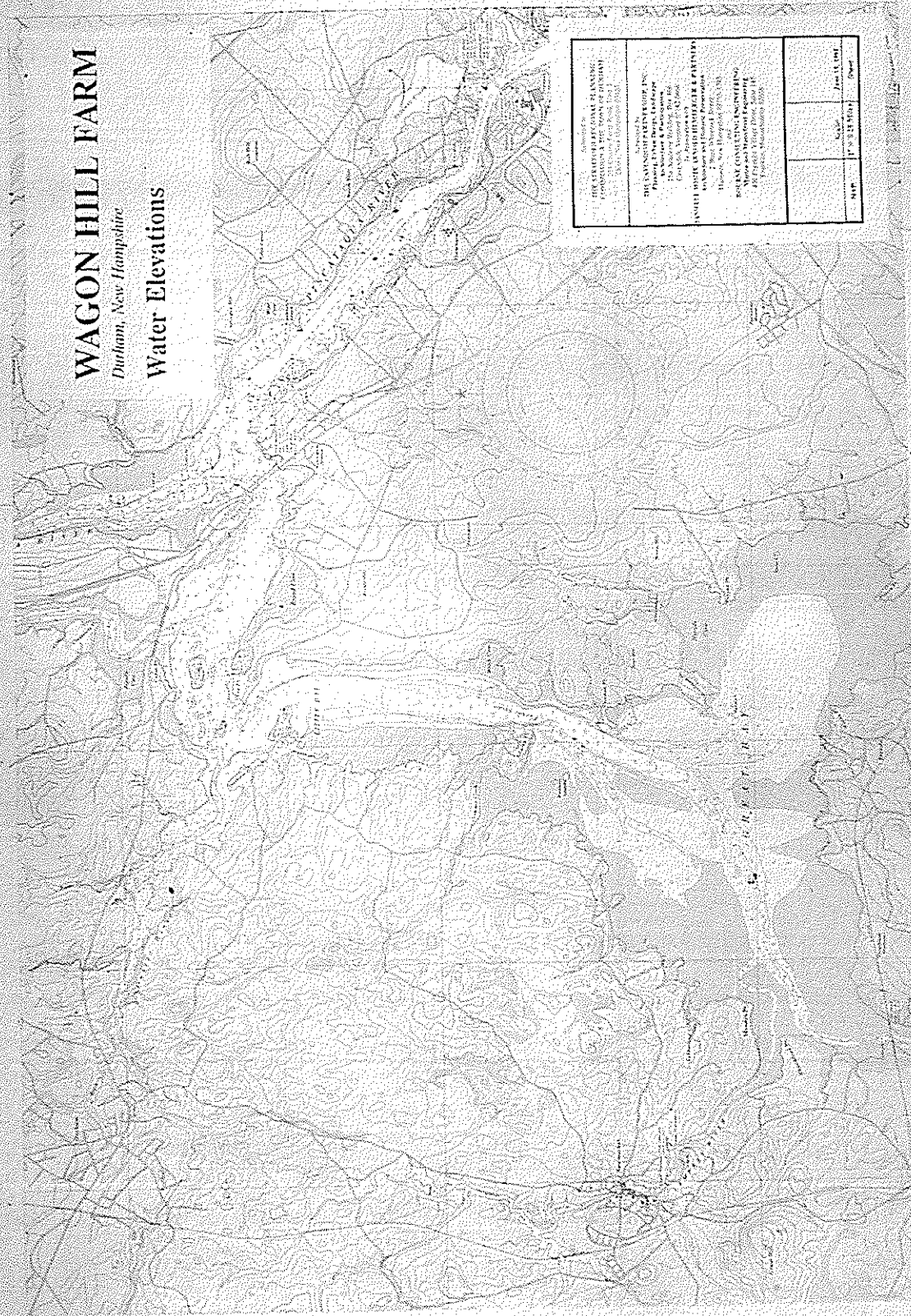
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100. Cowbird



WAGON HILL FARM

Durham, New Hampshire

Water Elevations

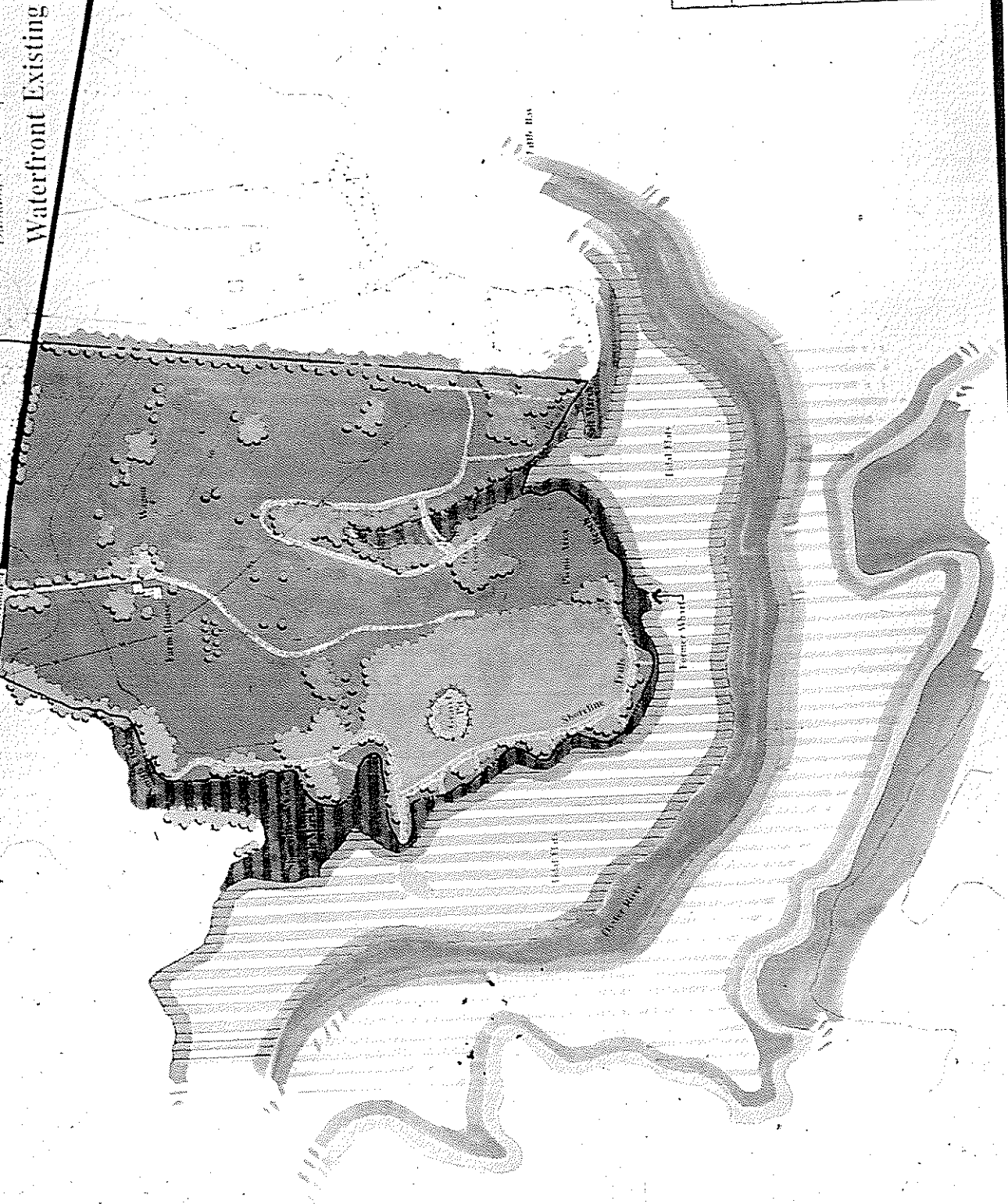
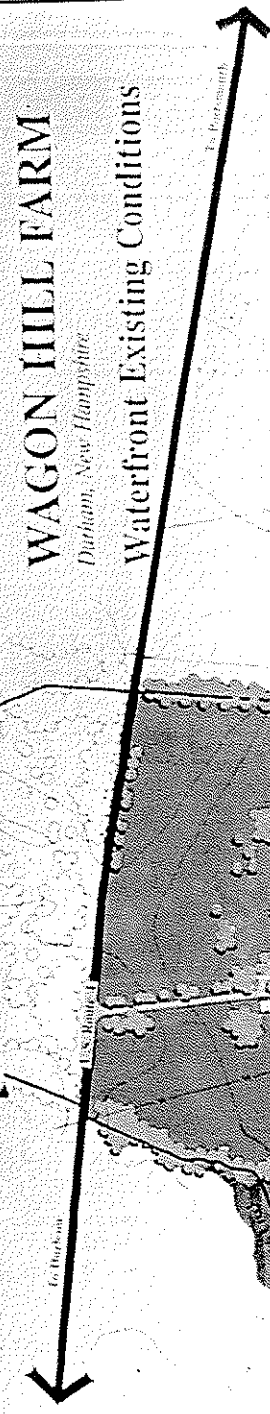


<p>Approved by: THE STATE ENGINEERING BOARD 100 State Street, Room 1000 Concord, New Hampshire 03301</p>	
<p>Submitted by: THE SAVINCHUK ENGINEERING INC. 100 State Street, Room 1000 Concord, New Hampshire 03301 Civil & Mechanical Engineers</p>	
<p>Project: WAGON HILL FARM WATER ELEVATIONS</p>	
<p>Location: Wagon Hill Farm, Durham, New Hampshire</p>	
<p>Date: June 11, 1987</p>	
<p>Scale: 1" = 200 Feet</p>	<p>Sheet: 1 of 1</p>

WAGON HILL FARM

Dudham, New Hampshire

Waterfront Existing Conditions



THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL AFFAIRS
 MAP AND SURVEYING DIVISION
 125 STATE STREET, ROOM 100
 BOSTON, MASSACHUSETTS 02130

DATE: 08/14/74
 SCALE: 1" = 100'

PROJECT: WAGON HILL FARM
 DUDHAM, NEW HAMPSHIRE
 SHEET: WAGON HILL FARM, 1 OF 1

APPROVED FOR THE STATE OF MASSACHUSETTS
 BY: [Signature]
 TITLE: [Title]

Historical/Architectural Analysis

The predominant visual characteristic of the site is open space. The architectural character of Wagon Hill Farm is a direct reflection of the history of the site. The barns, warehouse, and the original Davis home are now gone. Perhaps with some careful interpretation, their stories can be uncovered. The remaining house and carriage barn (circa 1806) still have a great deal to tell us. For this analysis, we have relied on Wagon Hill Farm - Past, Present and Future, an unpublished master's degree thesis by Kari Ann Federer, conversations with James Garvin of the New Hampshire Division of Historic Preservation: the Architectural Heritage of Piscataqua; and several visits to the property for measurement and observation.

In the words of Proposed Uses of Wagon Hill Farm, the report of the Wagon Hill Farm Committee,

"The tract of land now called Wagon Hill Farm was operated as a farm for three centuries. For most of that period, the farming activities at Wagon Hill Farm were typical of rural Durham. . ."

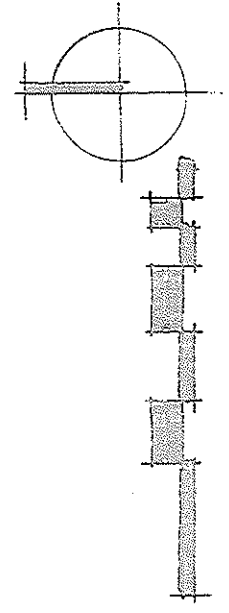
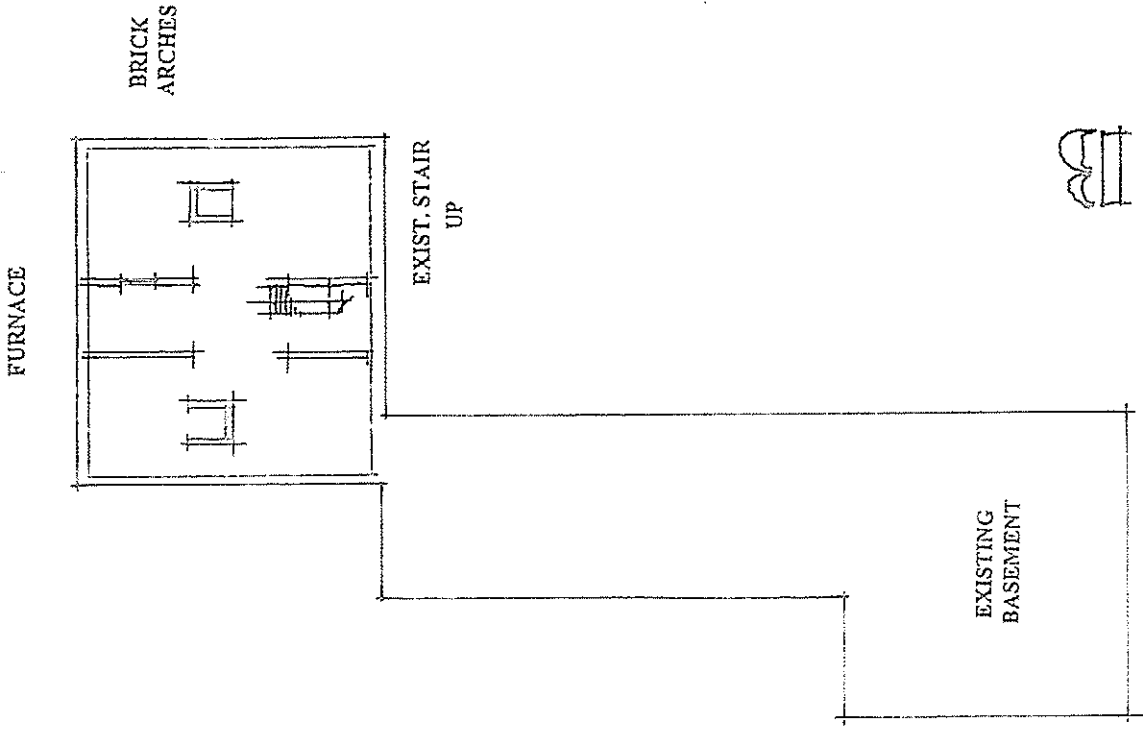
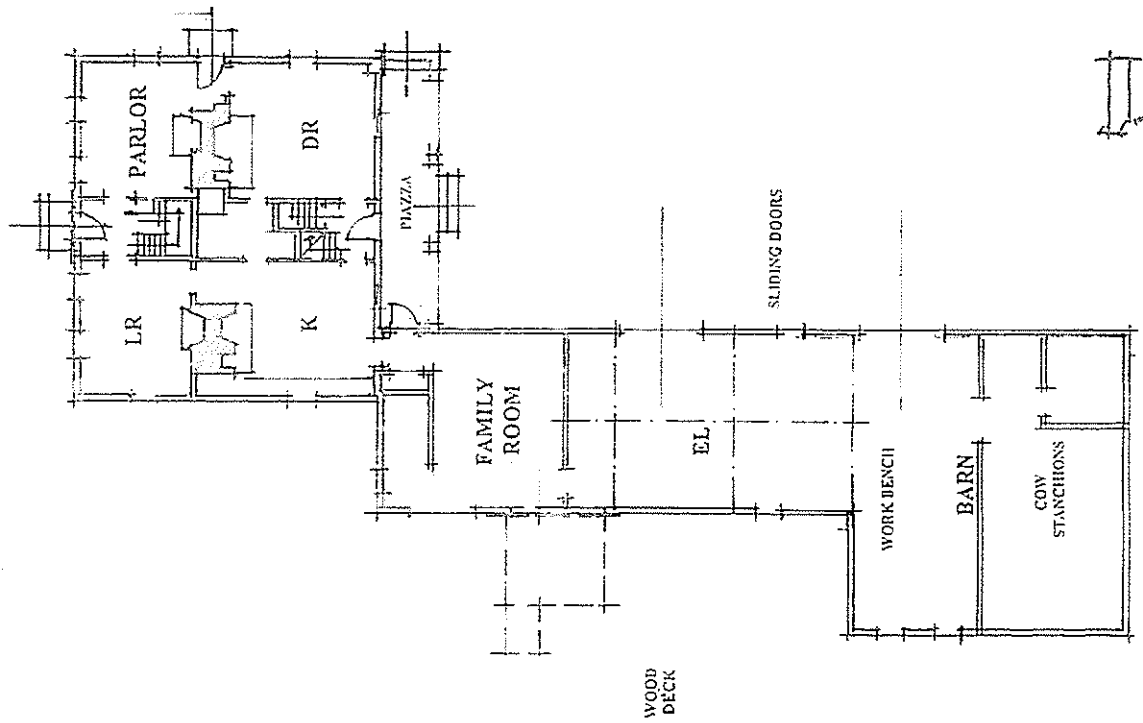
This *typical* character is important in defining the critical elements of the farm as a whole and specifically the architecture. Although it does not represent an outstanding example or "high water mark," many specifics of the Bickford-Chesley House provide good examples of *typical* rural development patterns of the 19th century New Hampshire and, as such, are invaluable.

The Bickford-Chesley house is an intact architectural resource, circa 1806 vernaculars (High Style) Federal House for a tenant farmer (with some interesting modifications, perhaps to provide space for an itinerant owner). The house provides a focus and an identity for the property as a whole. The house has ongoing maintenance issues of serious consequence (roofing, moisture, windows, etc.) which require significant money. The house is quite "tender" relative to its potential adaptive reuse as a public building. It is fair to say that extensive public use would create a major conservation issue. In addition, the present lease agreement as a private dwelling in the public preserve may create some conflicts in the long term use of the building.

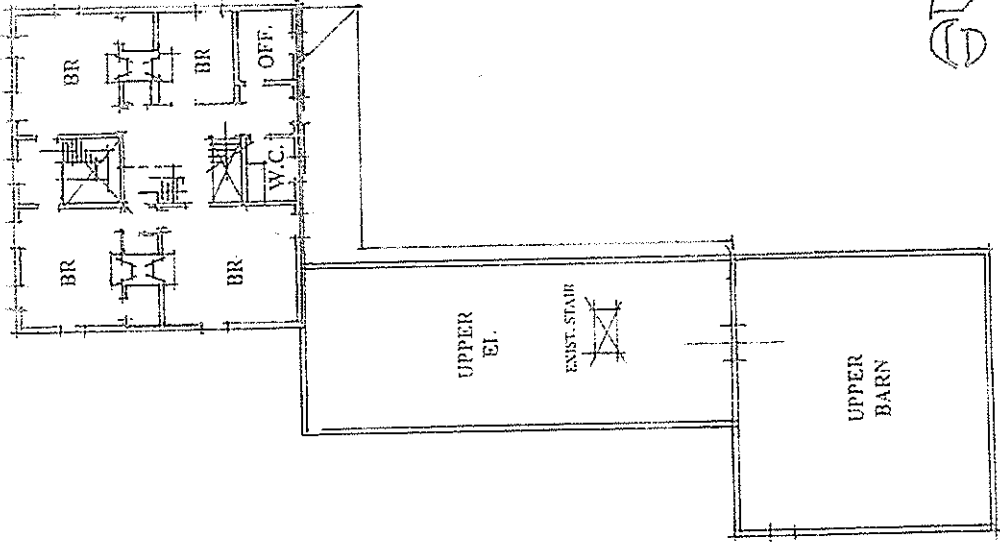
The barn "ell" is in a deteriorated condition. It is probably hazardous to the public. Previously prepared reports have recommended reconstruction. Other building sites in the form of ruins are readily obvious to the visitor who passes through the farm yard parking lot. The development of an access road and parking is a potential threat to the foundations of the former cider mill, dairy barn and lean-to. Reconstruction of the stone wharf on the Oyster River represents an outstanding opportunity for adaptive re-use.

The location of the Davis Homestead is to be determined. It seems likely that the foundation was lost during gravel excavations. Determining its location would aid in the interpretation of the earliest colonial uses of the site. Other pre-colonial uses are probable but unknown. The undisturbed areas of the site adjacent to the river represent a significant potential for archaeological resources.

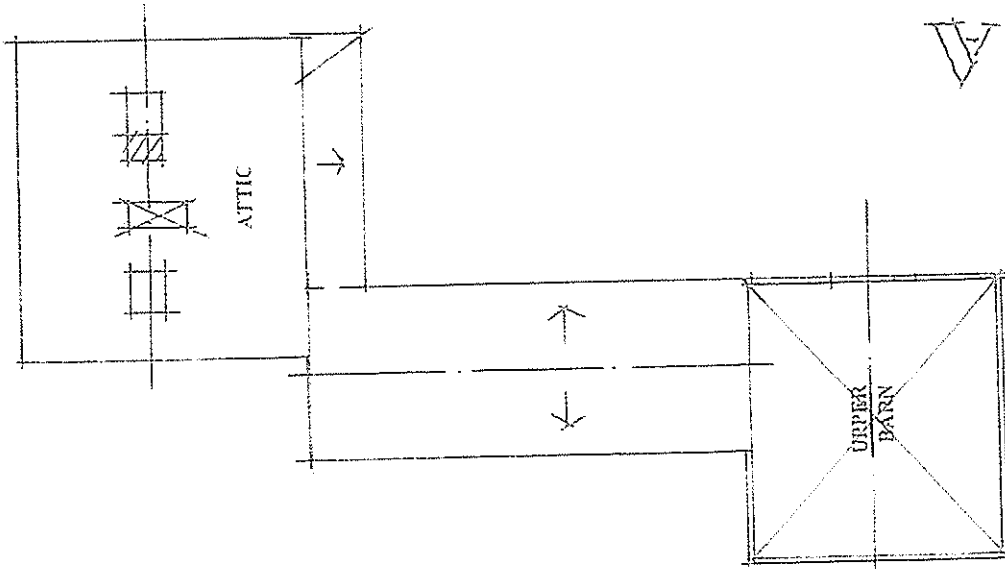
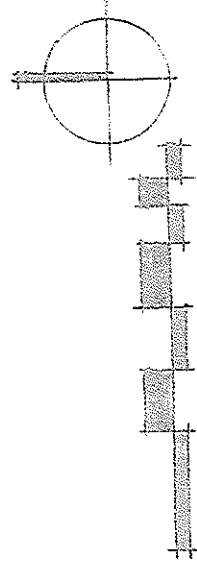




BICKFORD-CHESLEY HOUSE
EXISTING CONDITIONS



67



RICKFORD-CHESELEY HOUSE
EXISTING CONDITIONS

The settlement pattern of the Wagon Hill Farm, starting as it did with the utilization of the river for principal commercial transportation, shifting over the (19th Century focus) to the turnpike road, offers a clear graphic presentation of growth and development of the seacoast economy. The intact thread of the historic connection from the river to the turnpike road turns to a valuable example and a compelling argument for public ownership of the Wagon Hill Farm. Opportunities available for public access to the river are extremely limited in 1995.

Summary of Architectural Development on the Property

The site known as Wagon Hill Farm has a long and complex history. Some principal moments in this continuum are:

Pre-colonial human uses of the site are probable, but unknown. The undisturbed areas of the site in context of the river represent a significant potential archaeological resource.

The settlement pattern of the Wagon Hill Farm, starting as it did with the utilization of the river for principal commercial transportation, shifting over the (19th C.) focus on the Turnpike Road, offers a clear and graphic presentation of growth and development of the seacoast economy.

The Farm was originally settled by John Davis and Jane Peasley with their many children (1655). The location of the Davis Homestead is to be determined. The foundation was lost during gravel excavation (circa 1930s). Determining its location would aid in the interpretation of the earliest colonial uses of the site.

As part of the original Davis occupation of the site, a rubble stone wharf structure was constructed on the river bank adjacent to the present day picnic grounds. There are accounts of a warehouse adjacent to or on the wharf. There was no significant overland travel available until the turn of the century.

In 1798, Davis heirs sold the Farm to Captain John Bickford, who redeveloped the property significantly by constructing a new house, circa 1806. The new house was sited as we know it today, at the top of a knoll facing the also new Turnpike Road. This was one of seven farms owned by Captain Bickford. All operated by tenant farmers.

This house was a two-story, center hall, five-bay, Federal style, framed building with a hipped roof. There are some interesting plan variants from the "normal" (separate stairs at the front and back of the house allow areas of the house on both floors to be independent apartments). Perhaps this was designed to accommodate Captain Bickford on his travels to visit his various holdings in Gilford, New Holderness, and Durham. See attached Field Visit Report and floor plans for additional detail (Appendix). Other structures, barns, etc. certainly occupied the site.

Captain Bickford was killed on a voyage to S. Africa in 1814. The Farm was run by his wife until 1829, when shares were transferred to Samuel Chesley. It remained in the hands of the Chesley family for the next 130 years.

The hipped roof was replaced by a 4-bay gable roof (12:12), perhaps reused from an earlier structure. At that time, the corner trim and roof edge, some window trim and interior modifications were done. See Field Visit Report for details (Appendix).

The house was subsequently enhanced by the addition of the "piazza" on the south side of the building (mid-1800s). The "ell" was built some time later (1870s?), and a carriage barn at the turn of the century.

There are accounts, photographic records, and foundations remaining from a "cider house" and "English barn" adjacent to the house. As in many such typical New England farmsteads, the texture and enclosure of the barn yard made a memorable place, particularly in contrast with the open fields and water views

Analysis Zones

Based on the preceding Analysis Zones Map was created by combining the site inventory and analysis findings into a single map. The map is essentially a series of "overlays" of previous mapping. The site was divided into three zones. Each of the zones was rated in terms of its potential for "recreational development." Zone 1 - has limited development constraints - it has dry soils, gradual slopes, no view shed interference and low impact on the environment. Zone 2 - has moderate recreational development potential - it has dry soils, some steep slopes, there are potentials for interrupting view sheds and the wooded areas could be potentially impacted. Zone 3 - has limited recreational development potential - it has wet soils, steep slopes and potential environmental impacts. (See Analysis Zones Map)

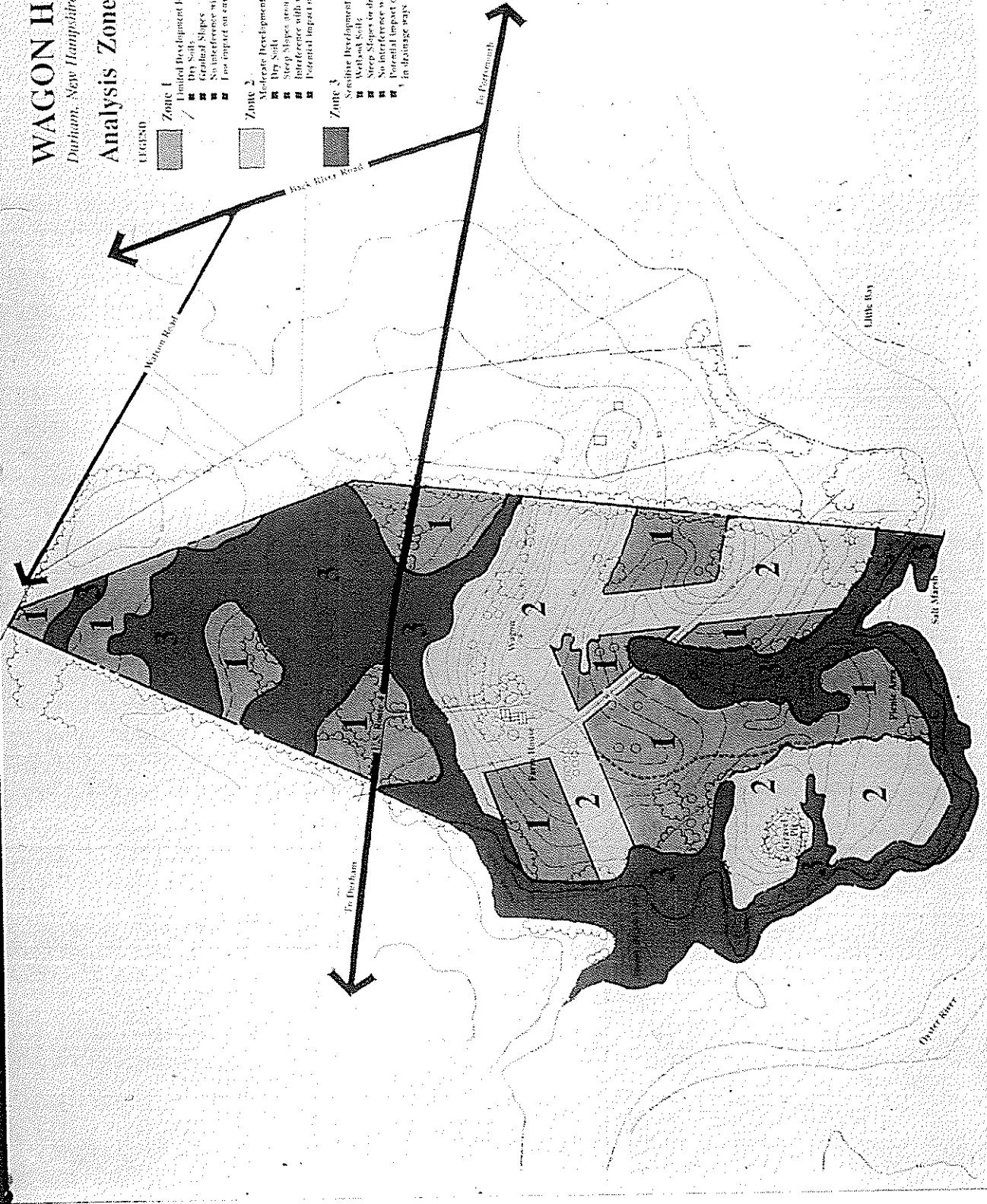
WAGON HILL FARM

Durham, New Hampshire

Analysis Zones

LEGEND

- Zone 1**
 - ▒ Limited Development Restrictions
 - ▒ Dry Soils
 - ▒ Gradual Slopes
 - ▒ No interference with views
 - ▒ Low impact on environment
- Zone 2**
 - ▒ Moderate Development Restrictions
 - ▒ Dry Soils
 - ▒ Steep Slopes around farm house and wagon hill
 - ▒ Interference with views on knolls
 - ▒ Potential impact on environment in wooded areas
- Zone 3**
 - ▒ Severe Development Restrictions
 - ▒ Wetland Soils
 - ▒ Steep Slopes on drainage ways
 - ▒ No interference with views
 - ▒ Potential impact on environment on the shore and in drainage ways



Note: These documents are for planning purposes only. They do not constitute a final engineering or architectural drawing and should not be used for construction without the approval of the State.

PROJECT INFORMATION PROJECT NO. 2008-001 PROJECT NAME: WAGON HILL FARM PROJECT LOCATION: DURHAM, NEW HAMPSHIRE PROJECT DATE: 10/15/08	
DRAWN BY: [Name] CHECKED BY: [Name] DATE: 10/15/08	SCALE: AS SHOWN SHEET NO. 1 OF 1
PROJECT DESCRIPTION PRELIMINARY SITE PLAN FOR ZONING AND DEVELOPMENT RESTRICTIONS.	

2D Workshop # 1 - Review Findings and Make Suggestions

To solicit public input regarding the planning and management of the farm a planning workshop was held on June 15, 1995. Citizens from throughout the region were invited to attend the workshop. The workshop was divided into two sessions. During the first session Recreation Committee members and the consulting team presented results from the recreational survey conducted by the Recreation Committee and Inventory and Analysis findings. In the second session the participants were divided into four smaller groups. Each of the groups listed what they like about the farm and discussed how they would like to see it developed from a recreational standpoint. The following is a list of important issues the participants would like to see addressed and incorporated into future design concepts.

Planning & Design Suggestions

1. Preserve/maintain W.H.F. like it is. (**)
 - Open Vistas (**)
 - No changes in topography
2. Minimize the cost of any development.
3. Create active recreation fields.
 - Soccer
 - Cross country races.
4. Preserve for passive recreation & history.(***)
5. Educational or Interpretive Trails and signage.(***)
6. Be aware of traffic safety at Route 4.
7. Balance the costs and revenues.
8. Develop a variety of uses.(***)
9. Access to the river and from the river.
10. Multi-seasonal uses.
11. Farm a portion of the property.
12. Develop a partnership with U.N.H. (**)
13. Sell the north forty.
14. Restore and preserve the farm house.
 - Uses for the farm house.
 - Cafe
 - Historic town storage.
 - Weddings
 - Artists retreat
 - Bed and Breakfast
 - Commercial area
 - Conference center
 - Math and Science education center
15. Run a yearly community camp out.
 - Bonfires and discussions
16. Connect a bike path to the site off of Route 4.
17. Mini Tanglewood Amphitheater
 - Brown Center for Outdoor Living
 - Noise a concern

- Close proximity to Great Woods at Pease a concern
- 18. Limit development on property.
- 19. Create an arboretum, add trees and plants with labels.
- 20. Propose mock colonial militia battles.
- 21. No dock facilities.
- 22. Restore trail links off Watson Road.
 - Crossing Route 4 a problem.
- 23. Frisbee Golf Course
- 24. Shape land to maximize sledding opportunities.
- 25. Have 4th of July Fireworks here.
- 26. Hold Special Events but limit the number throughout the year. (***)
 - Like the Viking ship that's coming from Nova Scotia.
 - Ducker's Day
- 27. Corporate retreat
- 28. Get the youth and schools of the town involved in the planning. (**)
- 29. Playground for small children.
- 30. Expand the uses, there's nothing for small children in the summer.
- 31. Community Supported Agriculture (C.S.A.)
- 32. Incorporate active uses without sacrificing aesthetics.
- 33. Need a boat dock
- 34. Need more parking (**)
- 35. Parking on the north forty.
 - Crossing Route 4 a problem
- 36. Develop a farm theme involve the 4-H, active farming is limited in Durham.
- 37. Farm museum like the one in Farmington.
- 38. Have C.S.A. donate to food pantries.
- 39. Demonstrate farming techniques of the 1850's, etc.
- 40. Develop compatible activities:
 - Drawing
- 41. Site is under utilized, not popular enough.
- 42. Allow dogs but enforce leash law and institute a pooper scooper law. (**)
- 43. No dogs
- 44. Have specific guided horse trails.
- 45. Swap north 40 for more land along the water.
- 46. Develop north 40 for active recreation.
- 47. Popular level science niche.
- 48. Environmental school.

Suggestions for Management of the Property

1. Should the site be open to nonresident, and if so, do we charge them. (***)
2. Concerns about overuse and/or trashing the place.
3. Restore the house using professional volunteers.
4. Seek groups to restore room by room and erect plaques of recognition.
5. Make this a community building effort, e.g., barn raising
6. Landscape maintenance by volunteers.

2E Conceptual Plans

Following the workshop the consulting team reviewed previously prepared plans and the inventory and analysis data and prepared the following three conceptual plans. (See Maps)

Concept A: Conservation / Preservation

This concept represents the improvements needed at the farm to **maintain** it as a public park.

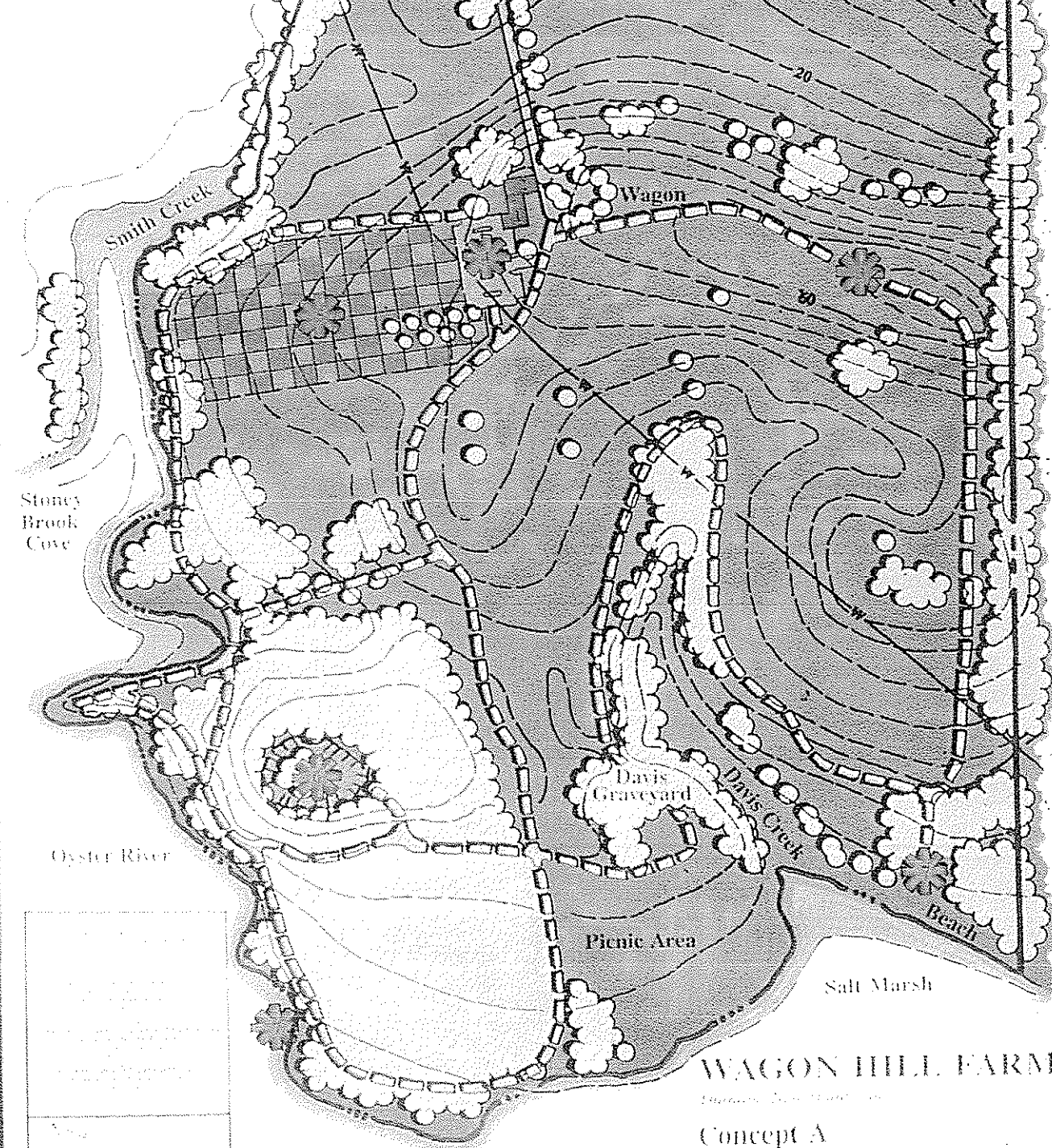
1. The reconstruction of the horse barn is necessary if these facilities are to withstand normal weather conditions. (Snow Loading, Wind, Rain). If the horse barn becomes a public space the present structure is not stable and would require significant reconstruction or renovation. The most cost effective solution would be to replace the barn. The replacement cost including public restrooms and undeveloped storage space above would be approximately \$250,000.
2. Farm house and "ell" repair and maintenance to bring the building up to local building codes. Approximate cost - \$120,000.
3. Resurfacing the trails is the one of the easier components to implement in this concept. Utilizing volunteer labor and donated or recycled materials this could be a low cost improvement. A certain amount of earthwork preparation may be required but the bulk of the work would be spreading mulch on the designated trail system. An interpretive signage system could be designed by a UNH student as part of a thesis.
Cost - Variable.
4. Adding parking to the site will require sensitivity. The area around the farm house is most appropriate for parking to take advantage of restroom facilities and the proximity to a museum or meeting facility. By creating the parking along the existing topography the visual and environmental impact of the parking area would be minimized. The area should be surfaced with gravel or crushed stone so that water could drain efficiently and require minimal storm water treatment. Access to the basement level of the house would make it possible to build restrooms in the horse barn. Gravel for the parking area may be able to be mined on site and with Town or donated labor there would be a minimal cost for the parking improvements. Potential cost of materials; crushed gravel \$13.00 - \$18.00 per cubic yard. Approximately 251 cubic yards needed equals \$3263.00 - \$4518.00
5. Designating five acres for agriculture has been included to keep options open for Community Supported Agriculture or similar activities. The interest in such an organization has come up several times in discussions of possible uses for the farm.
Cost - Variable.
6. An outdoor classroom/gathering space could be created in the gravel pit area. After the

7. Market property for weddings.
8. Wagon Hill Farm is too big for Parks & Recreation Committee.
 - Have a separate body with Conservation Commission, Parks & Recreation, Historical society.
9. New W.H.F. organization should take study trips to similar properties.
10. Surf the "Internet" for more information.
11. Bikes and horses are too destructive and should be barred from the property.
12. Manager, caretaker on site? (**)
13. Make management self-funding.
14. Keep public works for maintenance.
15. Lease the grounds and buildings to groups.
16. Volunteerism very important.
17. Cannot limit public access vs. private functions.
18. Financially self-supporting.
19. Minimize the bureaucracy
20. Accessible to handicap? if use federal monies.
21. Establish a dog run zone.
22. Consider all possible liabilities.
23. Have Durham Sticker for use.

Suggestions for Financing

1. C.S.A. to be fully funded by subscription - farmer on site.
 2. Self funding for operations only.
 3. Rent house/land for upkeep costs.(**)
 - Stone School would have paid
 - Problem because such uses tie up site for exclusive use.
 4. Self-funding is unrealistic look for grants, foundations(**)
 5. Non-tax funding has strings attached.
 6. Harvest timber
 7. Have a juried craft fairs
 8. Sell Raffle, Lottery tickets.
 9. Sporting events, contests,
 - 10k race
 - Boat races
 10. Trust Fund exists but there is no money in it.
 11. U.N.H. research grants
 12. Hay the fields
 13. Contact this old house to help restore the building.
 14. Sell the whole thing.
 15. Corporate sponsorship for development.
 16. User fees
 17. No user fees
 18. Invest \$ to make \$
 19. Where is the \$15,000 allocated for painting the house? (**)
 20. Additional taxes
- *** Indicates repeat suggestions group to group.

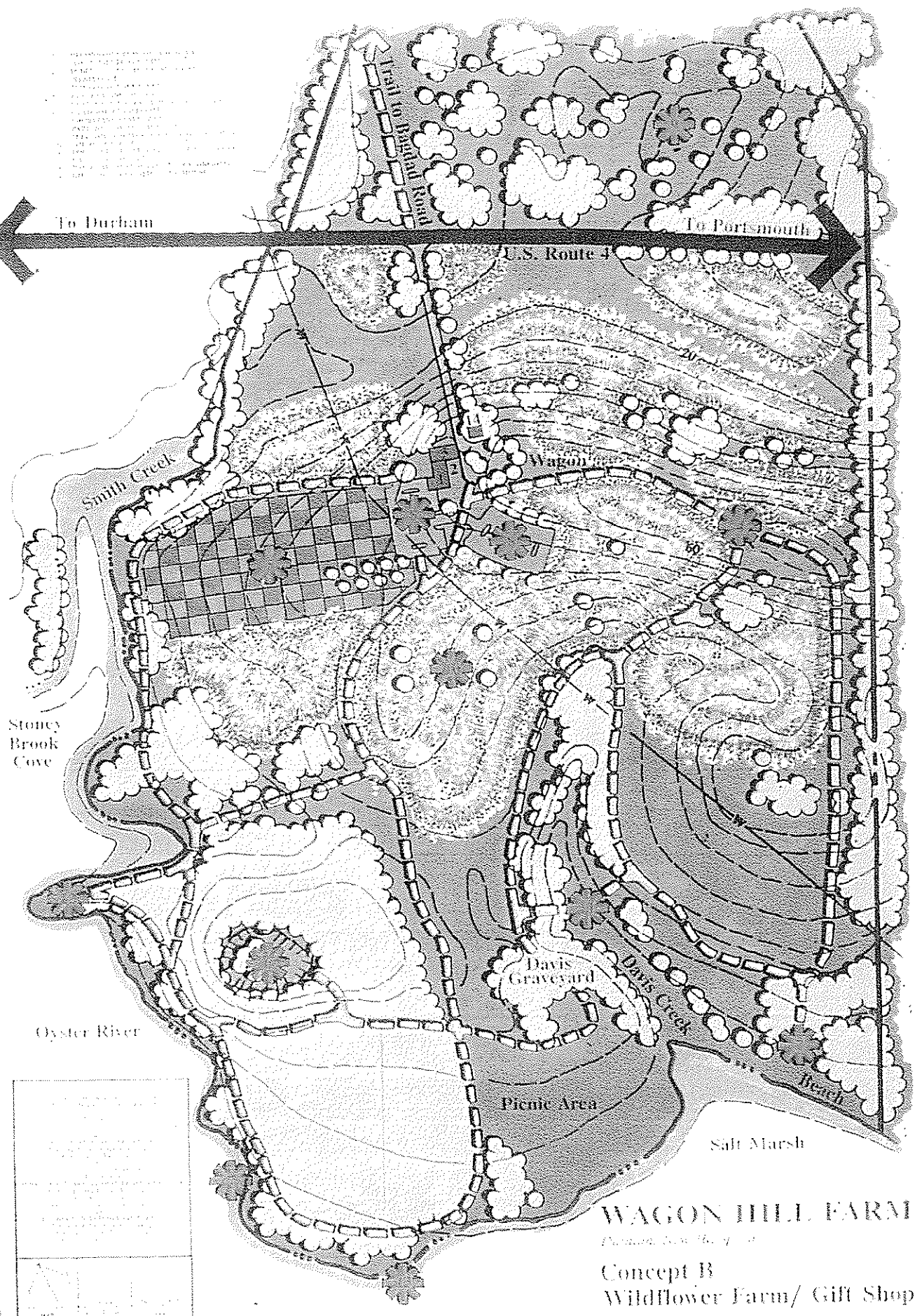
1. Existing
 2. Proposed
 3. Contour
 4. U.S. Route 4
 5. Smith Creek
 6. Davis Creek
 7. Stoney Brook Cove
 8. Oyster River
 9. Salt Marsh
 10. Beach
 11. Picnic Area
 12. Davis Graveyard
 13. Wagon Hill



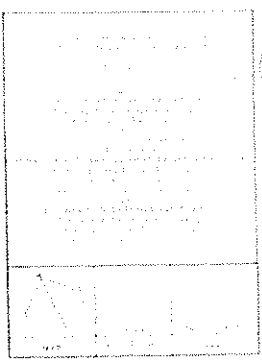
1. Existing 2. Proposed 3. Contour 4. U.S. Route 4 5. Smith Creek 6. Davis Creek 7. Stoney Brook Cove 8. Oyster River 9. Salt Marsh 10. Beach 11. Picnic Area 12. Davis Graveyard 13. Wagon Hill
--

WAGON HILL FARM
 Conservation/ Preservation
 Concept A

1. All areas shown on this map are subject to change without notice.
 2. The map is for informational purposes only and does not constitute a contract.
 3. The map is not to be used for any other purpose without the written consent of the developer.
 4. The map is not to be used for any other purpose without the written consent of the developer.
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 10. The map is not to be used for any other purpose without the written consent of the developer.



WAGON HILL FARM
 A Division of Wagon Hill Farm
 Concept B
 Wildflower Farm/ Gift Shop



site has been graded (possibly following gravel extraction for parking areas) Scouting or conservation organizations could rough cut logs for benches or simply arrange large stones for seating and a fire pit could also be constructed. The classroom could be integral part of an interpretive trail system. Cost - Variable

7. The shoreline is in a state of deterioration and it is not anticipated that it will stabilize itself naturally. Shoreline stabilization along the water's edge should take two forms: a hardened edge installation of a rip rap slope. This would be appropriate in limited areas above the salt marsh fringe to prevent continued erosion. Rip rap would include filter fabric insulation - \$350.00 per linear foot.

A softer form of shoreline stabilization would require the installation of vegetated fiber roll along the toe the slope backfilled with soil suitable for the salt marsh plantings. The system would include palette mats that are pre-vegetated to begin the initial re-vegetation of shoreline areas. This method is most desirable where the salt marsh has eroded and replacement is required to prevent further degradation of the salt marsh. Vegetated shoreline stabilization - \$155.00 per linear foot.

Concept B: Wildflower Farm / Gift Shop

This concept includes the first seven elements from Concept A and the further development of the space in the farm house complex and establishes the wild flower fields throughout the 100-acre parcel..

1. Restoration of the ground floor of the house for museum/office space - \$132,000.00
2. A caretaker's apartment with new stair and kitchen at the ell - \$5500.00
Improvements to the upper barn storage space - \$57,090.00
8. Parking for 150 cars would nearly double the amount of parking from Concept A and allow for large events of 100 people or more to happen. Earth moving services could be donated. The cost of materials without donations would be approximately \$ 8,000.00
9. Selling the northern 39 acres is contingent on a number of factors; **it may not be suitable for development due the wet soils**, and as a result, may not be able to command a high sale price. Further soil investigations will be needed to determine a sale price. Previously prepared studies have indicated the land has little value.
10. Planting wild flowers on the lower 100 acres is an exciting proposition. After the initial investment of cultivation the fields would require little maintenance and would provide years of lasting beauty to the site. The flowers would enhance the setting for weddings and conferences. One possible alternative may be to have a local grower to develop an agreement with the Town of Durham to plant and manage the fields at their own expense and the Town would provide them with free work and retail space in return. Cost - \$8000.00. Construction of retail space variable.

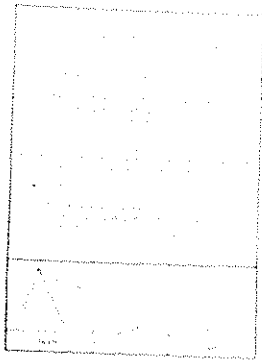
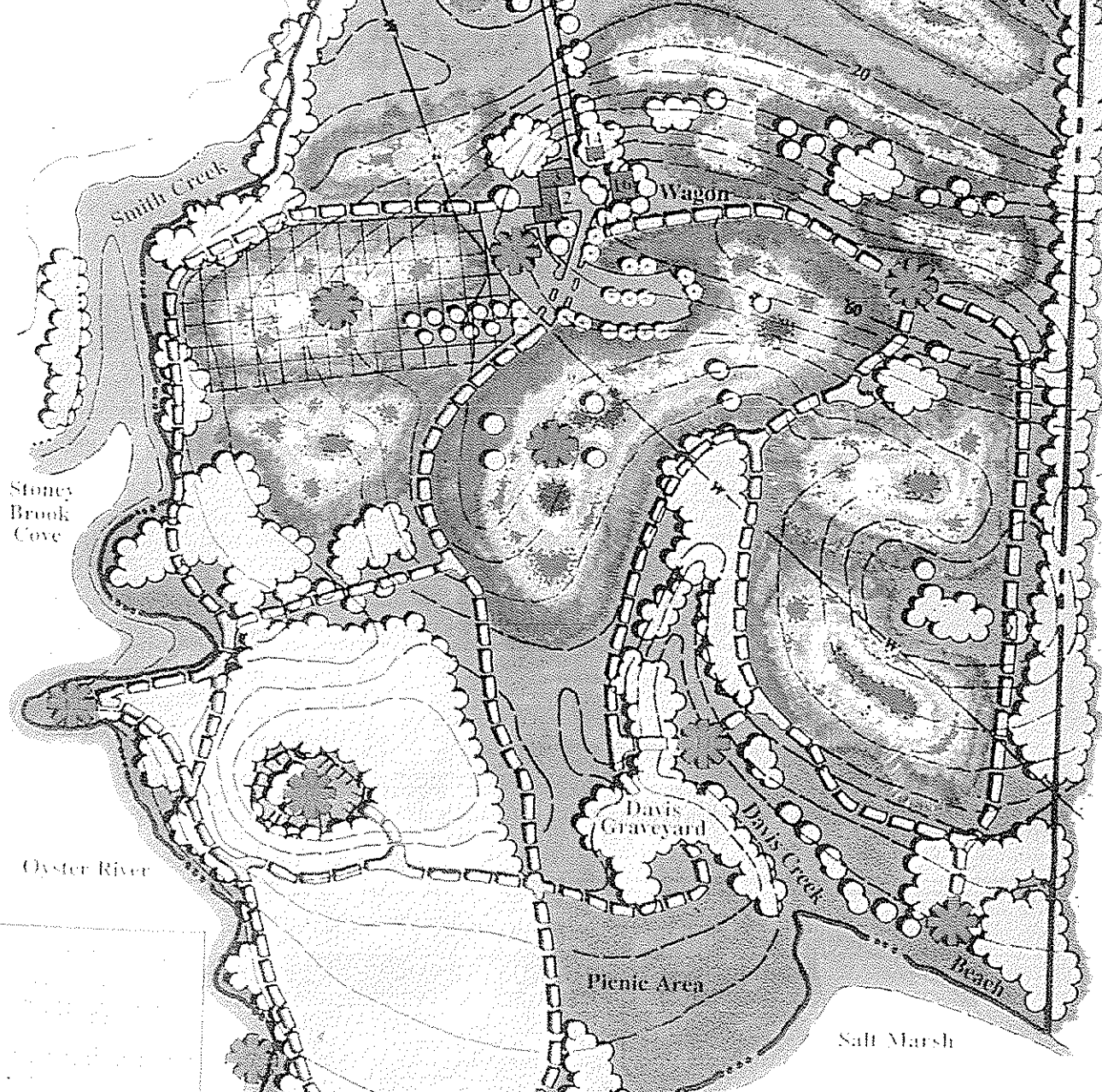
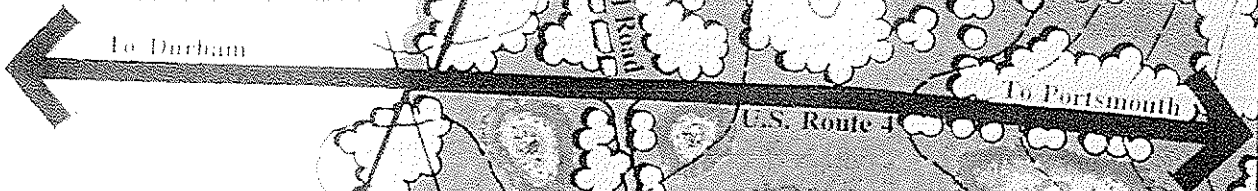
11. A footbridge at Davis Creek would help protect the wetlands that are now being jeopardized by people crossing the creek. The cost could be minimized by donated labor (e.g., Eagle Scout Project) and materials. Full cost construction without donations - \$50.00 per square foot or approximately \$10,000.
12. Open gazebo structure would provide protection for the rocky slopes at the high point by Stoney Brook Cove and become a part of the interpretive trail system as well. The site is also a potential backdrop for wedding photography. Cost - \$50.00 per square foot. Approximately 500 square feet needed equals a \$25,000.00 structure.
13. It would be difficult to secure Army Corps of Engineers permits for a new wharf and floating dock because the structure would have to withstand ice forces and would have to be a substantial structure. To reach low water the structure would need to be several hundred feet long. Cost - \$182,880.00
14. Rebuilding the cider mill could happen if the new use could pay for the costs of construction and/operation. Construction Costs: \$153,600.00..

Concept C Wedding Pavilion / Boathouse

This concept includes the first fourteen items from Concepts A & B and includes reconstruction of the dairy barn which could be used as a Town meeting space, conference or wedding facility and proposes a boathouse at the wharf structure.

15. The boat house and/or bathroom facility at the wharf should be looked at closely. The problems of running water, sewer lines, and electricity on a pier can be long-term maintenance issues. The utility lines would be susceptible to freezing or damage from wave and ice conditions under the pier structure. The boathouse may be more suited to an upland location with sufficient room immediately in front for users to work on boats and allow easy transfer of boats in and out of the boathouse. In addition, with the presence of wetland vegetation on the outer portions of the wharf area it is unlikely that construction over that area would be allowed. Cost - \$81,000.00
16. A 400-seat conference space could at the dairy barn site. It would require a first floor of 6,788 square feet. The facility in combination with the wild flower fields could provide an attractive and marketable meeting facility. Cost - \$676,800.00

1. The proposed site for the pavilion/boathouse is located on the eastern shore of the Oyster River, adjacent to the Davis Creek and the Salt Marsh. The site is approximately 1.5 acres in size and is bounded by the Oyster River to the west and the Salt Marsh to the east. The site is currently undeveloped and is surrounded by a mix of natural and man-made features.



WAGON HILL FARM
 2000 sq. ft. ±
 Concept C
 Wedding Pavilion/ Boathouse

Workshop #2 - Concept Evaluations

The following input was gathered at the July 12, 1995-public workshop. This information will be incorporated into our team's final recommendations for a master plan and management plan. These notes summarize the workshop participant's input. The participants were divided into three groups. Each group had an opportunity to review and discuss each of the concepts. Each of the plans was rated by the participants as follows: "great-implement, good-investigate, and bad-discard.". All elements thought to be great ideas will be incorporated in the plan. Elements thought to be good ideas will be included as items which need further investigation and that may be incorporated at a later date. Ideas thought to be bad ideas by the group may be discarded or put left for further investigation. The management plan will address specific ways to fund each of the preferred elements.

CONCEPT A: CONSERVATION / PRESERVATION

As a whole this plan was accepted by each of the workshop groups with some modifications to certain elements.

1. **Reconstruction of the barn for some type of meeting facility and public restrooms.**

Despite the price tag attached to this element the participants thought this was a "great" idea. Many citizens emphasized the importance of deferring costs by trying to use some the timbers from the existing structure, perhaps using the existing framework with new finish work. There was some support for demolishing the present structure and waiting until money was available to erect a new structure. Most people agreed that this was a great opportunity for volunteer labor to reduce the price as well.

2. **Repair & maintenance of the farm house and ell.**

This seemed to be a priority. The majority of the participants thought this was a "great" idea and should be the first element addressed once money was made available. The house and "ell" were seen as important to the historic value of the farm and preserving them was important to the future of Wagon Hill Farm as a public facility.

3. **Resurfacing of trails.**

The participants agreed that this should be implemented and made suggestions to divert trails from sensitive areas to deter erosion. Suggestions included investigating existing facilities at the Urban Forestry Center in Portsmouth which has interpretive trails and a meeting facility and at Sandy Point in Stratham.

4. **Parking for 80 cars.**

Most participants gave this idea a conditional "great" rating. The conditions include keeping the surface gravel, making sure that the lot was plowed in the winter, and redefining existing entry road and parking so that past problems with circulation can be avoided.

5. **Designate 5 acres for agriculture.**

Without exception this was thought to be a "great" idea.

6. **An outdoor classroom & campsite.**

After some discussion as to the location of the proposed camp site this was given a "great" rating. At issue was the location; some thought a location closer to the river was more appropriate, so that water would be closer to camp fires. It was pointed out that the scouts used the grove site next to the river for years before the town bought the property.

7. **Shoreline stabilization.**

There was a consensus among the participants that this work needed to be done and was given a "great" rating. It was also suggested, that realigning the trails may be the best way to prevent future degradation of the shoreline.

CONCEPT B: WILDFLOWER FARM / GIFT SHOP

On the whole this plan had both good and bad idea ratings.

8. **Expanded parking for 150 cars.**

This element was given an overall rating of "good" if the parking was used on a temporary basis for overflow.

9. **Sell the "North 40" with trail easement**

This element received a "great" rating and most thought that any amount of money generated could be used to repair and maintain the farm complex or the trail system.

10. **Wildflower Fields (20 acres)**

The participants thought this idea had merit but required some further investigation and therefore was given a "great/good" rating. There was some concern as to whether the environmental impact of increased use of the farm would outweigh the beauty and aesthetic of such a proposal. Some thought that the Emery Farm across Route 4 may be interested in helping with the fields as an extension of their cut flower business.

11. **A Footbridge at Davis Creek**

The participants supported this idea and gave it "great" rating.

12. **A gazebo lookout**

The participants gave this a "good" but wanted to investigate the idea further. Perhaps

eliminate the gazebo structure and propose a simple boardwalk to protect the shoreline.

13. Wharf structure with bathrooms.

The majority of the participants felt that a wharf was an unnecessary expense and was a “bad” idea. However, there was support for permanent environmentally sensitive bathroom facilities by the water.

14. A gift shop at the cider house

In general the participants thought this was a “great/good” idea, but required future investigation to determine whether local businesses would be effected.

CONCEPT C - WEDDING PAVILION / BOATHOUSE

This plan represented a complete build out scenarios for the farm.

15. A boathouse at the wharf.

The majority of the participants thought this “bad” idea. However, some thought that if a local rowing or boating club were to fund, permits and build such a facility it may be worth further consideration.

16. A 400-seat pavilion at the dairy barn site.

The participants were hesitant to give this idea their full support and therefore assigned “good” rating. Concerns were expressed about turning the farm into a commercial venture and compromising the recreational value of the property. It was suggested that the barn / conference center site be reserved for future consideration. It was also noted that the Town does not have adequate space for large meetings.

2G PREFERRED PLAN

The preferred plan is based on previous studies prepared by and for the Town, inventory and analysis findings, workshop input and recognized standards for the design and implementation of recreational and architectural improvements. In addition to public comment at the workshops the consulting team received letters and phone calls. These comments have also been incorporated into the final plan.

An open and consensus building planning process is by its nature a series of compromises. This plan represents our best effort to satisfy the thoughts of individuals and groups that have participated in previous studies as well as this one. The plan should be viewed as a guide or a tool. It is important to adhere to the basic goals and objectives of the plan. It may be necessary to make adjustments in the details of implementation to match capital and human resources and respond to market forces.

2H PRESENTATIONS

On August 12, 1995, the consulting team was on hand for the Durham Day festivities at the Wagon Hill Farm to explain the Master Plan and conduct tours of the site, the waterfront and the buildings. The tours and presentations were conducted for groups of people and individuals alike. On August 15, 1995, the consulting team presented a draft of the final plan to the recreation committee for review and comment. Based on the comments final revisions were made to the plans and report. A final presentation was made to the Town Council on August 21, 1995.

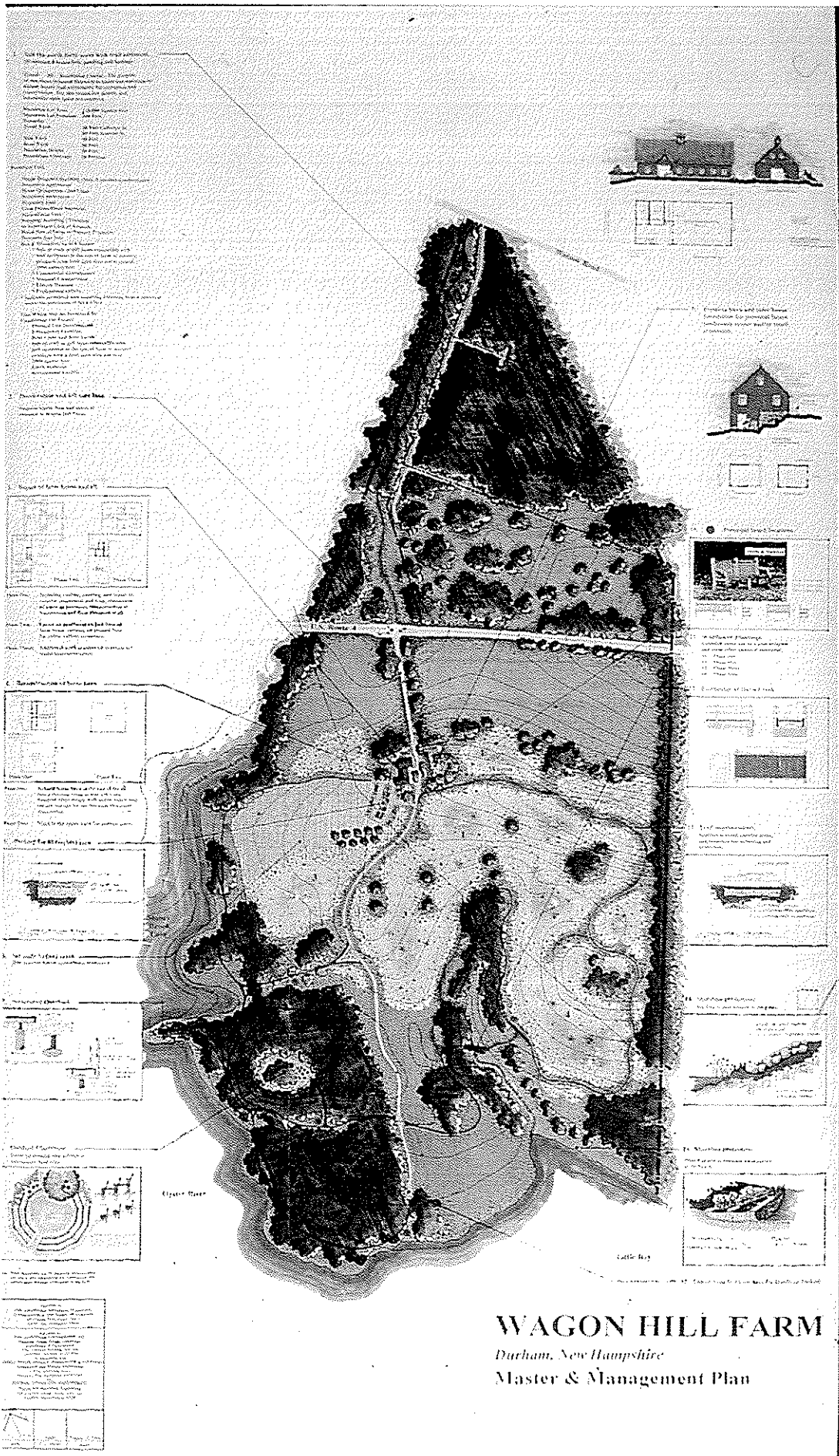
SECTION THREE: THE PREFERRED PLAN

3A DESCRIPTIONS

SITE IMPROVEMENTS

1. The sale of the forty-acre parcel has been discussed in previous studies. The value of the property for recreation is limited because of the poor soil. The site could be divided into four house lots. Soil Conservation Service mapping indicates that the soils may be able to sustain on-site septic systems. After proper tests are performed, the site could be appraised, possibly subdivided and sold to provide funds to maintain or upgrade the farm house.
2. Applications should be filed with the NHDOT for a deceleration lane and a turning lane to be striped at the entrance to improve visibility and safety for cars entering and exiting the site.
3. A parking lot for 80 cars would provide sufficient parking for the meeting barn and keep the circulation through the farm yard clear. The lot should be surfaced with gravel or crushed stone so that water will drain efficiently and not require storm water treatment. By minimizing cut and fill and blending the parking area with existing topography the visual impact of the lot will be minimized. Overflow parking can be directed into the fields to the south and west of the proposed lot.
4. Setting aside 5 acres for agriculture will keep the land from the proposed parking lot to Smith Creek available for programs such as Community Supported Agriculture. Although there is limited interest at the present time, by setting the land aside the Town's options will be open for future considerations.
5. The area known as "The Point" where Smith Creek meets the Oyster River will require some type of structure and/or protection to prevent any further erosion. The area is a part of the pristine marsh system identified by The Durham Coastal Method Inventory & Evaluation Project (D.C.M.T & E.P.). The structure will be a valuable spot to observe wildlife in the river and marsh. Some of the shoreline degradation is caused by ice and tides, however, most of the impact in this area is from human intervention.
6. The outdoor classroom is located in the gravel pit because of the sandy soils that provide good drainage for tenting camping and outdoor gatherings. The previous site in the Chesley Grove has wet soils and is too close to the pristine marsh system. A simple arrangement of rough cut logs can serve as a fire circle and a classroom for scouting groups and area schools. This site has educational value as well, as the site of the Davis Garrison.

7. The plan shows an area set aside for the reconstruction of the Dairy Barn and the Cider House because of its historical, educational and development potential. At some point in the future the Town may decide to rebuild the Dairy Barn as a conference center for up to 400 people, and rebuild the Cider House for retail space. The circulation through the farm yard will be improved by locating the parking to the west of the new carriage barn.
8. Placing benches at intervals around the trail system will provide rest stops and educational vantage points throughout the property. The Smith & Hawken bench specified will hold up to harsh seacoast weather conditions and is a design which is appropriate to the site.
9. Planting wildflowers on the property will increase the beauty of the fields, increase the diversity of the wildlife on site, and decrease the long term maintenance of the fields. After the initial investment to prepare the land and seed the land, the fields will only need to be mowed once a year after the first frost. Planting in the spring is recommended so that adequate water from rain can establish the plants. As a pilot project the area south and west of the wagon should be planted to determine the viability and public value of wildflower plantings. If the successful phases two, three, and four can be added on a yearly basis.
10. There is a desire to short cut the present trail system at Davis Creek bringing people through sensitive wetland habitats. Building a bridge structure will help prevent erosion from occurring at the crossing and will create a wildlife and habitat observation point along the trail. The construction of the bridge should begin by flagging the wetlands in the area and then creating a structure that effectively keeps people above the grasses.
11. Trail system improvements include the spreading mulch to help keep people on the trail and to prevent root compaction through wooded areas. The new surface will help prevent people from tripping over tree roots or into holes as well. Areas such as the steep bank down to the beach in the southeast shoreline should either be closed off to prevent further erosion or re-vegetated with plant mattes to help protect the bank from further degradation. Simplifying the trails through the area south of the orchard will help keep environmental impacts to a minimum. If a phasing program is needed to defer the costs, the areas closest to the river and through any wet areas should be the first to receive the bark mulch.
12. Protecting the pristine marsh system involves two steps. First areas of limited degradation should be re-vegetated using a pre-seeded mesh to reestablish plants quickly. The area around the point needs to be rip rapped to protect the area from further erosion.



Site History

1. The site was originally owned by the State of New Hampshire and was used as a military installation during the Revolutionary War.

2. The site was later owned by the State of New Hampshire and was used as a military installation during the Civil War.

3. The site was later owned by the State of New Hampshire and was used as a military installation during the World War I.

Site Analysis

1. The site is located on a hillside with a steep slope.

2. The site is surrounded by wooded areas.

3. The site is adjacent to a pond.

Site Planning

1. The site is divided into several zones.

2. The site is designed to be a self-sufficient farm.

3. The site is designed to be a sustainable farm.

Planting Schedule

1. Planting should begin in the spring.

2. Planting should continue through the summer.

3. Planting should be completed by the end of the year.

Planting Details

1. The site should be planted with a variety of trees.

2. The site should be planted with a variety of shrubs.

3. The site should be planted with a variety of flowers.

Planting Specifications

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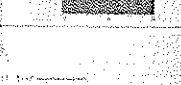
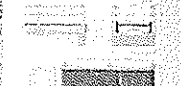
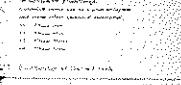
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WAGON HILL FARM

Durham, New Hampshire

Master & Management Plan

SCIENCE CENTER:

TENANT
ENTRANCE
(SEAT ROOMS)

OFFICE / CONF.
ROOMS

SCIENCE CENTER
DISPLAY/
RECEPTION

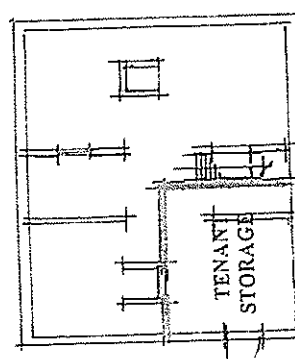
HISTORIC
INTERPRETIVE DISPLAY

RE-INSTALL COW STALLS
INT. FINISHES FROM BARN
@ ENTRY

ENTRY FROM FIELD
@ LOWER LEVEL
(AUTO. ACCESS)

BICKFORD-CHESLEY HOUSE (CIRCA 1806)
RENOVATIONS

VENT
MENT



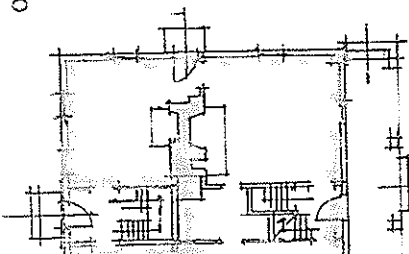
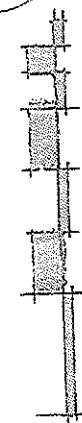
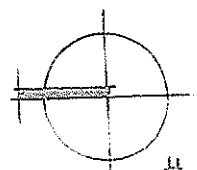
EXIST. STAIR

MECH.

DURHAM HISTORICAL SOCIETY
OFF-SITE STORAGE

NEW SLAB, REINFORCE
FOUNDATION WALLS,
RESTORE FLOOR
STRUCTURE (TYP.)

NEW W.C.'S A.D.A.
COMPLIANT



RESTORE
PLAZZA

NEW STAIR TO
APARTMENT

STAIR TO
UPPER BARN

W.C. (H.C.)

COATS

FOYER/
DISPLAY

VEST.

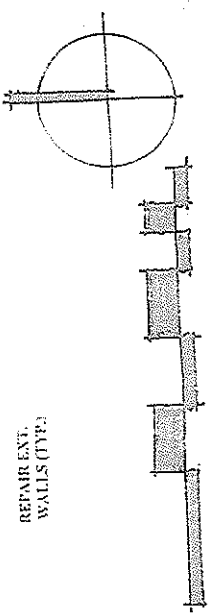
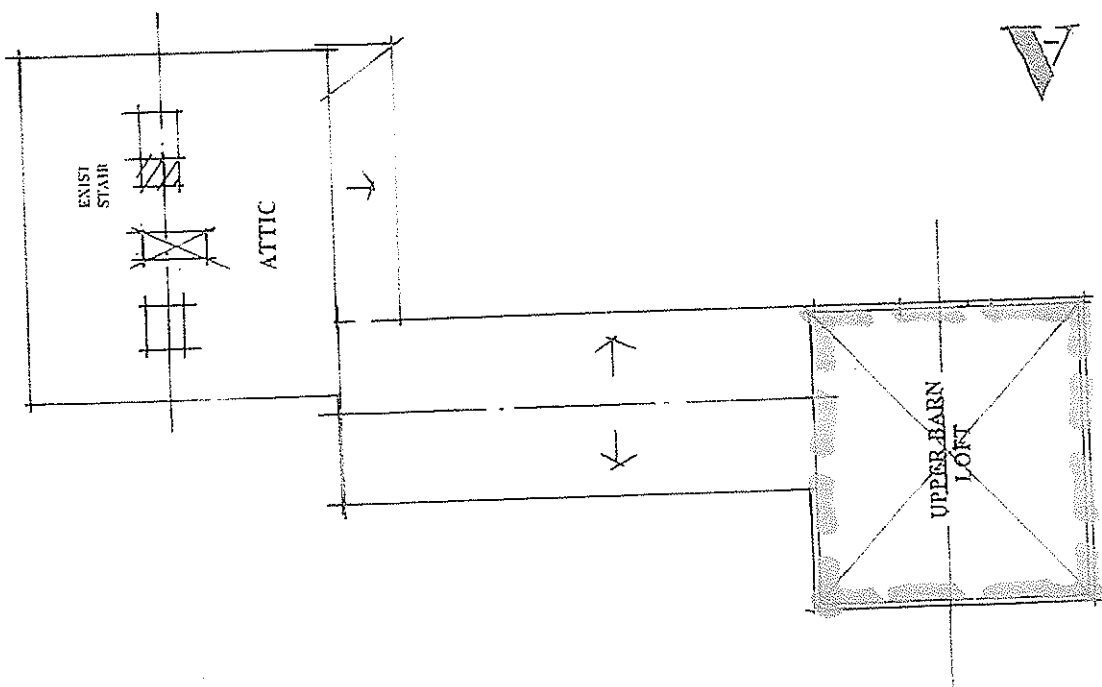
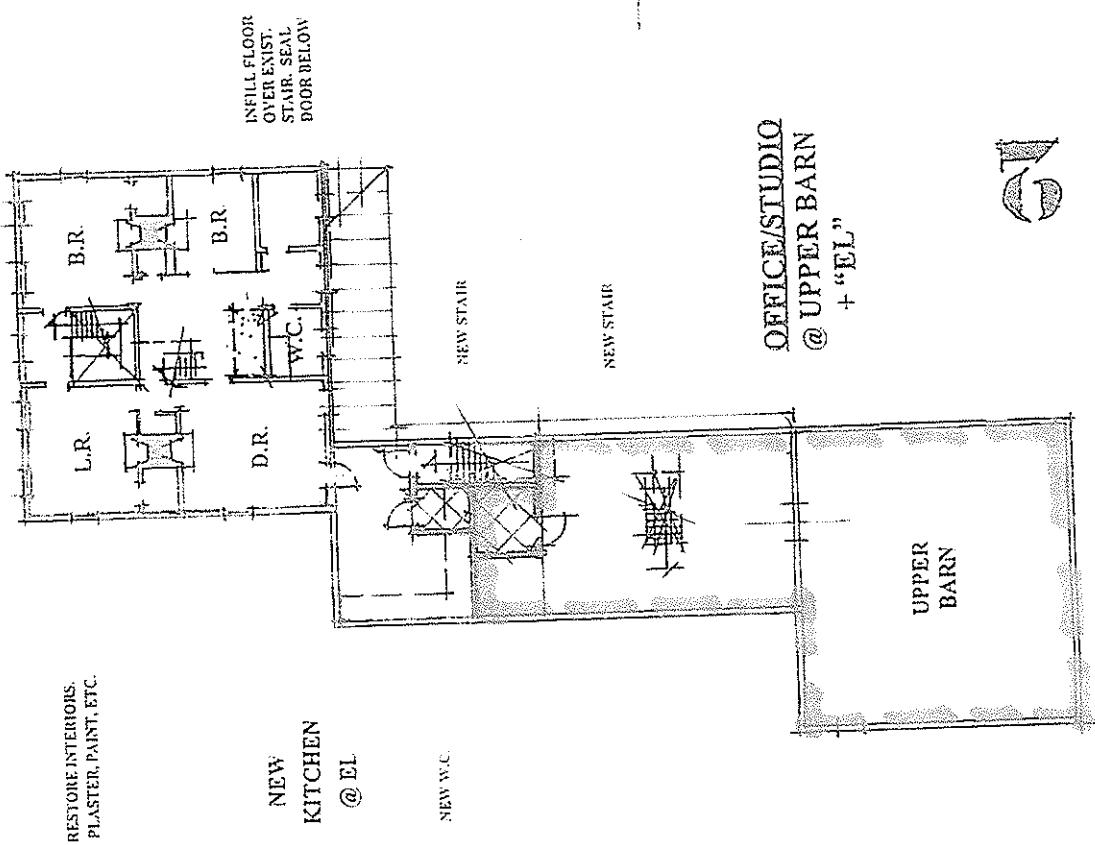
TOWN
MEETING
ROOM
(12,000 SF)

REMOVE
DECK

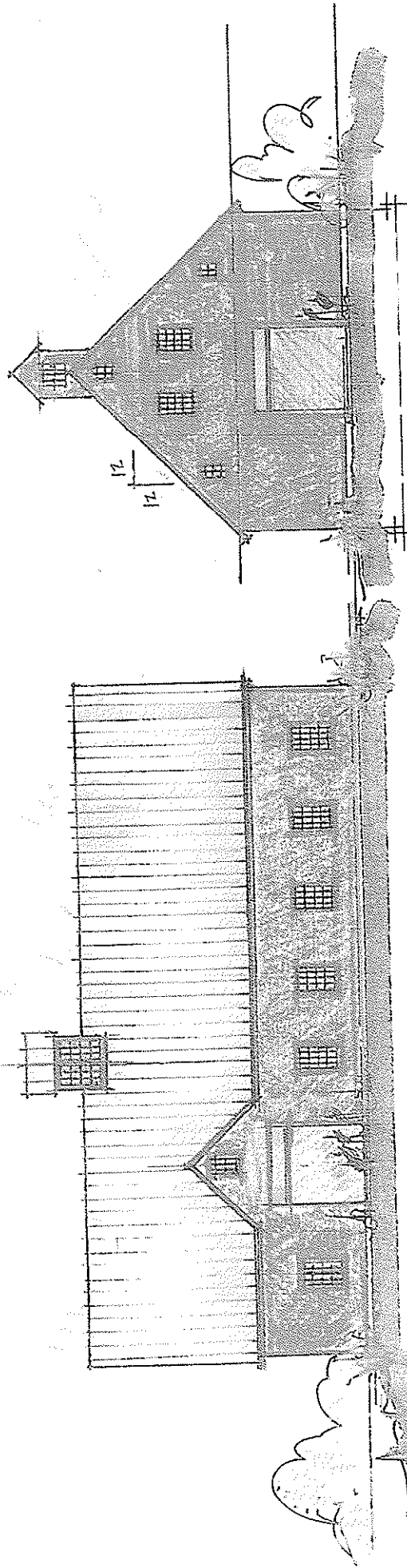


TENANT ENTRY
@ FRONT DOOR

**APARTMENT @ 2ND
FLOOR**

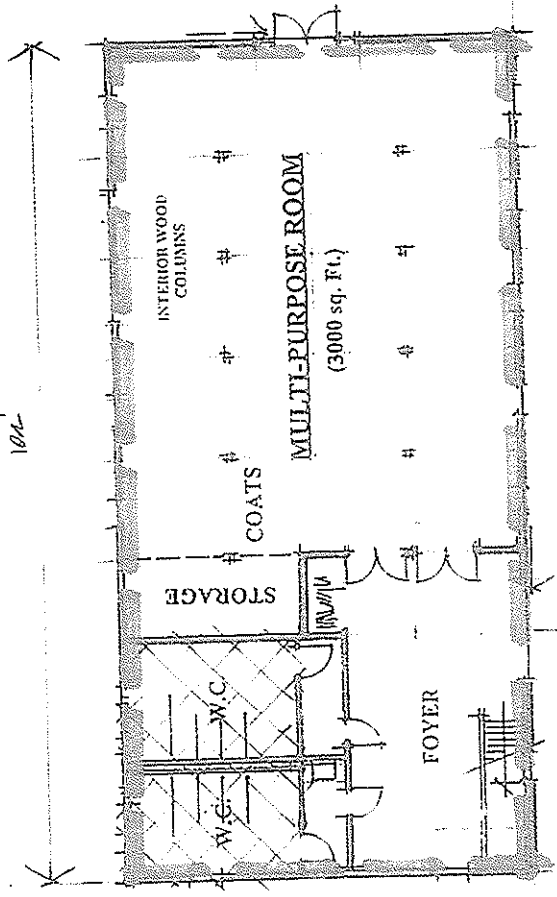


**BICKFORD-CHESLEY HOUSE (CIRCA 1806)
RENOVATIONS**



SOUTH ELEVATION

WEST ELEVATION

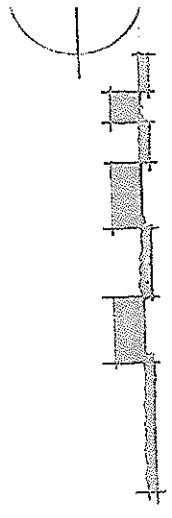


GROUND FLOOR PLAN

MECH/FUEL ROOM @ BASEMENT (28 X 36)

- WOOD FRAMED STRUCTURE
- ON SLAB-ON-GRADE
- WOOD WINDOWS
- NATIVE PINE BOARDS

CONFERENCE BARN
RECONSTRUCTION
SEATING FOR (400±) PERSC



WEST ELEV. DERIVED
FROM HIST. PHOTO
(CIRCA 1890)

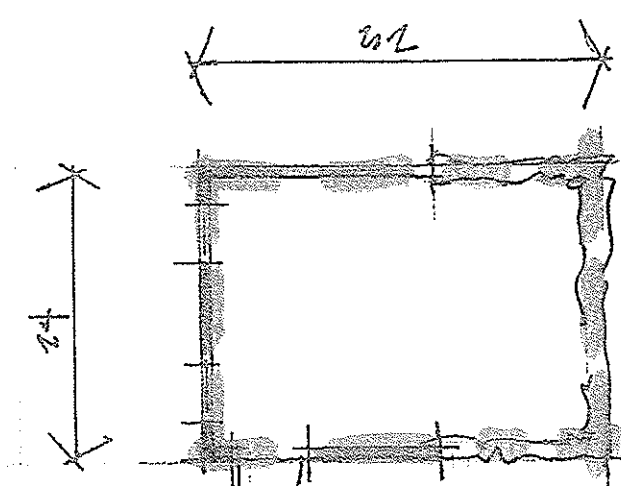
12
12

ENTRY TO
UPPER LEVEL

EXISTING GRANITE FOUNDATION

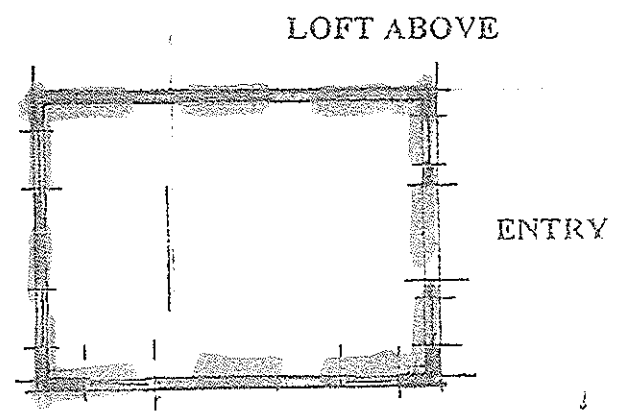
**CIDER MILL
RECONSTRUCTION**

1/8"=1'-0"



LOWER LEVEL

ENTRY



UPPER LEVEL

1/16"=1'-0"

13. Provide parking spaces at the picnic area so that handicap vehicles can transport physically challenged people to the shoreline. This will involve an upgrade and extension of the present road to the picnic area and additional grading and gravel surfacing for four parking spaces. ADA signage will be needed by the spaces as well.
14. Water service and electricity should be provided to the beach area as soon as the funds are available.

BUILDING IMPROVEMENTS

Recommendations for Adaptive Reuse of Bickford-Chesley House

1. Limit use of Bickford-Chesley House for general public (i.e., visitors center, museum, comfort station, recreational center, etc.) in favor of limited traffic public use (research center, office space . . .) with availability by appointment to tours.
2. Reconstruct barn "ell" for required WC's, meeting room, etc., which would see extensive public use. It may or may not be necessary to pursue the "purist" reconstruction outlined by Makarewicz. The overall building form, finishes, etc. must be compatible with the house. Areas of renovated structure could be utilized for interpretive displays, etc.
3. Potential exists for additional barn reconstruction if plans call for additional program spaces. Care must be taken with road/parking design to preclude damaging remaining fabric.
4. Continuing a residential presence on-site appears to be a priority. Provide discrete access/egress to living spaces, subordinated to otherwise public use of the property.

3B PHASING PLAN

Phase One - Building Improvements

The first phase of work would concern the immediate conservation needs of Bickford-Chesley House, ell, and carriage barn. This would include roofing, flashing, painting and repair of exterior clapboards and trim, elimination of water at the basement, reconstruction of foundations and floor structure at ell and barn.

Programs to be housed in the rehabilitated building would include housing continuing in the two floors of the Bickford-Chesley House, a Town meeting room which would seat 150 people, and/or recreation space at ell and barn main floor with public toilets and off-site storage for DHA below. See attached floor plans (Appendix C).

Phase Two - Building Improvements

Additional work at Bickford-Chesley House to create an apartment at the second floor, opening up ground floor rooms for public (office) occupancy. It is intended that this would be a low traffic, relatively undemanding, use pattern. Additional work at upper barn and ell to create art studio/apartment/office space.

Phase Three - Building Improvements

The Cider Mill would be reconstructed to provide retail and storage space for the Wildflower Farm program. This phase introduces larger numbers of visitors to the site. A construction of a dairy barn with gable ends facing the road would restore the missing sense of enclosure to the barn yard. The conference center-barn would seat 400 people.

3C Project Budgets Building Improvements

Project Budgets for the work outlined in the narrative and sketches above have been prepared as follows:

Phase One

Repairs and exterior restoration of Bickford-Chesley House 1890 sf x \$70/sf	\$132,300
Reconstruction and improvements at ell 3080 sf x \$35/sf	107,800
Replace the barn with public toilets at lower level, meeting room at 1st floor, undeveloped (storage) above (1221 x 2) sf x \$85/sf	207,520
Phase I Subtotal	\$ 447,600
+ Fees (9.5%)	43,000
+ Contingency (15%)	<u>73,600</u>
Phase One Total	\$ 564,200

Phase Two

Apartment with new stair and kitchen at ell 550 sf x \$100/sf	\$ 55,000
Restore ground floor house 1890 sf x \$70/sf	132,300
Improvements at upper barn 1903 sf x \$30/sf	57,090
Phase Two Subtotal	\$ 366,290
+ Fees (9.5%)	34,800
+ Contingency (15%)	<u>49,750</u>
Phase Two Total	\$ 450,840

Phase Three

New Cider Mill at existing Stone Foundation 1920 sf x \$80/sf	153,600
New Conference Barn 6768 sf x \$100/sf	676,800

Parking for 80 cars.	
A. Grading - 833 cubic yards (\$5.00/cu.yd.)	\$4,165
B. Surfacing - 252 cubic yards (\$13.00/cu.yd.)	\$3,276
Set aside five acres for agriculture	
Structured overlook	
500 square feet (\$50.00/sq.ft.)	\$25,000
Outdoor classroom and campsite.	
Benches - 10 @ \$675.00 per bench	\$6,750
Wildflower planting pilot program	\$2,080
5.2 acres (\$400.00/acre)	
Footbridge at Davis Creek	
200 square feet (\$50.00/sq.ft.)	\$10,000
Resurfacing of trails.	
560 cubic yards (\$5.00/cu.yd.)	\$2,800
Shoreline stabilization	
A. Rip Rap - 200 linear feet (\$350.00/lin.ft.)	\$70,000
B. Vegetation - 20 linear feet (\$ 155.00/lin.ft.)	<u>\$3,000</u>

Preferred Plan Total* \$260,753 .00

*(less monies generated by sale of north forty)

Phase Three Subtotal	\$ 830,400
+ Fees (9.0%)	74,736
+ Contingency (15%)	<u>135,770</u>
Phase Three Total	\$ 1,040,906

3D Project Budgets - Site Improvements

Phase One

Resurfacing of trails.

560 cubic yards (\$5.00/cu.yd.) \$2,800

Parking for 80 cars.

A. Grading - 833 cubic yards (\$5.00/cu.yd.) \$4,165

B. Surfacing - 252 cubic yards (\$13.00/cu.yd.) \$3,276

Designate 5 acres for agriculture.

Outdoor classroom and campsite.

Shoreline stabilization

A. Rip Rap - 200 linear feet (\$350.00/lin.ft.) \$70,000

B. Vegetation - 20 linear feet (\$ 155.00/lin.ft.) \$3,000

Phase One Total **\$83,241.00**

PHASE TWO

Expand parking to 150 cars \$7,441

Wildflowers 20 acres (\$400.00/acre) \$8,000

Footbridge at Davis Creek
200 square feet (\$50.00/sq.ft.) \$10,000

Structured overlook
500 square feet (\$50.00/sq.ft.) \$25,000

Phase Two Total **\$50,441.00**

PHASE THREE

Preferred Plan

Deceleration lane & turn lane

Permits with NHDOT

SECTION FOUR: ORGANIZATION

4A OVERVIEW

The Recreation Committee with the necessary support should be able to maintain, promote and improve the Wagon Hill Farm property for the short term. If the Town elects to pursue the master and management plans it may be necessary to either expand the role of the recreation committee or create a new entity under the direction of the Town Council. The following organizational model developed by the National Trust for Historic Preservation may be used as a model for and expanded Recreation Committee or for creating a new entity.

BOARD OF DIRECTORS

APPOINTED BY TOWN COUNCIL

Bankers, Lawyers, Designers, Town Officials, Developers

Realtors, State Officials, Educators, Shakers and Movers

(Defines the Mission, Develops the Strategic Plan, Monitors Progress of
Chairperson and Overall Project Effort)

CHAIRPERSON/

EXECUTIVE DIRECTOR

(Strong Leader/Excellent Public Speaker/Cheerleader/Delegator/
Strong Track Record of Getting Things Done and Motivating People)

COMMITTEES & TASKS

ORGANIZATION	FINANCE	PLANNING & DESIGN	MARKETING & PROMOTION
Mission Statement	Budget & Proforma	Site Analysis	Market Definition
Strategic Plan	Cash Flow	Structure Analysis	Market Analysis
Recruitment	Grant Admin.	Conceptual Plans	Marketing Plan
Tax Status	Loan Applications	Preliminary Plans & Costs	Creative Platform
Leadership	Tax Analysis	Final Plans & Specifications	Identity/Collaterals
Meeting Scheduling	Fiscal Impacts	Construction Administration	Special Events/Programs
Tasks Force Review	Financing	Design Guidelines	Presentation Materials
Ownership	Cash Disbursements	Permitting	Media Relations

TYPES OF VOLUNTEERS

(Volunteers from Community/Region/State)

Corporate Leaders	Developers	Planners	Marketers
Governmental Leaders	Bankers	Engineers	Sales
Lawyers	Accountants	Architects	Graphic Designers
Accountants	Financial Planners	Landscape Architects	Realtors
Public Officials	Grants persons	Graphic Designers	Graphic Designers
Elected Officials	Fundraisers	Ecologists	Advertising
Non Profit Leaders	Elected Officials	Historic Preservationist	Print/Radio/Television

COMMITMENT & TIMING

Master schedules should be prepared for planned activities of each of the task groups for a calendar year. Progress should be monitored on a biweekly or monthly basis. The process should be a combination of hard work and fun. Special efforts should be made to highlight the success of each committee in the media and with recognition potluck dinners and special events. Target dates should be established from the very beginning, so that every committee has a well-defined goal. Don't set your expectations too high, failure breeds failure, success breeds success!

PEOPLE

The board of directors should be carefully selected. It should be a combination of public and private sector leaders. Members should be well connected to political and business communities and have a record getting things done and if possible have some experience with similar ventures. It may not be possible, or desirable, to be able to recruit the board solely from Durham, if the Wagon Hill Farm is to have regional appeal it may also need to have a statewide or regional board. It should be an honor to serve on the board but if an individual is not productive they should be replaced as soon as their term is up.

If the Town chooses the "pay as you go approach" nothing will be more important than the leadership of the organization. The director will need to be a person well versed in fundraising, an excellent motivator, creative and politically astute. The director may be responsible to a Board of Directors or the Town Council but the position should be apolitical and autonomous as possible. To be effective the position needs to have both private and public sector attributes.

Committee chairpersons should have some professional expertise. For example, an architect or landscape architect should be heading up the Design and Planning Committee. When recruiting professionals for chairpersons, the mission of the Wagon Hill Farm and the level of commitment should be clearly explained. Like the director these people should have a record of accomplishment and be great motivators and delegators. If possible the committee chairpersons should be local, or at the very least, regional.

The project will need large numbers of volunteers. The organization should be careful not to overwork the volunteers. It will be better to give them a number of small tasks to be completed over a long period of time rather than a very time consuming task to be completed in a short time frame. Recognition of the volunteers effort will also be very important through publicity, awards etc.

EVENTS

It will be important to host a number of non-fundraising events - pep rallies - to keep the spirits of the organization up and recruit new volunteers. Funding the needed improvements will be a long and arduous process the goal should be to create a "Wagon Hill Family" of volunteers. Guest speakers from similar organizations should be invited to share war stories and provide inspiration. Fundraising events for the general public should be kept to a maximum of one or two a year. The events should be planned and executed with military precision.

SECTION FIVE: REVENUE SOURCES

5A OVERVIEW

The goal shared by the Town, the Recreation Committee and the consulting team have been to develop a master and management plan that balances the needs of the community with its ability to pay for the desired improvements. Our objective is to make the facility self sufficient balancing revenues and expenditures. While the majority of participants at the workshops stated the need and desire for continued maintenance and improvements, they were also reluctant to endorse those improvements that would generate revenue. The management plans that follows offers a series of options for generating revenues from a variety of sources. The revenue generators coincide with elements discussed and indorsed in the Master Planning process. Funds required for the facility range from \$ 530,861 to \$ 1,621,543 depending on whether the goal is to maintain or expand the facilities.

5B POSSIBLE SOURCES OF INCOME

Taxes

An allocation of \$.01 on the current grand list would generate approximately \$3100.00 that could be dedicated annually to the maintenance and improvement of the Wagon Hill Farm.

User Fees for Individuals and Families

A parking fee could be charged to Durham and non-Durham residents. The fee could be structured similar to the New Hampshire State park's fee system. Visitors will be able to buy a season pass for \$35 per person; \$50 per family; or a daily fee of \$2.50 per day per person. A user fee system would require a person to monitor the entrance and collect fees or review passes. For example 100 family season passes could generate \$5000; 200 individual passes could generate \$7000; and 750 daily passes could generate \$1875 for a total possible revenue of \$13,875. Assuming volunteer assistance would not be available expense for full time/part-time employee excluding benefits would be approximately \$10,000. The net result would be approximately \$3500 based on a conservative estimate of visitations. To verify potential use current and potential use of the site would require a survey.

User Fees for Groups and Organizations

For profit groups should be charged for use of the facility on a per day per person basis, for example, 100 people for \$250. Non profit groups should be given an option of paying the standard per day per person rate or they may be given the option of in kind service, for example, mowing trails, building bird houses, stripping paint etc. Corporations should also be given an option to become a patron or friend of the farm. For example a tax deductible donation of \$5000 would allow a fixed number of their employees to use the farm for a fixed number of visits per year.

Cross Marketing

It may be possible to work with other area attractions in sponsoring joint promotions for example an extra \$5 on a Strawberry Banke admission would allow a family to visit the Wagon Hill Farm. "Cross Marketing" with other like attractions could be a very profitable venture with very little overhead for the farm. Again a person would be required to monitor admissions. It is difficult to determine how much revenue would be generated from a cross marketing program. It would be seasonal and dependent on the level and kind of recreational development at the farm. If the farm house was a "rural life museum" and the fields were cultivated in "wild flowers," for example, revenues could be quite significant. Including the farm on bicycle or heritage tours could also be a way of attracting visitors.

Grants

Historic Preservation Grants may be available from the State on a competitive basis for both technical assistance and construction. In most cases the Town will have to provide matching funds or in kind services.

The project may be eligible for Community Development Block Grant funds if it could be demonstrated that the project would directly benefit disadvantaged segments of the community or be a source of economic development.

Foundations fund a variety of projects similar to Wagon Hill Farm. The key to successful grant writing is to prepare a grant application that matches the goals of the organization that you are asking money from . . . For example a particular foundation may have a special interest in Native Americans and may be willing to fund an archaeological investigation or sponsor the construction of an exhibit on Coastal Indians. The National Coastal Resources and Development Institute specializes in funding a variety of coastal tourism and recreation projects. In the past grants have been awarded up to \$75,000. Qualifying foundations and writing grants is a time-consuming process but it can often provide funds for projects difficult to fund through traditional sources.

Rental and Lease Income

The Farm currently produces \$9600 income annually from the rental of the house. If the farm house were improved and the ell and barn space were usable the income could be increased significantly, If the cider mill was reconstructed it could be rented or leased to a gift shop retailer for approximately \$500 to \$1000 per month. A 400-seat barn conference center with limited kitchen facilities would rent for \$1200-1500 per day. Assuming that the facility would be rented 60 days a year for weddings, meetings and conferences it would conservatively generate in excess of \$60,000 per year.

Retail Sales

Retail sales have become an important income stream for museums and parks. Retail sales may include: food and beverages, equipment rentals (tape recorded interpretative materials, canoes, kayaks), art work, eco/educational products, plant and bird seeds, bird houses, books, posters etc. Retail sales centers for parks and museums should be understated and subordinate to the park or museum experience and sell and promote products that are closely linked to the facility. For example: Watercolor paintings of Wagon Hill Farm; seeds from wildflowers that can be found on the property; bird and plant identification books etc. The income generated from retail sales could be quite significant or very modest depending on the scale and promotion of the operation. Gift shops and concessions for parks normally work off a 20-30% profit margin.

Events

The farm location and facility are ideally suited to host a variety of income producing events. Art and Crafts shows can generate a significant amount of over time. Exhibitors typically will pay \$50 per exhibit space where they have to bring their own tents. If the farm provided a tent or indoor space for a juried show, fees could exceed several hundred dollars. Athletic events do not generate as much income but they can be relatively easy to stage and promote. Running, biathlon and cross country ski events typically charge \$15 to \$35 per entry. An average event may draw 50 to 100 entries. Expenses might include: tee shirts, trophies, power bars etc. A juried car show is another low impact event that can produce some income. Classic car buffs will typically pay \$25 to enter their car in a juried show, in addition, there is normally a nominal charge to visit the show (typically less than \$5). 1000 visitors over a weekend could generate say \$3000 weekend including expenses.

Sale of the North Forty

It is difficult to determine the fair market value of the property at this time. Unknowns include the waste water disposal capacity of the site and the water supply capacity. It will be important to determine these capacities to establish the highest and best use value of the property. The master plan depicts a four-lot subdivision with access of from Watson Road. For budgeting purposes we have conservatively estimated that the raw land would have a value of \$40,000. If the land had approved septic sites and wells, the value would increase dramatically, perhaps as high as \$30,000 per approved house lot. Furthermore, if the Town built a paved road to the site the value again could increase, to perhaps \$50,000 per lot. It should be noted that the Town might incur predevelopment costs including: engineering, well, wastewater and road construction if these services cannot be handled in-house.

SECTION SIX: PROPOSED ANNUAL BUDGETS

OVERVIEW

The following annual budget estimates are based on the plans for maintenance and improvements which are included in this report. In developing these budgets we have had to make some overall assumptions. First, we have assumed that the Town has a strong desire to minimize its costs. Second, we have assumed that the Town is willing aggressively pursue avenues which may create income. And, third, we have assumed that any budget prepared will need to be flexible so that the Town is able to balance the environmental, social, economic and political impacts of any proposed action.

Plan one, the "leave as it is plan," is a viable option, however, it should be clear that there are significant costs associated with leaving it as is in terms of maintenance. Up until this point the Town has been primarily maintaining the land and the building has fallen into disrepair. There are two options for the farm house, it can be sold to someone who will repair it or the Town can repair the building. If nothing is done, the building will continue to deteriorate and eventually portions of the building would have to be removed. The budget for the "leave as it is" indicates that it would take seven years to pay for building improvements for the farmhouse and removal of the barn if the Town initiated an aggressive fund raising campaign.

Budgets for phases one through three progressively increases both in terms of revenues and expenditures. If there is the social and political will to aggressively pursue the phase three option eventually, the facility may begin to generate an income for the Town.

6A "LEAVE IT AS IT IS" SCHEME

CONCEPTUAL ANNUAL BUDGETS

INCOME/EXPENSE

	1996-1997	1997-1998	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003
INCOME							
Income from previous year	\$ 0.00	\$ 4,800.00	\$ 1,600.00	\$ 4,400.00	\$ 2,400.00	\$ 1,400.00	\$ 1,400.00
Campaign Income (Donations)	\$ 1,200.00	\$ 10,000.00	\$ 15,000.00	\$ 20,000.00	\$ 20,000.00	\$ 30,000.00	\$ 10,000.00
Grants	\$ 12,000.00	\$ 24,000.00	\$ 20,000.00	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00
House Rent	\$ 9,600.00	\$ 0.00	\$ 12,000.00	\$ 12,000.00	\$ 12,000.00	\$ 12,000.00	\$ 12,000.00
Program Fees	\$ 600.00	\$ 1,200.00	\$ 1,800.00	\$ 2,400.00	\$ 2,400.00	\$ 2,400.00	\$ 2,400.00
Sale of Property (North Forty -Raw Land)	\$ 40,000.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
Events	\$ 0.00	\$ 3,000.00	\$ 3,000.00	\$ 5,000.00	\$ 5,000.00	\$ 7,500.00	\$ 5,000.00
Cross Marketing	\$ 0.00	\$ 600.00	\$ 1,200.00	\$ 1,200.00	\$ 1,800.00	\$ 1,800.00	\$ 1,800.00
User Fees	\$ 0.00	\$ 8,400.00	\$ 8,400.00	\$ 8,400.00	\$ 8,400.00	\$ 8,400.00	\$ 8,400.00
Total Income	\$ 63,400.00	\$ 52,000.00	\$ 63,000.00	\$ 63,000.00	\$ 62,000.00	\$ 67,500.00	\$ 51,000.00

EXPENSE

Contract Labor (Director/Fundraiser)	\$ 0.00	\$ 5,000.00	\$ 10,000.00	\$ 12,000.00	\$ 12,000.00	\$ 12,000.00	\$ 20,000.00
Advertising & Misc. Program Expense	\$ 600.00	\$ 2,400.00	\$ 3,600.00	\$ 3,600.00	\$ 3,600.00	\$ 3,600.00	\$ 3,600.00
Site Maintenance	\$ 8,000.00	\$ 8,000.00	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00
House Repairs & Barn Removal	\$ 50,000.00	\$ 35,000.00	\$ 35,000.00	\$ 35,000.00	\$ 35,000.00	\$ 40,000.00	\$ 10,000.00
[\$240,000 Required for Repairs]	[\$190,000.00]	[\$155,000.00]	[\$120,000.00]	[\$85,000.00]	[\$50,000.00]	[\$10,000.00]	[0.00]
Total Expense	\$ 58,600.00	\$ 50,400.00	\$ 58,600.00	\$ 60,600.00	\$ 60,600.00	\$ 65,600.00	\$ 43,600.00
Net Income	\$ 4,800.00	\$ 1,600.00	\$ 4,400.00	\$ 2,400.00	\$ 1,400.00	\$ 1,900.00	\$ 7,400.00

CONCEPTUAL ANNUAL BUDGETS

INCOME/EXPENSE

INCOME	1996-1997	1997-1998	1998-1999	1999-2000	2000-2001	2002-2003	2003-2004
Income from Previous Year	\$ 0.00	\$ 10,300.00	\$ 4,500.00	\$ 6,700.00	\$ 5,650.00	\$ 400.00	\$ 15,400.00
Campaign Income (Donations)	\$ 10,000.00	\$ 40,000.00	\$ 60,000.00	\$ 60,000.00	\$ 60,000.00	\$ 60,000.00	\$ 60,000.00
Grants	\$ 12,000.00	\$ 25,000.00	\$ 20,000.00	\$ 25,000.00	\$ 20,000.00	\$ 20,000.00	\$ 20,000.00
Building Rental Income							
House	\$ 9,600.00	\$ 0.00	\$ 12,000.00	\$ 12,000.00	\$ 12,000.00	\$ 12,000.00	\$ 12,000.00
Eil	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
Horse Barn	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
Local Taxes (.03 Grand List)	\$ 9,300.00	\$ 9,300.00	\$ 9,300.00	\$ 9,300.00	\$ 9,300.00	\$ 9,300.00	\$ 9,300.00
Program Fees	\$ 600.00	\$ 1,500.00	\$ 1,500.00	\$ 2,000.00	\$ 2,400.00	\$ 2,400.00	\$ 2,400.00
Sale of Property (North 40 Acres)	\$ 40,000.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
Events	\$ 1,000.00	\$ 2,000.00	\$ 2,500.00	\$ 2,500.00	\$ 2,500.00	\$ 2,500.00	\$ 2,500.00
Retail Sales	\$ 0.00	\$ 0.00	\$ 500.00	\$ 750.00	\$ 750.00	\$ 750.00	\$ 750.00
Cross Marketing	\$ 0.00	\$ 0.00	\$ 1,000.00	\$ 2,000.00	\$ 2,400.00	\$ 2,400.00	\$ 2,400.00
User Fees	\$ 8,400.00	\$ 8,400.00	\$ 8,400.00	\$ 8,400.00	\$ 8,400.00	\$ 8,400.00	\$ 8,400.00
Total Income	\$ 90,300.00	\$ 96,500.00	\$ 119,700.00	\$ 128,650.00	\$ 123,400.00	\$ 118,900.00	\$ 133,150.00
EXPENSE							
Director/Fundraiser - Employee	\$ 24,000.00	\$ 24,000.00	\$ 30,000.00	\$ 36,000.00	\$ 36,000.00	\$ 36,000.00	\$ 36,000.00
Advertising & Misc. Program	\$ 3,000.00	\$ 3,000.00	\$ 6,000.00	\$ 6,000.00	\$ 6,000.00	\$ 6,000.00	\$ 6,000.00
Site Maintenance	\$ 8,000.00	\$ 8,000.00	\$ 10,000.00	\$ 12,000.00	\$ 12,000.00	\$ 12,000.00	\$ 12,000.00
Site Improvements							
Wildflowers - \$2,500	\$ 2,500.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
Parking - \$10,000	\$ 0.00	\$ 0.00	\$ 10,000.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
Shoreline - \$75,000	\$ 7,500.00	\$ 15,000.00	\$ 15,000.00	\$ 15,000.00	\$ 15,000.00	\$ 7,500.00	\$ 0.00
Building Improvements							
Farm House - \$180,000	\$ 30,000.00	\$ 30,000.00	\$ 30,000.00	\$ 30,000.00	\$ 30,000.00	\$ 30,000.00	\$ 0.00
Eil - \$120,000	\$ 0.00	\$ 12,000.00	\$ 12,000.00	\$ 24,000.00	\$ 24,000.00	\$ 12,000.00	\$ 36,000.00
Horse Barn	\$250,000	\$ 5,000.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 40,000.00
Total Expense	\$ 80,000.00	\$ 92,000.00	\$ 113,000.00	\$ 123,000.00	\$ 123,000.00	\$ 103,500.00	\$ 130,000.00
Net Income	\$ 10,300.00	\$ 4,500.00	\$ 6,700.00	\$ 5,650.00	\$ 400.00	\$ 15,400.00	\$ 3,150.00

602 PREFERRED PLAN PHASE ONE - CONTINUED

CONCEPTUAL ANNUAL BUDGETS

INCOME/EXPENSE

	2004-2005	2005-2006	2006-2007	2007-2008
INCOME				
Income From Previous Year	\$ 3,150.00	\$ 10,150.00	\$ 23,650.00	\$ 2,150.00
Campaign Income (Donations)	\$ 50,000.00	\$ 50,000.00	\$ 50,000.00	\$ 25,000.00
Grants	\$ 20,000.00	\$ 20,000.00	\$ 10,000.00	\$ 10,000.00
Building Rental Income				
House	\$ 12,000.00	\$ 12,000.00	\$ 12,000.00	\$ 12,000.00
Ell	\$ 8,000.00	\$ 8,000.00	\$ 8,000.00	\$ 8,000.00
Horse Barn	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
Local Taxes (.03 Grand List)	\$ 9,300.00	\$ 9,300.00	\$ 9,300.00	\$ 9,300.00
Program Fees	\$ 2,400.00	\$ 2,400.00	\$ 2,400.00	\$ 2,400.00
Sale of Property	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
Events	\$ 2,500.00	\$ 2,500.00	\$ 2,500.00	\$ 2,500.00
Retail Sales	\$ 1,000.00	\$ 2,500.00	\$ 2,500.00	\$ 2,500.00
Gross Marketing	\$ 2,400.00	\$ 2,400.00	\$ 2,400.00	\$ 2,400.00
User Fees	\$ 8,400.00	\$ 8,400.00	\$ 8,400.00	\$ 8,400.00
Total Income	\$ 119,150.00	\$ 127,650.00	\$ 131,150.00	\$ 84,650.00
EXPENSE				
Director/Fundraiser	\$ 36,000.00	\$ 36,000.00	\$ 36,000.00	\$ 36,000.00
Advertising & Misc. Program	\$ 6,000.00	\$ 6,000.00	\$ 6,000.00	\$ 6,000.00
Site Maintenance	\$ 12,000.00	\$ 12,000.00	\$ 12,000.00	\$ 12,000.00
Site Improvements				
Wildflowers	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
Parking	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
Shoreline	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
Building Improvements				
Farm House	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
Ell	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
Horsebarn (\$250,000)	\$ 55,000.00	\$ 50,000.00	\$ 75,000.00	\$ 25,000.00
Total Expense	\$ 109,000.00	\$ 104,000.00	\$ 129,000.00	\$ 79,000.00
Net Income	\$ 10,150.00	\$ 23,650.00	\$ 2,150.00	\$ 5,650.00

CONCEPTUAL ANNUAL BUDGETS

INCOME/EXPENSE	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014
INCOME						
Income from Previous Year	\$ 5,650.00	\$ 1,750.00	\$ 5,050.00	\$ 7,550.00	\$ 5,050.00	\$ 4,550.00
Campaign Income	\$ 35,000.00	\$ 35,000.00	\$ 35,000.00	\$ 35,000.00	\$ 50,000.00	\$ 55,000.00
Grants	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00	\$ 20,000.00	\$ 20,000.00
Building Rental Income						
House	\$ 12,000.00	\$ 12,000.00	\$ 12,000.00	\$ 12,000.00	\$ 12,000.00	\$ 12,000.00
Apartment	\$ 0.00	\$ 0.00	\$ 8,000.00	\$ 8,000.00	\$ 8,000.00	\$ 8,000.00
Elli	\$ 8,000.00	\$ 8,000.00	\$ 8,000.00	\$ 8,000.00	\$ 8,000.00	\$ 8,000.00
Horse Barn	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00
Program Fees	\$ 3,600.00	\$ 3,600.00	\$ 3,600.00	\$ 3,600.00	\$ 3,600.00	\$ 3,600.00
Events	\$ 2,500.00	\$ 2,500.00	\$ 2,500.00	\$ 2,500.00	\$ 2,500.00	\$ 2,500.00
Retail Sales	\$ 1,200.00	\$ 1,200.00	\$ 2,400.00	\$ 2,400.00	\$ 2,400.00	\$ 2,400.00
Gross Marketing	\$ 2,400.00	\$ 3,600.00	\$ 3,600.00	\$ 3,600.00	\$ 3,600.00	\$ 3,600.00
User Fees	\$ 8,400.00	\$ 8,400.00	\$ 8,400.00	\$ 8,400.00	\$ 8,400.00	\$ 8,400.00
Total Income	\$ 98,750.00	\$ 96,050.00	\$ 108,550.00	\$ 111,050.00	\$ 133,550.00	\$ 138,050.00
EXPENSE						
Director/Fundraiser	\$ 36,000.00	\$ 36,000.00	\$ 36,000.00	\$ 36,000.00	\$ 36,000.00	\$ 36,000.00
Advertising & Misc. Program	\$ 6,000.00	\$ 6,000.00	\$ 6,000.00	\$ 6,000.00	\$ 6,000.00	\$ 6,000.00
Site Maintenance	\$ 12,000.00	\$ 12,000.00	\$ 12,000.00	\$ 12,000.00	\$ 12,000.00	\$ 12,000.00
Site Improvements						
Expand Parking (\$8,000)	\$ 8,000.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
Wildflowers (\$8,000)	\$ 2,000.00	\$ 2,000.00	\$ 2,000.00	\$ 2,000.00	\$ 0.00	\$ 0.00
Overlook (\$25,000)	\$ 0.00	\$ 0.00	\$ 0.00	\$ 25,000.00	\$ 0.00	\$ 0.00
Footbridge (\$10,000)	\$ 0.00	\$ 0.00	\$ 10,000.00	\$ 0.00	\$ 0.00	\$ 0.00
Trails (\$3,000)	\$ 3,000.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
Building Improvements						
House - Apartment (\$65,000)	\$ 30,000.00	\$ 35,000.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
Ground Floor Restoration (\$150,000)	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 75,000.00	\$ 75,000.00
Improvements to Barn (\$65,000)	\$ 0.00	\$ 0.00	\$ 35,000.00	\$ 25,000.00	\$ 0.00	\$ 5,000.00
Total Expense	\$ 97,000.00	\$ 91,000.00	\$ 101,000.00	\$ 106,000.00	\$ 129,000.00	\$ 134,000.00
Net Income	\$ 1,750.00	\$ 5,050.00	\$ 7,550.00	\$ 5,050.00	\$ 4,550.00	\$ 4,050.00

6D PREFERRED PLAN - PHASE THREE

CONCEPTUAL ANNUAL BUDGETS

INCOME/EXPENSE

	2014-2015	2015-2016	2016-2017	2017-2018	[2018-2025]	2025-2026
INCOME						
Income from Previous Year	\$ 4,050.00	\$ 4,250.00	\$ 24,450.00	\$ 39,650.00	\$ 117,950.00	\$ 58,350.00
Campaign Income	\$ 50,000.00	\$ 50,000.00	\$ 50,000.00	\$ 50,000.00	\$ 350,000.00	\$ 0.00
Grants	\$ 25,000.00	\$ 20,000.00	\$ 15,000.00	\$ 20,000.00	\$ 140,000.00	\$ 5,000.00
Building Rental Income						
House	\$ 12,000.00	\$ 12,000.00	\$ 12,000.00	\$ 12,000.00	\$ 84,000.00	\$ 12,000.00
Apartment	\$ 8,000.00	\$ 8,000.00	\$ 8,000.00	\$ 8,000.00	\$ 56,000.00	\$ 8,000.00
Eli	\$ 8,000.00	\$ 8,000.00	\$ 8,000.00	\$ 8,000.00	\$ 56,000.00	\$ 8,000.00
Horse Barn	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00	\$ 70,000.00	\$ 10,000.00
Cider Mill	\$ 0.00	\$ 0.00	\$ 0.00	\$ 12,000.00	\$ 84,000.00	\$ 12,000.00
Barn/Conference Center	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 60,000.00
Program Fees	\$ 3,600.00	\$ 3,600.00	\$ 3,600.00	\$ 3,600.00	\$ 25,200.00	\$ 5,000.00
Events	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 35,000.00	\$ 5,000.00
Retail Sales	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 5,000.00	\$ 35,000.00	\$ 5,000.00
Gross Marketing	\$ 4,200.00	\$ 4,200.00	\$ 4,200.00	\$ 4,200.00	\$ 29,400.00	\$ 5,000.00
User Fees	\$ 8,400.00	\$ 8,400.00	\$ 8,400.00	\$ 8,400.00	\$ 58,800.00	\$ 0.00
Total Income	\$ 143,250.00	\$ 138,450.00	\$ 153,650.00	\$ 185,850.00	\$ 1,141,350.00	\$ 193,350.00
EXPENSE						
Director/Fundraiser	\$ 42,000.00	\$ 42,000.00	\$ 42,000.00	\$ 42,000.00	\$ 294,000.00	\$ 60,000.00
Advertising & Misc. Program	\$ 10,000.00	\$ 10,000.00	\$ 10,000.00	\$ 15,000.00	\$ 105,000.00	\$ 20,000.00
Site Maintenance	\$ 12,000.00	\$ 12,000.00	\$ 12,000.00	\$ 12,000.00	\$ 84,000.00	\$ 15,000.00
Building Improvements						
Cider Mill (\$175,000)	\$ 75,000.00	\$ 50,000.00	\$ 50,000.00	\$ 0.00	\$ 0.00	\$ 0.00
Dairy Barn/Conference (\$700,000)	\$ 0.00	\$ 0.00	\$ 0.00	\$ 100,000.00	\$ 600,000.00	\$ 0.00
Total Expense	\$ 139,000.00	\$ 114,000.00	\$ 114,000.00	\$ 169,000.00	\$ 1,083,000.00	\$ 85,000.00
Net Income	\$ 4,250.00	\$ 24,450.00	\$ 39,650.00	\$ 16,850.00	\$ 58,350.00	\$ 108,350.00

SECTION SEVEN: MARKETING AND PROMOTION

7A THE TARGET AUDIENCE

Wagon Hill Farm has an opportunity to attract visitors from two major groups: the local market consisting of residents from Durham and surrounding communities and the national and regional markets consisting of tourists visiting the seacoast region. The local market will use the Farm on a regular basis much like they would a community park. A tourist would visit the Farm for an afternoon, or perhaps the day, for a specific event or activity much like a state park.

Heritage and eco-tourism are the fastest growing segment of the tourism market in United States and throughout the world. Tourists are no longer satisfied being observers; they want to participate and learn about the local cultures and environments. Wagon Hill Farm has the potential to attract heritage and eco-tourists and not only have them visit the Farm, but actually get involved in constructing a project. Heritage and eco-tourists are generally highly educated, middle to upper income families and individuals. They tend to be physically active with ages ranging from mid-twenties to post retirement.

7B THE WAGON HILL MESSAGE

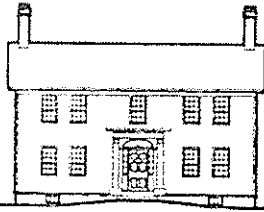
At the core of any marketing program is the message. Creating the message is based on a careful analysis of the target market's current attitude toward Wagon Hill Farm, and then developing a message which gets them to appreciate the Farm and hopefully visit or contribute to it. For example:

- Current Attitude: "I don't know much about "the Farm," but I have heard there are some walking trails and a farmhouse."
- Desired Attitude: "I have heard of the "Farm" is a neat place to visit, they always have some sort of program to do with the environment going on, and they have some new self-directed enviro-tours."

To attract visitors and contributors to the Farm the message will have to be powerful transforming the Farm into a "place" and a "unique experience." The message must be consistently reinforced in supporting materials including: brochures, print and broadcast advertising.

MEDIUM

In addition, to traditional advertising the Farm should consider advertising in environmental, agricultural, historic preservation and cultural newsletters and public radio. The Farm could also promote itself with "rack cards" in rest areas, hotels and like tourist attractions.



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FIELD VISIT REPORT

Wagon Hill Farm, Durham, NH

This report summarizes our findings and conclusions about the fabric, significance, and condition of the main building complex at Wagon Hill Farm. Our assessment is based on a visit made June 13, 1995, during which we made a visual inspection of the main buildings on the site.¹ The scope of this assessment did not allow for detailed analysis; however, we were as thorough as time permitted, and believe that our findings encompass the major issues which this fascinating and evocative complex presents. Our complete field notes are attached as an appendix to this report.

The buildings at Wagon Hill Farm consist of a large two-story house, built early in the nineteenth century, and two connected outbuildings—a one and one-half story extended ell to the rear of the house, built probably in the third quarter of the nineteenth century, and a small barn, originally built early in this century as a stable, and subsequently converted to house cows.

The complex presents a great sense of integrity and passage of time. The changes which have occurred to the exterior are consistent with almost two hundred years of continuous occupancy and change, and have in the main been accomplished in ways which add to, rather than detract from, the appearance and presence of the place.

The House

When built, the house had a hipped roof, which was subsequently replaced with the present high-pitched gable roof. The framing of the existing roof does not match the framing of the house,² and the jointing method is one that had largely been supplanted by the end of the eighteenth century.³ These facts combine to suggest that the present roof had seen use on a now-lost structure before it was set atop the farmhouse.

- 1) Due to inclement weather conditions, we did not inspect the west exterior wall of the stable, nor the understory of the utility buildings.
- 2) One would normally expect the roof to be divided into five bays, two of which were located over each of the principal rooms below, and the fifth located over the hall. In fact, there are only four, more or less evenly spaced across the width of the house.
- 3) Joints in earlier timber frames were cut by aligning the pieces to be joined, marking the edge of the receiving piece on the other, and then cutting the joint (scribe rule). Late in the eighteenth century this method was supplanted by the so-called square rule, in which the receiving piece was trimmed out at the joints to a uniform plane lying within the member, at a great saving of time and labor. In square-rule work, the receiving member is *cut away* at the joints, which is not the case in scribe-rule work. The rafter joints in this house are scribe-rule framed.

When the roof was raised, cosmetic changes were made to the exterior of the house. The original corner trim¹ was replaced by the present Greek Revival pilasters. The fact that the original Federal style frontispiece survives at the north (front) door is an anomaly; ordinarily the frontispiece is one of the first elements to be changed when a house is stylistically modernized.

Windows were quite recently replaced throughout the finished part of the house. Since the sash that preceded them were early or original, this was a serious and unfortunate loss.

The west, north, and east sides of the house retain substantial amounts of early or original skive-jointed clapboard siding. The south façade appears to have been completely reworked, probably when the existing piazza was added.² The siding on the south side of the house was replaced with the evenly-spaced butt-jointed clapboards that survive.

The piazza, despite modifications to accommodate the ell, and subsequent (quite recent) repairs to the floor and lower work, appears to retain much of its early configuration. Decorative detail has been lost from the lower parts of the free-standing posts; fortunately, a complete post survives engaged on the east side of the ell.

Inside, the basement is divided into several spaces by early or original brick partitions, some of which also serve a function in supporting the first floor. Brick wall and floor finish, and early nineteenth-century lath and plaster ceiling, in the northeast space indicate a special use for this area, likely the dairy function posited in Ms. Federer's paper.³

The finished part of the house initially presents as organized in the typical double-file plan of the period, with pairs of rooms separated by chimneys on either side of a central hall in both stories. Closer inspection, however, discloses a number of anomalous characteristics:

The two runs of the front stair are essentially of equal length, in contrast to the more common longer first run. The modest-sized room between the front and rear stairs in the first story completely lacks outside exposure, and therefore was wholly dependent on artificial light when such light was expensive and inadequate.

In the second story the plan is even more unusual: The space behind the stair is significantly wider, lapping over the rear of the northeast chamber, and extending south to the exterior wall. There are two small southeast chambers of different width, the first adjacent to the chimney, and the second, without heat and even smaller, in the southeast corner of the house. A third small space, now used as a bathroom, is located in the southwest corner of the central area. The evidence apparent during our visual inspection suggested that this enigmatic configuration is early, if not original.⁴

1) Probably plain boards five to seven inches wide.

2) Based on stylistic evidence, it is likely that the piazza predates the ell.

3) If this is indeed the use to which this space was put, the location of the cellar exit on the west wall would suggest the possibility of an early barn to the west of the house, despite all other evidence to the contrary.

4) We noted no indications of paint shadows or patches in the flooring, door trim and its placement were stylistically appropriate to the construction period of the house, and so on.

The north rooms in both stories survive with their early (Federal period) woodwork substantially intact. In the first story, the south group of rooms has been completely redone, including not only trim but also major structural reconstruction of the floor under the south central and west spaces, apparently undertaken around 1960, when the Tirrells purchased the house.

In the second story the southwest chamber, most of the central space, and the west walls of the south east chambers retain their early woodwork.

A puzzle in the history of the house is the vernacular Greek Revival trim which replaced the earlier Federal work in the southeast corner of the house—the entire southeast first-story room and the east entry, and the exterior walls of the southeast chambers and the central space in the second. There appears to have been a driving force for these changes other than the usual desire to make the interiors appear up-to-date.¹

Overall, the building presents as a substantially intact time machine, incorporating a record of use and change from its construction down through the nineteen-sixties. Great care should be taken in repairing and conserving the building and in adapting it for continuing use to acknowledge the completeness of the survival, and to make changes with a light hand and in a reversible manner.

A number of issues need to be addressed if the complex is to be preserved. The exterior envelopes of all three buildings has been undermaintained for some time. Paint is in fair to poor condition, with large areas of failure; the wood surfaces which it was intended to protect have been exposed to weather, with significant deterioration resulting.² The entire south side of the stable is dilapidated and in a state of disrepair.

The asphalt roof over the three buildings has reached the end of its useful life, and needs replacement in the near future if leaks and their attendant damage are to be avoided.

The chimneys require pointing at the minimum,³ and may require more extensive work which, however, was not apparent when looking from ground level without field glasses.

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- 1) The principal second-story spaces have not been altered. Those where the woodwork has been changed are distinctly secondary, and have only been changed on their exterior walls, leaving their inner woodwork intact. It is tempting to postulate a later nineteenth-century fire or other localized disaster, but no evidence was noted elsewhere in the house.
 - 2) Consideration should be given to replacing deteriorated clapboards with radially (bolt) sawn boards, with skived and lapped joints as appropriate. Sources (there are at least three in New England) can be found in **THE OLD-HOUSE JOURNAL RESTORATION DIRECTORY** (Dovetail Publishers, Two Main Street, Gloucester, MA 01930, \$14.95). This catalogue is an invaluable resource for locating appropriate products and services for old and historic buildings.
 - 3) Use a soft (1:3:10 or "restoration") mortar to avoid damaging the brick: Mortar's purpose is to cushion the joints between the bricks, and since it is more readily replaceable than the brick, to fail first. Using a hard high-strength mortar with historic brick, which is softer than the modern product, can cause early brick to fail before the mortar does, with devastating results for the building's fabric.

Plantings around the building need to be trimmed back to leave space for ventilation, inspection, and maintenance.¹ In addition, the pine trees are inappropriate to the historical landscape around the Farm buildings, and should be removed.²

Inside the building, the major issues to be dealt with include environmental conditions, care of the surviving fabric, and appropriate re-use.

The building is heated with forced warm air. It is unlikely that the system performs to the latest state-of-the-art standards, but with appropriate energy-conservation measures, including storm sash and doors, off-hours temperature setbacks, and similar measures appropriate to an old and somewhat fragile building, performance should be acceptable.

The basement is chronically damp, and wet. The dampness, which is typical of old-house basements, comes about from water vapor rising through the earth floor and masonry walls into the space, where it accumulates and raises the relative humidity, sometimes to dangerously high levels. The wetness comes about from poor exterior drainage, which allows roof runoff to find its way into the basement.³ Regrading the exterior around the building to lead water away from it, and extending the downspouts (preferably underground) to discharge points ten feet or more away from the building⁴ are important first steps. Curtain dams of geotextile fabric, bentonite, or blue clay, extending beneath the surface of the ground out and down from the building wall may also be indicated.

Even with good drainage, however, moisture will continue to enter the basement and cause dampness. Since dampness is conducive to wood rot,⁵ it must be dealt with. The first step is to lay a vapor-retarding membrane over the basement floor, and protect it with several inches of pea gravel. Even with the reduction in vapor transfer that this membrane will provide, the basement will continue to be damp. Simple ventilating with outdoor air will help,⁶ so long as the dew point of the outdoor air is well above the ambient temperature in the basement.

Since the basement is damp year-round, however, and ventilation can not always be used, either because of a dew-point or a temperature problem, a mechanical approach that was developed at the Shelburne Museum appears promising:⁷ When the basement temperature

- 1) We recommend pruning to leave two to three feet between shrubbery and the building, and six to eight feet horizontally and ten to twelve feet vertically between overhanging trees and the building. This pruning will be a periodic maintenance item; plants do grow.
- 2) An excellent discussion of the typical period landscape around New England farmsteads, copiously illustrated, is contained in Thomas Hubka, **Big House, Little House, Back House, Barn**. Hanover: The University Press of New England, 1984.
- 3) It was raining during my visit, and I noted water ponding against the base of the building beneath the downspouts and where the piazza meets the ell. Within the basement there was evidence in the dirt floor of small watercourses.
- 4) Where the slope of the land allows it, this discharge can be to daylight. Otherwise, either drywells or underground conductors to daylight will be required.
- 5) Wood rot is almost without question the reason for the major reconstruction of the first floor structure around 1960.
- 6) This is strictly a warm-weather approach. Introducing significant quantities of cold outside air into the basement during the heating season is unwise.
- 7) See Kirschner, Richard L., **A PRACTICAL APPROACH TO ENVIRONMENTAL REQUIREMENTS FOR COLLECTIONS IN HISTORIC BUILDINGS**, in the *Journal of the American Institute for Conservation* # 31(1992), pp. 65-76. Banwell, White, Arnold,

is high enough (about 65°F or higher), mechanical dehumidification is used. At cooler times of year, heat—controlled by humidistats, rather than thermostats—is introduced to reduce the relative humidity.¹

Present-day codes frown on the steep stairs and inadequate exits that this building has. That said, alternative fire safety can be provided by a system of detectors and alarms. The failure of the stairs to meet modern codes should be an item that is negotiable with the building department.²

All things considered, we found the main house to be in quite good condition for a long-undermaintained antique building. The exterior envelope and trim are in need of attention, as are interior cosmetics, but the overall fabric of the building appeared generally sound.³

The Ell and the Stable

Our evaluation of the ell and stable were hampered by inclement weather, which made it unfeasible to get access to the understory. Based on our observations of other similar buildings, and our observations of conditions in the house basement, we expect that these spaces are damp. Heating or mechanical dehumidification do not appear feasible for use

Hemberger & Partners are familiar with this approach from other historic-building work which they have undertaken.

- 1) It is beyond the scope of this report to describe this phenomenon in detail, but suffice it to say that relative humidity represents the ratio of how much water vapor is in a volume of air to how much vapor that air can theoretically hold. For a given quantity of water vapor in a volume of air, the cooler the air is, the less moisture it can hold, and *the higher the relative humidity*. Similarly, increasing the temperature of a space can successfully reduce the relative humidity.
- 2) A great aid to negotiating such issues is a determination of eligibility for (or better, listing in) the National Register of Historic Places, which indicates beyond argument that the property in question meets rigorous criteria for having historical value. Most building codes provide for alternatives to literal compliance with their provisions for achieving safety of life and property in the case of buildings found by an appropriate governmental agency to be historical. Article 513.0 of the BOCA Code, for instance, provides that the “provisions of [that] code... shall not be mandatory for existing buildings... identified and classified by the state or local government authority as historic...”

The New Hampshire Division of Historical Resources is the agency to contact about listing in the Register. The nomination process has become somewhat daunting; for this reason the Division has developed a less intimidating procedure for determining whether a property is eligible for listing, which triggers many of the protections of listing itself. Copies of the property survey forms used in determining eligibility are available from Christine Fonda at the N.H.D.H.R., telephone 271 3483.

Much of the historical information needed to complete these forms is available in the Kari Ann Federer thesis of 1987; if N.H.D.H.R. does not already have a copy in its files, it would be appropriate to provide them with a copy of Part One and the first chapter of Part Two of that document, plus the drawn illustrations.

- 3) A final recommendation is that a periodic maintenance plan be developed for the property, to provide an “institutional memory” of the work needing to be done over time, and when it should be undertaken. Periodic maintenance includes everything from trash removal to tree pruning, exterior painting, re-roofing, and heating-plant replacement.

here, leaving vapor-retarder membranes, ventilation, and exterior grading as the essential components of a moisture-control system.

The shed is definitely in superior condition to the stable. Obvious deterioration in the sills is particularly evident at the drive door in the east elevation; it is likely to extend elsewhere.

The ell gives every appearance of having been built in one stage as a carefully thought-out service structure, and to be basically in stable condition. The exterior needs conservation and repair, with particular emphasis on doors, windows, sash, and eaves. The finished space at the north end of the ell is perhaps unfortunate; it is extremely expedient. Since the deed has been done, however, this would be a good area in which to consider a site administration office, or other similar use that would be less appropriate to house in the more intact portions of the complex.

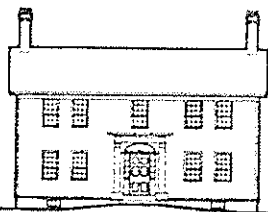
The stable is an intriguing structure that is rendered more interesting and significant by the survival of the wooden cow stanchions. The parlous condition of the south wall and the extensive added stabilization make repairing this structure a challenge to be undertaken only after careful thought. Great care should be taken to preserve as much of its existing character as possible, including the cow tie-up area and the large workbench in the northwest corner.

Structural deficiencies have been addressed with temporary stabilization, which appears to be serving its intended purpose. A careful conservation and repair effort is needed in conjunction with rebuilding the west wall of the stable. If necessary, there is no preservation reason not to add new elements (this appears particularly appropriate where the temporary post was added at the joint between ell and stable), so long as the added elements do not attempt to pretend that they have always been there.

We are not troubled by the idea of discreetly introducing new structural elements within the existing interior; the temporary post at the joint between the stable and the ell is a case in point; it is needed, it is in a location where one would *expect* there to be a structural element, and by not pretending to have been there since the stable was built, allows the history of the buildings to be read by anyone who wishes to take the trouble. We have no doubt that similar permanent solutions to the need for additional central support to the roof can be developed to replace the temporary stabilization in those locations.

The stable and the ell together have tremendous presence and texture. Their very interior roughness and funkiness is what makes them feel so genuine. In making repairs to these buildings, great care must be taken not to "pretty them up." Their circumstantial and utilitarian nature are a large part of their significance as survivals from a time when this sort of small agricultural complex was common throughout New Hampshire.

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June 13, 1995

Field notes

Wagon Hill Farm, Durham NH

The following field notes were taken during a several-hour visit to Wagon Hill Farm on June 13, 1995. They are based on visual examination; no destructive or instrumented investigation was undertaken. The assessor is a skilled and experienced observer, in practice for over twenty-three years, and highly familiar with eighteenth and early nineteenth-century seacoast New Hampshire building. Nevertheless, no warranty can be made that the conditions noted represent all conditions present in the building, that they have always been present, or that conditions will be the same upon subsequent examination.

HOUSE

EXTERIOR

General

- First and second story sash have been replaced with vinyl windows since 1987, and the sash lost. Based on the Federer thesis, the lost sash appear to have been original. This was a serious (and probably avoidable) loss.

East

- The composition of this elevation is approximately symmetrical, with a central entrance door flanked by a window in each story.
- The basement is dressed granite.
- Clapboard siding shows a subtle grading, with the exposure to weather increasing from base to attic.
- The majority of the clapboards appear to be early or original in the first and second stories; from that, it is safe to suggest that the gable clapboards are probably original, as well¹.
- Paint is in very poor condition.
- It is highly desirable to save as much of the existing historical clapboarding as possible, in order not to erode further the building's fabric. This appears to be technically feasible, although the poor paint has allowed an unfortunate amount of weathering to occur.
- Trim is a combination of Federal and Greek revival elements. Corner trim is typical Greek Revival work, including the abacus². From there up, the moldings appear to be

-
- 1) Clapboards in the first and second stories are skive-jointed (their ends are beveled and overlapped), while those in the gable are butt-jointed. This is consistent with the history of the house, and suggests that the roof was not reconstructed until after 1830.
 - 2) This is the lowest horizontal band at the top of the corner trim. In more fully-developed examples of the style, it is a molding; here, it is simply a beveled piece of plain wood. Such simplification is characteristic of the exterior "moldings" of rural Greek Revival work.

based on Roman precedents, rather than Greek, although the massiveness of, particularly, the capital molding, is more in keeping with the Greek Revival than with the lightness of typical Federal work.

- The sash have been replaced in all first and second story windows in this façade.
- The windows are puzzling: Those to the north of this façade are embellished with Federal band moldings, which stand proud of the clapboards. The south windows, however, and the attic windows, are trimmed with plain boards, which stand more or less flush with the outer edges of the clapboards.
- The doorway appears to be a late nineteenth-century reworking of whatever had existed there previously³.
- The plants growing against the building should be removed.

North

- This façade is composed in the typical five-bay form, with pairs of windows in each story flanking a central door in the first story, and a window in the second.
- The basement, stoop, and step are all dressed granite blocks.
- Clapboards are similar, and in similar condition, to those of the east elevation.
- Chimneys need pointing, but otherwise appear unremarkable.
- Roofing is interlocking square asphalt shingles, at the end of their useful life and in need of replacement⁴.
- The frontispiece lies in the main stream of Seacoast New Hampshire Federal work. It needs major conservation work; in particular, the pilaster bases have deteriorated, and the soffit of the arch over the door is losing material.
- It is interesting that although the corners of the house were modernized in the Greek Revival style, the frontispiece was left in its original, Federal, form. Typically, the frontispiece is one of the first elements to be modernized⁵.
- At the top of the wall, the soffit (eaves overhang) is consistent with the period of the house. There is no bed molding between the soffit and the house fascia, which appears to be a replacement.
- There is a galvanized steel gutter.
- At the northwest corner, water discharged from the downspout was pooling against the side of the house. Minor regrading around the building perimeter to eliminate opportunities for water to pond this way, and extending downspouts horizontally four to six feet from the building⁶, would significantly reduce the amount of water entering the basement.
- The lawn in front of the house is terraced down. This feature is probably early, and worth preserving as the grade is adjusted to improve drainage around the house.
- The overgrown yew bushes flanking the front door should be removed.

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- 3) Without destructive investigation, it is not possible to say definitively whether this door location is original or a later modification. Side entries are not uncommon between the chimney and the end wall in eighteenth and early nineteenth-century Seacoast houses.
 - 4) We did not, however, notice any frank problems with leaks in the interior of the house.
 - 5) A possible explanation may be that this entrance had already ceased to serve any significant purpose by the time of the Greek Revival changes, and was simply ignored. But if so, why change the corner trim?
 - 6) Or better, taking their discharge underground to daylight well away from the building where possible, and to new drywells where not.

- The lilac bush at the northwest corner of the house should be pruned to provide a clear three-foot space between the bush and the house⁷.
- The pines north and east of the house are not an appropriate part of the historical landscape of this property⁸. Serious consideration should be given to their removal.

West

- This area was not inspected as closely as the east and north sides, due to inclement weather.
- Clapboards appear similar to those on the east end of the house.
- Attic windows have plain trim, as does the south second-story window. The south first-story window is a casement, probably installed when the kitchen behind it was reworked in the 1960s.
- The plants growing against the building should be removed.

South

- This façade appears to have been substantially refinished some time in the nineteenth century. Door and window trim is plain, the clapboard coursing is not graded, and there is a piazza which stylistically appears to date around the time of the Civil War, plus or minus ten years.
- Chimneys need pointing, but otherwise appear unremarkable.
- Roofing is interlocking square asphalt shingles, at the end of their useful life and in need of replacement.
- There is a galvanized steel gutter at the house eaves. The piazza lacks a gutter.
- Water dripping from the piazza roof ponds at the joint between it and the ell. This again speaks of a serious drainage problem. We recommend local regrading and providing a gutter⁹ along the porch eaves, with a downspout at the southeast corner draining to an underground drywell.
- The piazza retains against the ell one apparently complete column. The decorative lower work on the other columns has deteriorated and been replaced with some rather unattractive circumstantial-appearing work.
- The piazza floor and lattice enclosure have been replaced quite recently.
- Paint finishes are no better than fair at best.

INTERIOR

Basement

- The basement looks wet, feels wet, smells wet, and is wet.
- Bad exterior drainage is allowing a lot of water to flow into this basement.
- The walls are rubble stone, and the floor, dirt, except in the northeast corner, where it is brick set in earth.
- The basement has been divided with brick walls into four parts: The northeast corner, the northwest corner, the southeast corner, and an l-shaped space extending from the southwest corner up the center of the house to the north wall.
- The brick enclosure walls have been breached to accommodate heating ducts.

7) Trees overhand and otherwise encroach upon the house in several locations. A general rule of thumb calls for pruning them back six feet horizontally and ten to twelve feet vertically from the nearest part of the house.

8) BIG HOUSE, LITTLE HOUSE, BACK HOUSE, BARN, by Thomas Hubka, contains a great deal of useful information about and many photographs of nineteenth-century agricultural/domestic landscapes.

9) Half-round galvanized metal, not pseudo-Colonial aluminum!

- The first floor has been completely replaced in the southwest quadrant. Actually, the floor framing and deck have been replaced to the front chimney girt. The subfloor is now plywood in that area.
- The chimneys are supported on barrel-vaulted brick bases. The south end of the west vault has been blocked with brick infill.
- An oil-fired warm-air furnace and a domestic water heater are located in the northwest space, venting into the west chimney.
- There is a lot of evidence of water flowing across the floor, particularly from northwest to southeast around the furnace.
- Considerable rising-damp brick damage¹⁰ is evident in the enclosing walls; little is evident in the west chimney base. The inside of the west barrel vault appears unremarkable.
- East of that chimney base, the wall shows extensive rising-damp damage perhaps a dozen courses up from the floor. The north-south wall shows comparably severe damage extending several courses higher. These walls are not yet in crisis, but they will be if remedial steps are not taken. High priority should be given to providing support for the framing above on an orderly basis, so it will not have to be done in response to a major failure¹¹
- The north wall in this area is disorderly. There has been minor movement, but it appears to have been within the range of what is to be expected in a wall of this age. There is no indication of past or incipient failure. There is extensive evidence of water penetration; functioning gutters and proper grading to carry water away from the building are necessary preventives.
- The north part of the central space appears similar in condition to the northwest space.
- The east wall contains an early window, which may be used as a guide when the sash in the windows above are restored.
- The northeast space is entered through a complete doorway, including a doorsill.
- The walls of this space are brick-finished, as is the floor. The ceiling is finished with plaster on split-board lath, appropriate to the period of the house, and in dilapidated condition. This degree of finish indicates that this space had a particular purpose; in view of the vermin-proofing effect of the finish, it is tempting to speculate that it was intended for the storage of edibles. Further research is indicated.
- The brick in the northeast space does not appear to be suffering as much from the effects of rising damp as the brick of the other enclosure walls, suggesting that it may have initially been of a higher quality, as was the brick of the chimney base.
- Continuing to the rear on the east, the southeast space is entered through a doorway with a door¹². The oil tank is located in this space, which has a cement-wash floor, and at one time appears to have served as a coal bin.
- Slightly more deterioration is evident in the vault of the east chimney base than in the west, but nothing that should present a cause for concern.

10) Rising-damp damage: Ground moisture, which is mildly acidic, moves into the brick by capillary action, and attacks the brick. Typically, the lower the temperature at which the brick was fired (and the softer the brick), the more it is susceptible to this form of deterioration.

11) Adequate repair can be performed either by cutting out the deteriorated brick and patching in new units or by installing steel pipe columns on two-foot-square by one-foot-deep footings. In both cases, it is important to provide adequate temporary support to the work above to avoid failure.

12) How long that particular door has been in that doorway is an open question. The presence of a log doorsill and the remains of a strap hinge nailed to the south jamb indicate that it is not original to this location.

- Floor joists are a combination of barked logs and hewn members in the southeast space. The exterior wall is rubble stone; what is visible does not appear particularly remarkable.
- Between the chimney base and the east wall of the house is a space roofed with a half vault which bears on a north-south member that appears originally to have run along the original line of the passage wall above. There is ample evidence of water penetration through the wall, but the wall itself appears relatively unremarkable.
- Humidity is a serious issue in this basement. There was not sufficient time to do instrumented tests, but we have little fear that when they are done, they will disclose dangerous levels of both atmospheric humidity, and water content within wood members. Strategies for dehumidifying the basement are a critical need.
- A door to the exterior leads out the south corner of the west wall, more or less at grade.

First story

• General

- This appears to be a turn of the nineteenth century house, basically double-file in plan, but unusual in plan, because the front stair rises in two more-or-less equal runs with an intermediate landing, but without the usual response in the rear.
- The southeast corner of the house shows extensive signs of reworking in both stories, beginning at the front face of the chimney: The opening from the northeast first-story room has been enlarged, as is obvious from the evidence in the floor and lintel. From there back in the first story, the trim is typical generic Greek Revival, with symmetrically-molded architraves and blocks enriched with paterae at the corners.
- In the first-story rear, the two cooking fireplaces do indeed appear contemporaneous and original, suggesting that the house was originally intended to be used by two different groups of occupants.
- The space immediately behind the front entry has been taken over for use as a bathroom. Behind that is a rear entry, with enclosed stairs to the second story and basement. The woodwork in the rear entry is all plain, and applied over the plaster; it appears that this space represents a significant reworking.
- It appears that the functional front of the house was moved to face the barnyard, probably about the time that the piazza was added (middle to third quarter of the nineteenth century).
- General research question: Why has all the interior trim in the southeast quadrant of the house (and only that trim) been modernized to generic Greek Revival? Bear in mind that the second-story spaces that have been so treated are all *secondary*¹³, even if the a case can be made that the first-story spaces are not.
- Most of the walls in this house are papered, so it was not possible to see the plaster beneath. The paper does not appear to have been recently applied. That fact, coupled with the lack of evident tears or distortions in the wallpaper, suggests that the house has not been experiencing any recent significant structural movement.
- **North entry and stairhall**
 - This space appears to date substantially from the period of the house (The ceiling has been replaced, and finished with later twentieth-century sanded paint).
 - There is a single baseboard, without the applied shoe that is evident throughout much of the house, but which stands proud of the plaster. On closer examination, it appears to have been overlaid on an earlier base which lies flush with the plaster.

13) Two very small rooms (one unheated), and the back hall. The three primary chambers all retain their Federal trim.

- Doors and doorways are appropriate to the period of the house¹⁴.
- Aside from a crack in one of the door panels and some damage to the glass in the fanlight over the front door, the interior of the frontispiece does not appear remarkable.
- **Northeast room**
 - This space retains most of its early trim.
 - The existing (replacement) windows have six-over-six sash. The window proportions indicate that the original sash was nine-over-six. The difference is visually significant, inside and out. If the building is to be restored, the earlier sash configuration should be re-established.
 - The ceiling has been replaced, and appears similar to that in the entrance hall.
 - There is a double baseboard. The shoe is a later addition; the main base lies flush with the plaster.
 - The chimney piece is of the typical architrave-with-frieze-and-mantel shelf form, with the ends of the frieze worked in an ogee curve¹⁵. The shelf appears to be an integral part of the piece, in contrast to what was suggested in the 1987 Federer thesis¹⁶.
 - The closet to the right of the fireplace appears original. It has been blocked down somewhat, apparently to accommodate a utility riser.
 - The opening to the left of the fireplace was greatly enlarged subsequent to the house's construction. Evidence of the early door survives in the door sill and a joint in the lintel trim.
 - There is evidence of what appears to be a serious leak at the top of the wall above the fireplace. In view of the absence of corresponding signs of damage in the wall above, however, it may be that this is an artifact of a water spill in the chamber above¹⁷.
- **East entry**
 - The trim changes in this space from the Federal work of most of the house to the vernacular Greek Revival which characterized the entire southeast quadrant of the house, upstairs and down. The baseboard is typical Victorian work: high, with a cap molding, applied proud of the plaster.
 - The exterior door is a typical late nineteenth, early twentieth century element.
 - The southwest corner has been furred out (with sheetrock) to enclose heating duct-work.
- **Southeast room**
 - This room is completely trimmed in vernacular Greek Revival, except for the fireplace, whose trim appears to be of recent twentieth-century origin, perhaps contemporary with the reworking of the southwest of the house.

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- 14) We wonder why, when the roof was raised and the Greek Revival corner trim added, the front entrance was not replaced with a fashionable Greek Revival frontispiece with sidelights. Given the importance of the frontispiece in establishing the style of a building, and the owners' manifest desire to appear up-to-date (i.e., the Greek Revival corner trim), this is a puzzling omission.
 - 15) Although found elsewhere in New England, this form is particularly characteristic of turn-of-the-century Seacoast New Hampshire.
 - 16) This form almost certainly is connected to the common Federal modernization of pre-Revolutionary fireplace surrounds: The earlier form was typically an architrave (frame) around the fireplace opening, which it was easy to update by applying a frieze board and mantel shelf above it. That said, Asher Benjamin's AMERICAN BUILDER'S COMPANION (1806 and later) shows this form as one of a sheet of chimney breast designs.
 - 17) Or that the chamber wall and ceiling have been repaired. We note that it is *extremely* uncommon to see such a repair made in a chamber and not made in the (more important and public) space below.

- The floor shows signs of having been replaced; the floorboards in this space are significantly narrower than those elsewhere in the house.
- The cooking fireplace and oven appear appropriate to the turn of the nineteenth century. The hearth is a granite slab¹⁸. The brick beneath the oven continues to the floor with opening into the void that likely exists beneath the oven floor.
- A furred-out shaft in the southeast corner of this space, similar to the one in the east entry, serves an uncertain purpose.
- The ceiling in this space has been replaced, as is the case with most of the ceilings in this story.
- **South entry and stairhall**
 - The woodwork here is plain, and stands proud of the plaster, suggesting a twentieth-century or late nineteenth-century origin.
 - The doors to the stairs to the second story and basement are early; the door to the southeast room is late nineteenth century; the doors to the kitchen and exterior appear to date from the kitchen reworking.
 - The remains of a piece of early door casing inside the door to the basement stair suggest that originally there may have been a board wall at this location, which would be consistent with turn-of-the-nineteenth-century practice.
 - The stair to the second story has been completely rebuilt, probably when the kitchen was built in the 1960s, using what appear to be the original wall stringers.
 - With the exception of those stringers, all the work inside the cellar accessway appears to be very recent—light-colored (unoxidized) machine-planed wood, wire nails, and gypsum wallboard.
 - The floor in this area consists of plywood under sheet goods—vinyl or linoleum.
- **Southwest room**
 - This space has been completely worked over to accommodate a post Korean-war kitchen (1976?).
 - The floor is brown sheet goods—linoleum or vinyl; the walls pine boards.
 - The fireplace, which appears similar to the one in the southeast room, survives apparently intact.
- **Center (“dark”) room**
 - This space is a bathroom, with shower.
 - There is abundant mildew on surfaces adjacent to the shower, giving evidence of wholly inadequate ventilation.
 - The door to the kitchen appears to be of the same date as the kitchen work; the door to the left room appears to be of late nineteenth-century origin.
- **Northwest room**
 - This is the most elaborately-finished room in the house. General comments made about the northeast room apply to this space.
 - This room has a wooden cornice. Within the cornice the ceiling has been replaced with the same sand-finished plaster evident throughout the first story.
 - Woodwork appears to be early, and substantially intact.
 - The chimneypiece is composed of pilasters supporting a frieze with expressed pilasters, capped by a mantel shelf. Within that frame a reeded architrave surrounds the brick opening.

Second story

- **General:**

18) Except for this space and the right rear space, all the other fireplace hearths are eight-inch square hearth brick.

- Although the plate is expressed at the top of the wall across the back of the house, in the front it only appears in the stairhall. Examining the post casings in the two front chambers with a raking light did not show any evidence of patching, such as would be evident if the plate had been reworked when the roof was rebuilt, suggesting that either the plate originally was expressed, but that the posts were recased after it was reworked¹⁹, or that it was always suppressed in these two "best" chambers²⁰.
- **Northeast chamber:**
 - This room appears to have substantially original work. There is no frank evidence of alteration to the post casings.
 - There is a sag in the floor, which appears to be more artifact than process.
 - To the left of the fireplace the closet has been substantially done over with sheetrock? Early flooring survives.
 - To the right of the fireplace a door leads to the back hall, which is a confusing space.
- **East intermediate chamber**
 - This space is reached through a doorway that gives every indication of being early. The chimney wall and the wall toward the hall retain Federal detailing. The window wall, however, is trimmed with the Greek Revival work that is typical of the southeast quadrant of the house.
- **Southeast chamber**
 - This very small space appears to be early; the doorway from the hall appears to be of the period of the house.
 - The window trim is the same as in the left intermediate chamber.
 - The ceiling has been lowered, and covered with square acoustical fiber tile.
- **South hall**
 - A closet to the right of the left-hand chimney opens off this space. It appears early. Much of the wood shows hand-planing marks, and the plaster on the chimney wall, which contains evidence of original shelves, appears early or original. There appears to have been a board partition toward the rear of this closet, separating off a small space that opens to the chamber behind the chimney. The existing evidence of shelving in that area shows machine-planing marks, and appears to be of recent origin.
 - The door and trim to that closet appear consistent with the earliest work in the house.
 - The hall extends the width of a door left of the wall below.
 - Despite the odd room arrangement and irregular wall line, this arrangement appears to be early, if not original. Baseboards are recessed into the plaster field throughout, doorsills were all recessed into the floor²¹, and we noted no evidence of alterations in the floor boards²².
 - The rear window matches the other southeast-quadrant work.
 - The space beneath the attic stair is particularly confusing. The board partition to the left of the stair, made of old beaded boards and cleated together with re-used early work, lies a good eight inches off the stair, which itself is board-walled. The floor shoe was laid over a painted part of the floor, leading to the conclusion that this was a later change. The doorway to the passage between the front and rear right-hand chambers is not original, suggesting that the whole construction may have been pulled together to make a closet for those rooms. It is interesting to speculate whether there

19) *Highly unlikely, if only because of the cornice molding in the right front room.*

20) *Almost certainly the case.*

21) *In a manner wholly consistent with the early/original work in the more conventionally-arranged parts of the house.*

22) *The flooring appears similar to that in the remainder of the second story and is continuous throughout, with no evidence of partitions applied over it, or other interruptions to the boards.*

is any relationship between this work and the event that occasioned the Greek Revival interior changes.

- The attic stair enclosure, as we just noted, is problematical. The stair itself is convincing as a piece of early work, probably original.
- **Bathroom**
 - At the rear of the house is a partitioned-off space which contains a bathroom, with unremarkable contemporary finishes.
 - The doorway from the hall appears consistent with early work.
- **Southwest chamber**
 - Window trim is plain and was applied to the face of the wall. Doors and casings appear appropriate to the period of the house.
 - The remainder of the woodwork appears unremarkable and appropriate to the period of the house.
 - The fireplace has been closed and the mantelpiece removed (Evidence is visible under a raking light). The "baseboard" across the face of the fireplace is painted plaster.
 - The closet to the left of the chimney (now a passage) contains early plaster, with evidence of shelving boards. Double baseboards stand proud of the plaster, and appear to be later.
 - The opening from the passage between front and rear chambers to the space under the attic stair gives every indication of being comparatively recent: The threshold arrises are very sharp and unworn, the paint is different, and the trim is plain and stands proud of the plaster on both sides.
 - Where the double baseboard is cut for this opening, the gray paint²³ stops, but a lower layer appears to extend under it, supporting the notion that it is an added piece.
- **Northwest chamber**
 - This space appears generally intact and consistent with the period of the house.
 - The ceiling has been overlaid with square fiber acoustical tile; around its perimeter a shallow wooden cornice is apparent. Further investigation is indicated to confirm its origin²⁴, since the visible part seems to display the fussiness characteristic of turn-of-the-twentieth-century Colonial Revival work.
 - The closet to the right of the fireplace also has an acoustical tile ceiling. It's hard to see much else because of all the objects stored in it.
- **North stairhall**
 - As we've commented elsewhere, this space is a bit unusual in that the stair consists of two approximately equal runs that rise to and from a landing. There is neither connection to the rear of the house at landing level, nor evidence to suggest that there ever was any.
 - The stair newels are baluster-formed, and the handrail passes over their tops. Balusters are simple square sticks. The entire assembly appears consistent with the house's construction date, and is reminiscent of work associated with the Portsmouth joiner-housewright James Nutter.

Attic

- Evidence for the former hipped roof is obvious and irrefutable.
- The roof is approximately 12 pitch, principal rafter and purlin. The purlins are informal, and not always straight. The jointing appears to be scribe-ruled, suggesting an eighteenth-century date. This, plus the roof's division into four bays, rather than the more

23) The topmost layer throughout the house.

24) From what can be seen of it, it does not appear characteristic of Seacoast New Hampshire Federal work. The existence of a similar, but apparently more elaborate, cornice in the room below, however, supports the notion that it is original.

customary and expected five, suggests that the roof frame may have been salvaged from a demolished older building. No evidence was apparent to suggest re-use of any timbers from the original roof.

- The existing roof and floor boards are up-and-down sawn.
- The gable windows are assembled with machine-headed cut nails. Sash are primarily mid-nineteenth century, with some pieces that may be of early twentieth-century origin. All attic sash are in deteriorated condition.
- Cellulose insulation was evident past the floor boards along the eaves.

ELL

EXTERIOR

North

- This elevation is a clapboarded gable end. It appears to be a typical and generally unremarkable example of late nineteenth-century Graeco-Italianate vernacular work.
- The upper-story window appears to be of the period of the ell; the lower-story window is a recent replacement.
- The condition of its paint is poor.

East

- This elevation appears to be substantially in the same form as it was built, with the exception of the window and door at the north end, which are of recent vintage. Without undertaking destructive investigation it is impossible to determine whether the door to the piazza is original or a latter-day change.
- Paint is in poor condition, and missing.
- The drive door rolls to the south inside the building.
- The sill below the drive door shows frank rot and other weather-related deterioration. It is likely that other parts of the east sill, and possibly the joists beneath the lower floor, are deteriorating, as well.
- Roofing is interlocking square asphalt shingles, at the end of their useful life and in need of replacement.
- Plantings are too close to the building, and should be pruned as previously described.

West

- The wall finish is a combination of early clapboards and siding which appears to date from the interior changes.
- Roofing is interlocking square asphalt shingles, at the end of their useful life and in need of replacement.
- Paint is heavily mildewed.
- The rubble stone foundation has been concrete-faced from the north end of the deck south to the stable, suggesting that structural failure in this area was at best imminent at one time. The concrete does not appear remarkable at present.
- Off the finished ell space is a wooden deck, in deteriorating condition, with rot evident in the railing structure. Support appears to be steel pipe columns.
- North of the deck, the berry bushes should be pruned back from the foundation.

INTERIOR

Understory

- The understory was not inspected due to inclement weather.

Main story

- The ell and barn are two separate structures, built at different times. The ell is framed with circular-sawn post-and-beam framing, suggesting a post Civil-War date for this element, which is consistent with the appearance of (particularly) the north exterior.

- Sash muntin profiles are typical of the mid to later nineteenth century, with some later replacements.
- The floor is worn wood, full of character and the signs of decades of hard use. Where it is sound, we recommend retaining it.
- The main story is divided into three distinct parts. The south space is set off by a stair rising west to the upper story and a board wall just south of the drive door. The central space contains a privy on its west wall, which unfortunately was so full of stuff that it was impossible to evaluate it. Just north of the window north of the drive door is a recently-installed partition, north of which is a finished room with kitchen.
- The finished space at the north end is cheaply finished, uninsulated, and heated with electric baseboard. This space is a good candidate for an adaptive re-use, since there is little here to preserve.
- Windows in the finished part of the ell are all of the period of the finish, contemporaneous with the kitchen, or slightly later.
- The central section, from the end wall to the stair to the upper story, appears unremarkable for a utility structure such as this.
- South of the stair, the interior appears unremarkable.
- Double posts and beams, stud mortises in the ell girts, and other evidence confirm that the ell originally stood alone, with an enclosure wall along the present ell-stable joint.

Upper story

- The framing pattern indicates that the ell was constructed in a single build. It appears solid, well-built, and generally unremarkable.
- Diagonal iron-rod tension braces run from the tops of the intermediate posts down to the transverse beams.
- The roof is framed with common rafters, supported on a plate some distance above the floor.
- The north window, which is in poor condition, shows mid nineteenth-century muntin profiles²⁵.
- At the line of the first post south of the house the frame has been reinforced with a truss of 2" lumber nailed to the rafter and underfloor beam, apparently when the lower-story space was finished off. As part of a detailed overall evaluation of the property, a structural engineer experienced in working with timber-framed structures should review this work.
- The second (middle) frame is a kingpost truss, with enlarged rafters and an iron-rod tie from the ridge to the center of the beam below.
- The stair down to the lower story lies just north of the third frame, which is similar to the first one, but has not been reinforced.
- The south end of the ell shows ample evidence of the former enclosure.

STABLE

- Because of the way the complex has grown, with the stable added as a continuing extension of the ell, even though this element is in the worst condition of all, it is highly undesirable from the standpoint of the site's remaining integrity to sacrifice the barn in favor of the ell unless no other possible alternative can be found.

EXTERIOR

East

- This façade is a gable end, with a drive door located north of center.

25) Note, however, that this sash profile continued to be produced for use in utility structures at least to the end of the nineteenth century (Source: Facsimile millwork catalogues in our possession), and so are not useful for "no later than" dating.

- Paint is in poor condition, and missing.
- Rakes have several circumstantial (sheet metal?) patches where they have failed or been opened by vermin.
- The drive door has been reinforced with overlaid members.

South

- This elevation is in very bad shape, and needs major work.
- The siding and trim on this façade is dilapidated.
- There is no paint.
- The lower row of interior cable ties is secured through a pair of four-inch beams attached to the face of the wall.
- The rubble stone foundation extends well outside the line of the wall above, suggesting that a catastrophic failure has occurred.
- Roofing is interlocking square asphalt shingles, at the end of their useful life and in need of replacement.

West

- Due to inclement weather, the west elevation of the stable was not viewed

North

- Siding appears (from the deck off the north end of the ell) to be primarily clapboards of comparatively recent vintage.
- Paint has failed extensively.
- Roofing is interlocking square asphalt shingles, at the end of their useful life and in need of replacement.
- The foundation appears to have been overlaid with concrete, and appears to be in fair condition.

INTERIOR

Understory

- The understory was not entered due to inclement weather.

Main story

- The barn is framed in three bays, east to west.
- At the joint between the stable and the shed, the end wall of the shed was removed, and various bolts and ties used to connect the two structures together.
- There is no indication of there ever having been an early post beneath the first beam west of the entrance.
- A six-by-six post with a cushion between it and the existing work above has recently been installed to support and stabilize the upper story at that point. We concur!
- Upper-story floor framing consists of rather light-appearing joists spaced more than two feet apart, and a single layer of one-inch boards.
- The floor is worn wood, full of character and the signs of decades of hard use. Where it is sound, we recommend retaining it.
- An area of flooring was recently replaced at the drive door.
- Along the north wall is a large workbench, which is clearly a part of the history of this building, and should stay.
- Windows are typical of the ell and stable—small-paned window sash have mid nineteenth-century profiles; large-paned sash appear to date from the early twentieth century.
- A board wall divides the barn into north and south spaces. A sliding door on its south side closes the opening from north to south.
- In the south half there is a cow tie-up with wooden stanchions, which appear to be worthy of preservation. In the southeast corner is a single box stall, presently full of rigid insulation.
- The south area appears originally to have housed horses, either in box or tie stalls.

- Vertical support has been added along the dividing wall: Three six by six or eight posts, two of which lie under the transverse beams, and the third halfway between them. The rest on an eight-by-eight hewn member laid on the floor.
- This area should not be cleaned up and made too pretty. It is quite wonderful as it is.

Upper story

- As with the ell, iron-rod tension braces run down from the posts to the main beams beneath the floor.
- The roof is framed with common rafters resting on plates which, as in the ell, are located several feet above the floor.
- There has obviously been a concern for structural failure, likely related to the deteriorated condition of the south wall structure and the loss of sufficient strength to support the outward force of the rafters. In response, three sets of propping posts and ties have been installed. This work is manifestly temporary. It is acceptable only as a temporary means of stabilization until a more definitive solution is determined and implemented, as soon as possible. Structural engineering consultation is indicated.
- The steel-cable ties run from plate to plate, with secondary lines supporting the west wall a few feet below the plate (where added members reinforce the exterior of the wall. At the north end, the east and central cables are anchored through a 4" x 6" beam installed across several studs. I'm a bit concerned that the west end of that beam appears to be cracking; further investigation is indicated to determine whether that represents an incipient failure.
- Each frame consists of three members rising from an existing member which is itself propped up from below. The central a post rises to support a beams from which prop posts directly support six rafters. Collar ties add stability. On either side of this post, diagonal posts extend to new 4" x 6" purlins placed beneath the rafters²⁶.
- Small-paned window sash have mid nineteenth-century profiles; large-paned sash appear to date from the early twentieth century.
- The west wall is in poor condition. Daylight is particularly visible through this wall.

26) The purlins were placed with their six-inch side against the rafters. It would be preferable—and the purlins would be able to carry a greater load—to set them with their four-inch side in contact with the roof structure.