INTENSIVE (LOCATIONAL) SURVEY
ARCHAEOLOGICAL SITE EXAMINATION
STONEHURST, THE ROBERT TREAT PAINE ESTATE

Waltham, Massachusetts

PRESERVATION PLANNING

ARCHAEOLOGY

ARCHITECTURAL HISTORY

EDUCATION

INTENSIVE (LOCATIONAL) SURVEY
ARCHAEOLOGICAL SITE EXAMINATION
STONEHURST, THE ROBERT TREAT PAINE ESTATE

Waltham, Massachusetts

Kristen Heitert

Submitted to:

Ann Clifford, Curator
Stonehurst, The Robert Treat Paine Estate
100 Robert Treat Paine Drive
Waltham, Massachusetts 02452

Submitted by:

PAL
210 Lonsdale Avenue
Pawtucket, Rhode Island 02860

PAL Report No. 1425

May 2003

PAL Publications

CARTOGRAPHER AND ILLUSTRATOR
Dana M. Richardi

GRAPHIC DESIGN AND PAGE LAYOUT SPECIALISTS
Alytheia M. Laughlin/Gail M. Van Dyke

EDITOR
Ken Alber

PRODUCTION SUPERVISOR
Gail M. Van Dyke

MANAGEMENT ABSTRACT

PAL conducted an intensive (locational) survey and archaeological site examination at Stonehurst, The Robert Treat Paine Estate, in Waltham, Massachusetts. Nineteen 50-x-50-centimeter test pits and two, 1-x-1-meter (m) excavation units (EUs) were excavated along the proposed location of drainage improvements to the property. The test pits were excavated at 5- and 7.5-m intervals along three transects and as one judgmental test pit, and the contiguous EUs were opened in the location of an identified historic period drainage feature (see below). Soils across the project area were extremely altered from historical construction and grading activities at the house and yielded 197 pieces of historic cultural material including construction debris, a ball clay tobacco pipe, and several pieces of creamware, pearlware, whiteware, and ironstone. A capped fieldstone chamber housing a functioning wastewater pipe was identified along the west elevation of the house. The chamber dates to the original construction of the house, circa 1884–1886.

The Stonehurst project area contains no potentially significant prehistoric or historic period archaeological deposits. The identified fieldstone chamber and drainage pipe does not represent an individually significant resource eligible for listing in the National Register of Historic Places, nor does it substantively contribute to the interpretation of the estate. **No additional archaeological or documentary work is recommended for the Stonehurst project area.**

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

CHAPTER ONE

INTRODUCTION

This report presents the results of an intensive (locational) survey and archaeological site examination at Stonehurst, The Robert Treat Paine Estate (Stonehurst), in Waltham, Massachusetts (Figure 1-1, Figure 1-2). Built in 1866 as a summer retreat for Paine and his family, the original Mansard-style house was expanded in 1884 by the famed architect H.H. Richardson. Built in the early modern Shingle-style, the house represents the pinnacle of that architectural movement and encompasses the largest remaining domestic interior designed by Richardson. The surrounding landscape is equally significant as the work of Frederick Law Olmsted, widely acknowledged as the father of American landscape architecture. The property is listed as a National Historic Landmark and is the only house in New England designed by Richardson that is open to the public.

Project Scope and Authority

Proposed project impacts consist of a new underground drainage system and grading in proximity to the main house. The infiltrator downspout drainage system consists of the placement of inlet pipes

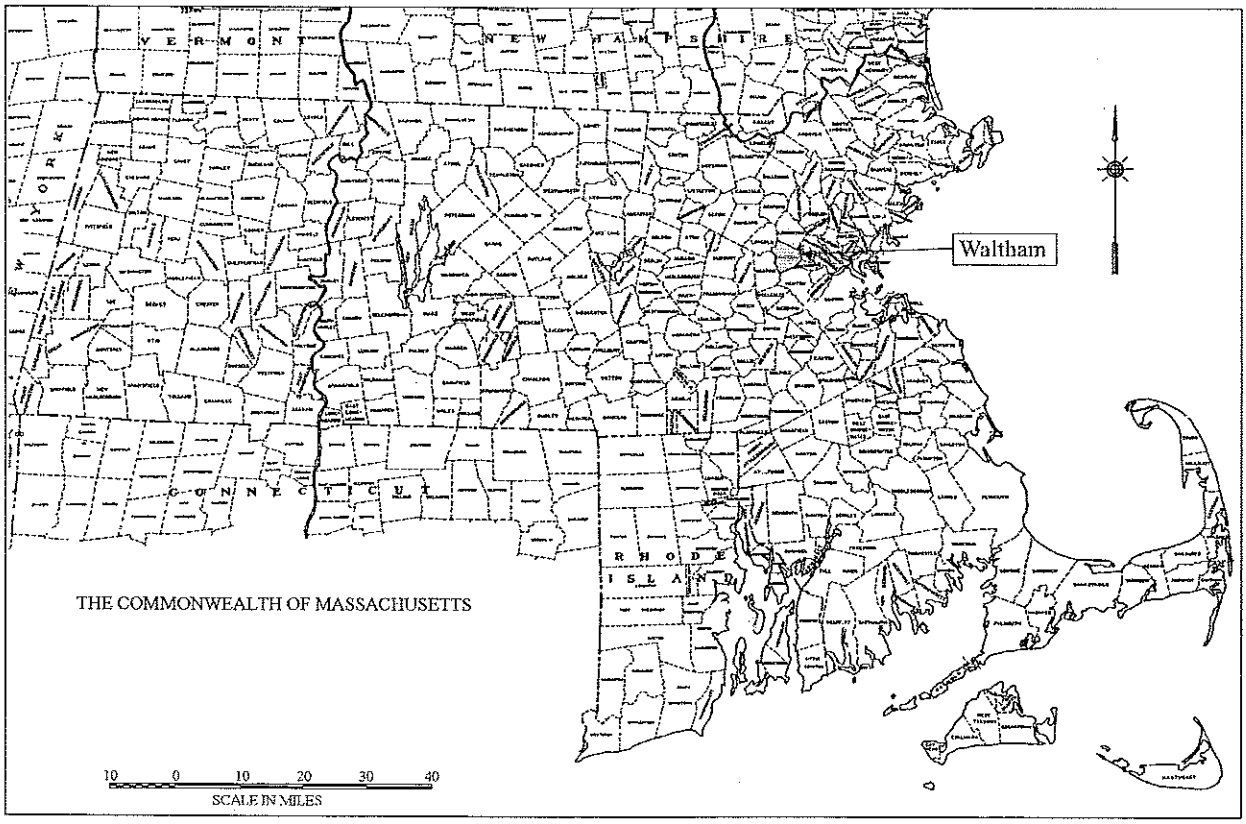

Figure 1-1. Map of Massachusetts showing the location of Waltham.

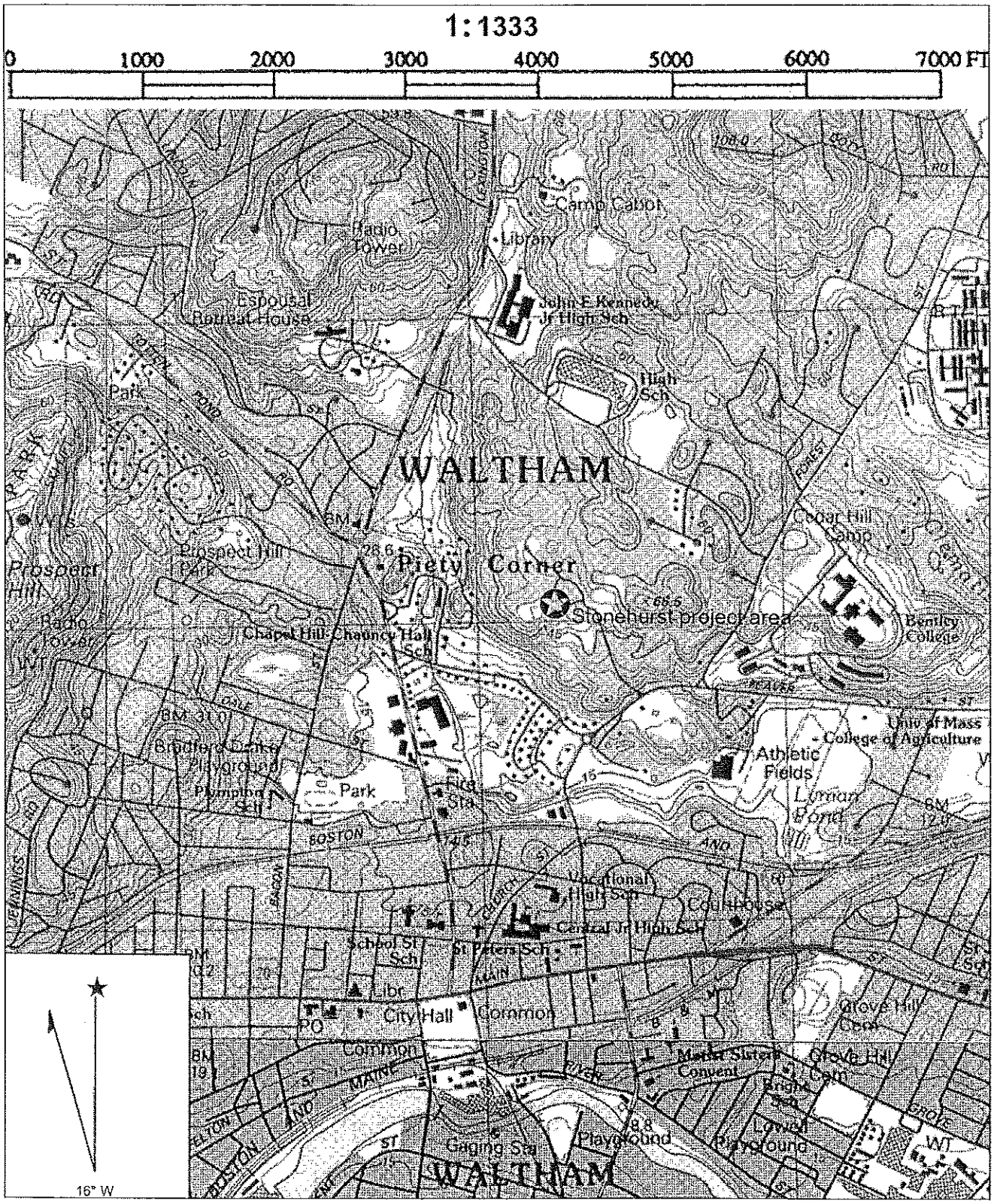

Figure 1-2. Location of Stonehurst, The Robert Treat Paine Estate project area on the Waltham, MA, Lexington USGS quadrangle map, 7.5 minute series.

from gutter downspouts to a high capacity infiltrator chamber. The 16-inch-deep chambers fit in 3-foot (ft) wide trenches; each chamber has an open bottom, hollow interior, and louvered sidewall, with the runoff filtrating into the surrounding soil. The project proponent indicates that there will be one field of "Infiltrator Chambers" (measuring roughly 5-x-7 ft) to the west side of the house, which will be fed by pipes leading from the north and west elevations (roughly 300 linear ft).

The goal of the archaeological survey and site examination was to locate, identify, and evaluate any significant archaeological resources that might be affected by construction activities associated with the new drainage system and grading. The investigations focused on: documenting the historic topography of the property, identifying any belowground features in proximity to the house, determining the presence/absence of potentially important Native American prehistoric and Contact period occupations, and providing the preservation team with data regarding the landscape history to inform and facilitate the preservation of the property.

The Massachusetts Preservation Projects Fund, a federal Save America's Treasures grant, and the City of Waltham, Massachusetts, will provide funding for the construction project. As such, the project falls under the review of Section 106 of the National Historic Preservation Act of 1966, as amended (36 CFR 800). This report contains the research framework that guided the archaeological investigations, discussions of the methods used during fieldwork and laboratory analysis, and an assessment of the potential significance of the identified archaeological deposits.

Project Personnel

PAL conducted fieldwork at Stonehurst, The Robert Treat Paine Estate, in August 2002, under permit number 2191, issued by the Massachusetts Historical Commission (MHC). PAL staff involved in the intensive survey and site examination investigations included Suzanne Cherau (principal investigator), Kristen Heitert (project archaeologist), and Michael Duffin, Jessi Halligan, and Greg Laskoski (project assistants). All recovered cultural materials were processed in the PAL laboratory by Timothy Ives (laboratory technician) under the direction and supervision of Tim Kardatzke (laboratory supervisor).

Disposition of Project Materials

All project information (field recording forms, maps, photographs) is currently on file at the PAL offices at 210 Lonsdale Avenue, Pawtucket, Rhode Island. PAL serves as a temporary curation facility pending approval by the MHC for the curation of artifacts, samples, and associated records at Stonehurst.

CHAPTER TWO

RESEARCH DESIGN AND FIELDWORK METHODOLOGIES

Two separate but interrelated fieldwork methodologies were employed at the Stonehurst project area. The goal of the first methodology, the intensive (locational) archaeological survey, was to locate and identify any significant prehistoric and historic cultural resources that might be impacted by project construction activities.

Site examination investigations followed the intensive survey work in areas where artifact concentrations and/or features were identified. The goal of the site examination was to define the spatial limits of the identified site as a means to make preliminary determinations concerning site integrity and eligibility for the National Register of Historic Places (NRHP). Identified cultural resources were evaluated in terms of their status as contributing elements to the Stonehurst Estate, designated a National Historic Landmark, and/or in terms of their potential to address substantive prehistoric or historic research questions.

To accomplish this objective, three research strategies were used:

- archival research, including a review of literature and maps, and local informant interviews;
- field investigations, consisting of a walkover and subsurface testing; and
- laboratory processing and analyses of cultural materials.

The archival research and walkover survey provided the information needed to stratify the project area into zones of expected archaeological sensitivity. Archaeological sensitivity is defined as the likelihood for prehistoric and historic period resources to be present and is based on various categories of information. These categories include:

- known locational, functional, and temporal characteristics of identified prehistoric and historic sites in the project area or vicinity; and
- project-specific, local and regional environmental data in conjunction with project-area conditions observed during the walkover.

Subsurface testing was conducted in areas ranked as having a high or moderate potential for containing intact archaeological deposits, and where construction impacts will occur. All recovered cultural materials were processed in the laboratory and analyzed to interpret the nature of past human activities they represent. This interpretation enables an evaluation of the potential significance of the recovered cultural resources and their eligibility for listing in the NRHP.

This report section describes the methods used during each of the background research and field activities. The results of the research and field investigations are discussed and evaluated in Chapters 6 and 7.

Archaeological Significance and Historic Contexts

The different phases of archaeological investigation (reconnaissance, intensive survey, site examination, and data recovery) reflect preservation planning standards for the identification, evaluation, registration, and treatment of cultural resources (National Park Service [NPS] 1983). This planning structure pivots around the eligibility of cultural resources for inclusion in the NRHP. The National Register is the official federal list of properties studied and found worthy of preservation. The results of an intensive (locational) survey and site examination are used to make recommendations about the significance and eligibility of any resource.

The standards for determining the significance of cultural resources, a task required of federal agencies, are the guidelines provided by the NPS (36 CFR 60): the National Register Criteria for Evaluation. The following four criteria are given for determining if the "quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling and association" (36 CFR 60):

A. that are associated with events that have made a significant contribution to the broad patterns of our history; or

B. that are associated with the lives of persons significant in our past; or

C. that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

D. that have yielded, or may be likely to yield, information important to prehistory or history.

Most archaeological sites listed in the NRHP have been determined eligible under criterion A or D. For eligibility under these criteria, a number of issues must be addressed, including the kind of data contained in the site, the relative importance of research topics suggested by the data, whether these data are unique or redundant, and the current state of knowledge relating to the research topic(s) (McManamon 1990:14–15). A defensible argument must establish that a site "has important legitimate associations and/or information value based upon existing knowledge and interpretations that have been made, evaluated, and accepted" (McManamon 1990:15).

The criteria used to evaluate the significance of cultural resources are applied in relation to the historical contexts of the resources. A historical context is defined as follows:

> At minimum, a historical context is a body of information about past events and historic processes organized by theme, place, and time. In a broader sense, an historic context is a unit of organized information about our prehistory and history according to the stages of development occurring at various times and places (NPS 1985).

Historical contexts provide an organizational format that groups information about related historical properties based on a theme, geographic limits, and chronological periods. A historical context may be developed for Native American, historic, and/or modern cultural resources. Each historical context is related to the developmental history of an area, region, or theme (e.g., agriculture, transportation, waterpower), and identifies the significant patterns that particular resource can represent.

Historical contexts are developed by:

- identifying the concept, time period, and geographic limits for the context;
- collecting and assessing existing information about these limits;
- identifying locational patterns and current conditions of the associated property types;
- synthesizing the information in a written narrative; and
- identifying information needs.

"Property types" are groupings of individual sites or properties based on common physical and associative characteristics. They serve to link the concepts presented in the historical contexts with properties illustrating those ideas (NPS 1983:44719).

A summary of an area's history can be developed by a set of historical contexts. This formulation of contexts is a logical first step in the design of any archaeological survey. It is also crucial to the evaluation of individual properties in the absence of a comprehensive survey of a region (NPS 1983:9). The result is an approach that structures information collection and analyses. This approach further ties work tasks to the types and levels of information required to identify and evaluate potentially important cultural resources.

The following general research contexts have been developed to organize the data relating to the Native American and Euro-American cultural resources identified within the proposed project area:

- Native American land use and settlement in the Charles River drainage, ca. 12,500 to 300 years before present (B.P.); and
- historic land use and settlement patterns of Waltham, circa (ca.) A.D. 1650 to present.

In addition, a series of project-specific research questions was formulated as part of the site examination methodology to assess the potential National Register eligibility of the identified archaeological deposits at Stonehurst. These research questions included:

Research Question 1: The Spatial Arrangement of Ornamental and Utilitarian Landscape Features

Because most of the proposed impact area lies within a less visible portion of the estate grounds and in proximity to the kitchen ell, remnant landscape features in this area have a strong potential to be utilitarian (middens, kitchen gardens, informal pathways) rather than strictly ornamental in nature. The spatial, temporal and functional delineation of these types of features may illuminate how non-ornamental aspects of the property were incorporated (or not incorporated) within the prevailing Olmstedian, Gardenesque, and Simplified landscape periods.

Research Question 2: Different Philosophies and Changing Tastes

The relationship between a designed landscape and those who commission its design can be extremely complex and often speaks to ideas of power, class, taste, and ideology. For example, excavations at the Baroque eighteenth-century "power" gardens in Annapolis, Maryland, revealed a deliberate use of outdated landscape design theories to establish a perception of prestige and authority among the city's elite (Kryder-Reid 1994; Leone et al. 1989). These gardens were considered, by their owners, to reflect their elevated status even when, in some instances, the base of that status was beginning to crumble in the face of popular revolutionary discontent.

The recovery and comparison of cultural material at Stonehurst may provide insight into food and decorative preferences within the Paine family over time and how or if those preferences were reflective of the larger designed landscape around them. For example, does the rejection of Victorian excess and rigid class distinctions implicit in Olmsted's landscape reflect the Paine Sr. family philosophy as expressed in other aspects of its material life, perhaps in the form of less fussy and elaborate tableware? Was the shift toward a more formalized and rigid Gardenesque design philosophy as espoused by Paine Jr. similarly marked in other aspects of his family's material life? The identification of stratified domestic features such as a kitchen midden or buried trash pit may provide insight into these questions.

The recovery of domestic features within the project impact area also may provide information about the cultural material of the private versus public spheres of the household and how space was differentially arranged between the two areas. Stonehurst is a huge home and was staffed by a large population of hired help, likely from the urban, industrialized center of Waltham. The identification and spatial arrangement of activity areas near the kitchen ell (middens, break areas, informal paths) where a great deal of private, domestic activity took place, can suggest how the "non-elite" members of the Paine household structured their work spaces and how that structure conformed to prevailing "elite" ideas of order and aesthetics. Perceptions of social space between different classes has been examined within the context of southern plantation culture (Upton 1990), and may be evident in a limited way through the recovery of discrete domestic features within the northern portion of the project area.

Research Question 3: The Landscape Legacy of Stonehurst

As discussed above, the landscape history of Stonehurst, from its earliest "Olmstedian" incarnation through to its current simplified landscape, is well documented on both an informal basis (family reminiscences, personal letters and photos) and formal basis (landscape master plans, commissioned

house histories). Despite this degree of documentation, there is a strong potential for the survival of previously undocumented landscape design features. The recovery and interpretation of these features has the potential to guide future landscape restoration at Stonehurst by providing information about the layout of ornamental plantings, the techniques employed in bed construction and preparation, and even the various species planted within specific beds (Berg 1999).

The general and project-specific historical contexts, along with expected property types and locational patterns, are discussed in detail in Chapters 4 and 5. The potential research value of the known and expected prehistoric and historic archaeological resources identified within the Stonehurst project area is evaluated in terms of these contexts. This evaluation, along with management recommendations, is presented in Chapter 7.

Background Research

Finding the information necessary to develop a historical context and assess the potential for archaeological resources begins with the examination of primary and secondary documentary sources. These sources include written and cartographic documents relating both to past and present environmental conditions and to prehistoric and historic period resources in or close to the project area. This background information assists in the formulation of predictive models or statements about the project area, and is an integral part of an intensive (locational) survey. Variables within each category of background data are used to define the overall archaeological and historical context of the project area.

The following sources were reviewed as part of the background research for the proposed Stonehurst project area:

State Site Files, Artifact Collection Reports, and Town Reconnaissance Surveys

The state site files at the MHC were reviewed to locate any known prehistoric or historic period sites in or close to the project area. MHC inventories include cultural resources listed or eligible for listing in the NRHP. The National Register nomination form for the estate also was consulted for detailed historical and architectural information about the house itself, and the MHC town reconnaissance surveys were reviewed for summary data about the history of Waltham (MHC 1980a, 1980b).

Cultural Resource Management Reports

Cultural resource management (CRM) reports conducted in the project vicinity were reviewed. These reports generally were restricted to historic/architectural data about the adjacent Lyman Estate, the family home of Lydia Paine, wife of Robert Treat Paine, including *An Archaeological Site Examination of the Peach Wall at the Vale, the Lyman Estate, Waltham, Massachusetts* (Pinello 1999); and, *An Archaeological Site Examination for the Historic Plant Nursery at the Vale, the Lyman Estate, Waltham, Massachusetts* (Pinello and White 2000). In addition, Neil DePaoli's report documenting the results of a public archaeology program conducted at Stonehurst in the former location of the estate barn was consulted to provide information about expected historic cultural resources on the property (DePaoli 1991).

Histories and Maps

General histories and historical maps and atlases were examined to assess changes in land use, to locate any documented structures or historic sites, and to trace the development of transportation networks, an important variable in the location of historic sites. Secondary historical sources and cartographic references included: *History of Middlesex County, Massachusetts* (Hurd 1890); *Crossroads on the Charles, A History of Watertown, Massachusetts* (Hodges 1980); *Atlas of Middlesex County* (Beers 1874, 1875); and, *Map of Waltham Massachusetts* (Walker 1892). The National Register status of Stonehurst and the meticulous archival library maintained by the estate also provided a great deal of project-specific primary and secondary historical documentation including: *Landscape Master Plan Update, Robert Treat Paine Estate* (Berg 1999); *Historic Grounds Report, Robert Treat Paine Estate, Waltham, Massachusetts* Brockway 1992); and *H.H. Richardson, Frederick Law Olmsted, and the House for Robert Treat Paine* (Floyd 1983).

Environmental Studies

Bedrock and surficial geological studies provide information about the region's physical structure and about geological resources near the project area. The United States Department of Agriculture (USDA) Soil Conservation Service soil survey for Middlesex County (USDA 1991) supplied information about soil types and surficial deposits within the project area and the general categories of flora and fauna that these soil types support. In addition, studies of past and current environmental settings of New England were consulted

Informant Interviews

Individuals knowledgeable about the construction and history of Stonehurst were consulted before and during fieldwork at the property. Ann Clifford (director and curator, Stonehurst, The Robert Treat Paine Estate) and Heather Leavell (assistant curator, Stonehurst, The Robert Treat Paine Estate) offered access to the estate archives and provided detailed information about the current condition of and improvements to the property. Ralph Gaudet (building commissioner, Town of Waltham) provided historic engineering information concerning the house.

Walkover Survey

A walkover survey was conducted to collect environmental information and to examine the current physical condition of the project area. Environmental information noted the presence, types, and extent of fresh water; drainage characteristics; presence of bedrock outcrops and level terraces; and the steepness of slopes. The current physical condition of the project area is largely defined by the presence, absence, and degree of previous disturbance to the natural landscape.

The current physical condition of the project area may have been affected by plowing, gravel or soil mining, or previous construction and site preparation activities. Such disturbances can affect the potential for the presence of cultural resources, reducing the probability they will be found in their original

archaeological contexts. Plowing, which can move artifacts from their original vertical and horizontal contexts, is the most common type of disturbance in New England. The consequences of plowing, however, are not as severe as the effects of soil or gravel mining, which may completely remove archaeological deposits.

Another purpose of the walkover was to note surface indications of archaeological sites. While prehistoric sites in New England are most often found belowground, artifact scatters are sometimes exposed on the surface through cultural and natural processes such as road use, gravel pitting, construction activity, or erosion. Historic site types that might be visible include stone foundations, stone walls, trash deposits, and dams. If a historic farmstead is present within the project area, it is possible a cellar hole and associated landscape features such as stone walls, orchards, fields, and ornamental herbage may be observed.

The information collected during the walkover was recorded on project maps and, in conjunction with the proposed construction locations, was instrumental in determining where subsurface testing would occur.

Archaeological Sensitivity Assessment

Information collected during background research and the walkover survey was used to develop a predictive model to assess the potential for the presence of Native American and Euro-American resources, the types of sites that might be found, and their cultural and temporal affiliation. The development of predictive models for locating cultural resources has become an increasingly important aspect of CRM and planning.

The predictive sensitivity model used criteria to rank the potential for the project area to contain Native American or Euro-American sites. The criteria used to assess the Stonehurst project area were proximity of documented cultural resources, local land use patterns, environmental characteristics, and the area's physical condition. The project area was stratified into zones of expected archaeological sensitivity to determine which areas would be tested.

Native American Archaeological Sensitivity

Sets of key environmental variables used to predict the location of Native American sites have been compiled from research conducted by professional archaeologists. These studies have demonstrated that certain environmental and topographical settings are strongly associated with the presence of Native American sites. The most productive studies have been of large areas with a variety of environmental settings that were field tested to determine the validity of the predictive model. For example, analysis of several hundred sites in southeastern New England (Thorbahn et al. 1980) found that the highest density and greatest clustering of prehistoric sites occurred within 300 meters (m) of low-ranking streams and large wetlands. The distribution of sites found along a 14-mile I-495 highway corridor in the same area confirmed this observation (Thorbahn 1982).

Other studies have found that site locations are strongly associated with modern wetland densities (Mulholland 1984). Wetlands provide both a home and breeding habitat for a diverse set of animals,

support foods and other vegetation. Prehistoric Native Americans sought the most productive wetlands, including those with a wide variety of resources and those with consistent and reliable resource availability (Hasenstab 1991; Nicholas 1991; Thorbahn 1982; Thorbahn et al. 1980).

Geologic data provides information about lithic resources and about current and past environmental settings and climates. Bedrock geology helps to identify where raw materials for stone tools were obtained by prehistoric groups and gives indications of how far from their origin lithic materials may have been transported or traded. The variety and amount of available natural resources are dependent on soil composition and drainage, which also play a significant role in determining wildlife habitats, and forest and plant communities.

Geomorphology assists in reconstructing the paleoenvironment of an area and is particularly useful for early Holocene (PaleoIndian and Early Archaic period) sites in areas that are different physically from 10,000 years ago (Simon 1991). Recent landscape changes such as drainage impoundments for highways and railroads, the creation of artificial wetlands to replace wetlands impacted by construction, or wetlands drained for agricultural use, can make it difficult to assess an area's original configuration and current archaeological potential (Hasenstab 1991:57).

Beyond predicting where sites are located, archaeologists attempt to associate cultural and temporal groups with changes in the environmental settings of sites. Changes in the way prehistoric groups used the landscape can be investigated through formal multivariates such as site location, intensity of land use, and specificity of land use (Nicholas 1991:76). However, distinguishing the difference between repeated short-term, roughly contemporaneous occupations and long-term settlements is difficult and can make interpreting land use patterns and their evolution problematic (Nicholas 1991:86).

Euro-American Archaeological Sensitivity

The landscape of a project area is used to predict the types of Euro-American sites likely to be present. Major locational attributes differ according to site type. Domestic and agrarian sites (houses and farms) characteristically contain water sources and are located near arable lands and transportation networks. Industrial sites (e.g., mills, tanneries, forges, and blacksmith shops) predating the late nineteenth century are typically located close to waterpower sources and transportation networks. Commercial and public or institutional sites (e.g., stores, taverns, inns, schools, and churches) are usually situated near settlement concentrations with access to local and regional road systems (Ritchie et al. 1988).

Written and cartographic documents aid in determining Euro-American archaeological sensitivity. Historic maps are particularly useful for locating sites in a given area, determining a period of occupation, establishing the names of past owners, and providing indications of past use(s) of the property. Town histories provide information about important sites including previous functions, ownership, local socioeconomic conditions, and political development. These details assist in placing the Euro-American site within its historical context, facilitating assessments of the potential importance of a particular site.

Background research alone, however, is not sufficient to locate underdocumented historic period archaeological sites. A large-scale archaeological study by King (1988) showed that in rural areas only 63 percent of the sites discovered were identifiable through documentary research. This suggests that

approximately one-third of New England's rural Euro-American archaeological sites may not appear on historical maps or in town and regional histories. Walkover inspections and subsurface testing are required to locate and identify underdocumented historic sites.

Archaeological Sensitivity Ranking

The project area was ranked according to the potential for the presence of cultural resources based on information collected during the background research and walkover. Subsurface testing was planned for areas assigned high and moderate sensitivity rankings and where project impacts will occur. Table 2-1 is a summary of the different factors used to develop the archaeological rankings.

Subsurface Testing

Subsurface testing was conducted in moderate and high archaeologically sensitive portions of the project area to locate and identify any potentially important archaeological resources. Nineteen 50-x-50-centimeter (cm) test pits and two 1-x-1-m excavation units (EUs) were excavated within the Stonehurst

Table 2-1. Archaeological Sensitivity Ranking.

Factors								*Ranking*
Presence of Sites		Proximity to Favorable Cultural/ Environmental Characteristics			Degree of Disturbance			
Known	Unknown	≤ 150 m	150-500 m	> 500 m	None/ Minimal	Moderate	Extensive	Sensitivity
•		•			•			*High*
•		•				•		*High*
•		•					•	*Low*
•			•		•			*High*
•			•			•		*High*
•			•				•	*Low*
•				•	•			*High*
•				•		•		*High*
•				•			•	*Low*
	•	•			•			*High*
	•	•				•		*High*
	•	•					•	*Low*
	•		•		•			*High*
	•		•			•		*Moderate*
	•		•				•	*Low*
	•			•	•			*Moderate*
	•			•		•		*Low*
	•			•			•	*Low*

project area. The test pits were excavated at 5- and 7.5-m intervals along the length of the proposed underground drainage system, including the location of the infiltrator drainage chamber and the emergency overflow outlet pipe (Figure 2-1). The contiguous EUs were placed in the location of a mortared fieldstone feature identified during the test pit excavations (see Chapter 6).

All test pits and EUs were excavated by shovel in arbitrary 10-cm levels to sterile subsoil. Excavated soil was hand-screened through ¼-inch hardware cloth, and all cultural materials remaining in the screen were bagged and tagged by level within each unit. The count and type of all recovered cultural material were noted. Soil profiles, including depths of soil horizons, colors, and textures, were recorded for each test pit and excavation unit on standard PAL recording forms. All test pits and EUs were filled and the ground surface was restored to its original contour following excavation. Color slides and black-and-white photographs were taken of the general project area and identified features.

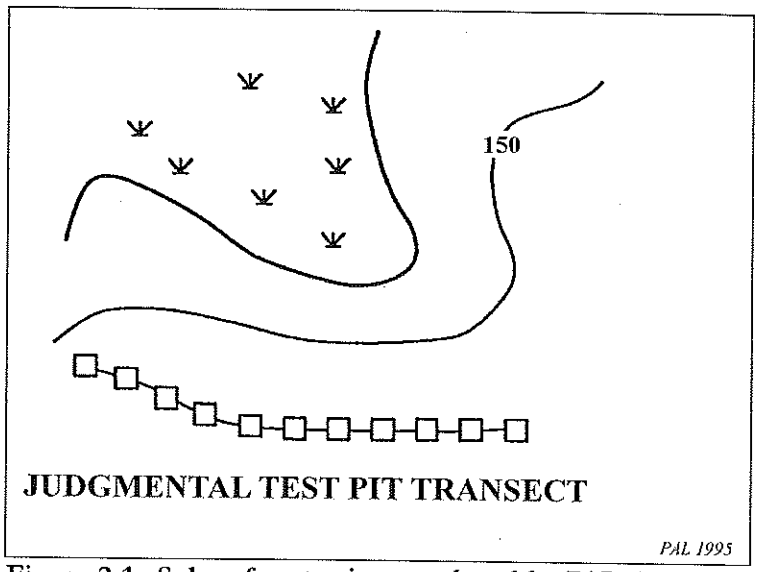

Figure 2-1. Subsurface testing employed by PAL during an intensive archaeological survey.

Laboratory Processing and Analyses

Processing

All cultural materials recovered from the Stonehurst project area during the intensive survey and site examination were organized by site and provenience, and recorded and logged in on a daily basis. Cultural materials were sorted by type and either dry brushed or cleaned with tap water depending on the material or artifact type and condition.

Cataloging and Analyses

All cultural materials were cataloged into a custom computer program designed using a combination of *FoxPro 2.5* and *FoxExpress* database software. This program consists of a core of databases relationally linked to multiple material-type-specific databases that allow for in-depth analysis of cultural materials. Materials that display similar attributes such as material type, functional and typological classes, size range, color, etc. were grouped and cataloged by lots. These lots are stored in 2-milliliter thick polyethylene resealable bags with acid-free tags containing provenience identification information.

Historic cultural materials were cataloged according to material (e.g., ceramic, glass, coal, synthetic) and functional (e.g., plate, bowl, bottle, building material) categories. Temporally sensitive historic artifacts, such as ceramics, were also identified in terms of type (e.g., redware, pearlware, whiteware) when possible. In addition, ceramic sherds and bottle glass were examined for distinguishing attributes that provide more precise date ranges of manufacture and use. These included maker's marks, decorative patterns, and embossed or raised lettering.

Tentative dating of historic archaeological resources was performed using ceramic indices according to Hume (1969), Miller (1990, 1991), Miller and Hurry (1983), and South (1977). An analysis of the different nail and bottle types was used to refine the tentative date ranges of historic occupation generated by the ceramic assemblages. The analyses of the cultural materials recovered during the intensive archaeological survey and site examination also included mapping the density, horizontal, and vertical distribution of these materials within the project area.

Curation

Following the laboratory processing and cataloging activities, all recovered cultural materials were stored in acid-free Hollinger boxes with box content lists and labels printed on acid-free paper. These boxes will be stored at PAL according to curation guidelines established by the MHC. PAL serves as a temporary curation facility pending approval by the MHC for the curation of artifacts, samples, and associated records at Stonehurst.

CHAPTER THREE

ENVIRONMENTAL CONTEXT

Environmental attributes, individually and in combination, are important factors underlying Native American and Euro-American land use patterns. This chapter describes the environmental context of the project area, including geographic setting, drainage, bedrock geology, and soil types. The environmental context also contributes to understanding what natural resources and transportation routes were available to human groups who used the area over time.

Physiographic Setting

The town of Waltham is situated in the Coastal Lowland physiographic region of southern New England along the boundary between the Boston Basin and the Middlesex fells uplands (Figure 3-1). The Boston Basin is a structural and topographic feature bounded on the north by a distinct fault zone (Billings 1976:28; Kaye 1976:46). The fault zone along the south/ southeast margin of the Middlesex fells extends through Arlington and Belmont and includes Menotomy Rocks just southwest of Fresh Pond.

Along the basin boundary escarpment west of Fresh and Spy Ponds the largest hills reach maximum elevations of 150–350 feet above sea level (ft asl). Below the basin boundary escarpment to the north and northeast of Fresh Pond is a large glacial outwash plain feature that extends from the lower Charles River to Alewife Brook and the Mystic River estuary. Elevations in the outwash plain range from 10–30 feet above sea level. The Boston Basin is drained by two major river watersheds, the Charles River drainage to the south and the Mystic River drainage to the north. An extensive tributary stream, pond, and lake network surrounds these two river systems to form the relatively level topography of the Basin itself.

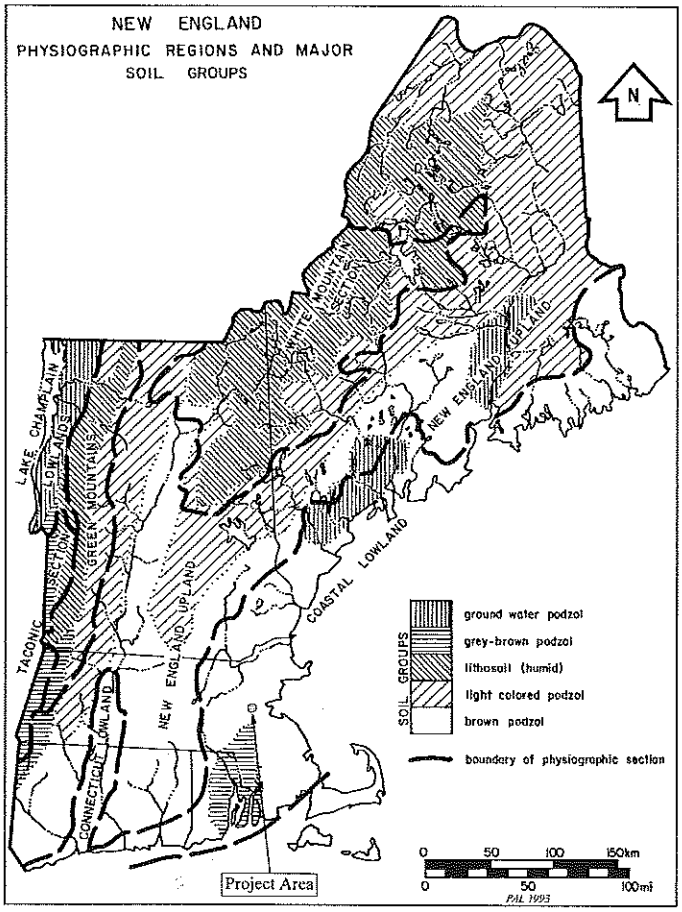

Figure 3-1. Map of the physiographic regions and major soil groups of New England showing the location of the Stonehurst project area, Waltham, Massachusetts.

Hydrology

Waltham lies within the Charles River drainage basin (Figure 3-2), a 307-square-mile watershed area encompassing more than 20,000 acres of wetland and 4,388 acres of ponds, lakes, and reservoirs (Bickford and Dymon 1990). Beginning at a spring on Honey Hill in Hopkinton and meandering 80 miles before draining into Boston Harbor, the river is fed by three major tributaries including Hopping Brook, Mill River, and Stony Brook. The Charles River served as a primary settlement locus during the prehistoric period (MHC 1982), and extensive archaeological survey work in the basin has repeatedly confirmed this observation (Cherau et al. 2000; Dincauze 1968, 1975; Donta 2001).

The river basin also was heavily utilized during the historic period (Elia et al. 1989), and the Charles currently flows through some of the most heavily populated and urbanized areas of the state. Stonehurst lies within a complex of "country estates" roughly 1 mile from the river, but the earliest settlement of Waltham clustered along the water-powered mills and industries along the riverbanks.

Geology

The bedrock geology of the Stonehurst project area lies within the Milford-Dedham zone in the Boston Basin and comprises Cambridge argillite, a gray argillite with minor occurrences of quartzite (Zen et al.

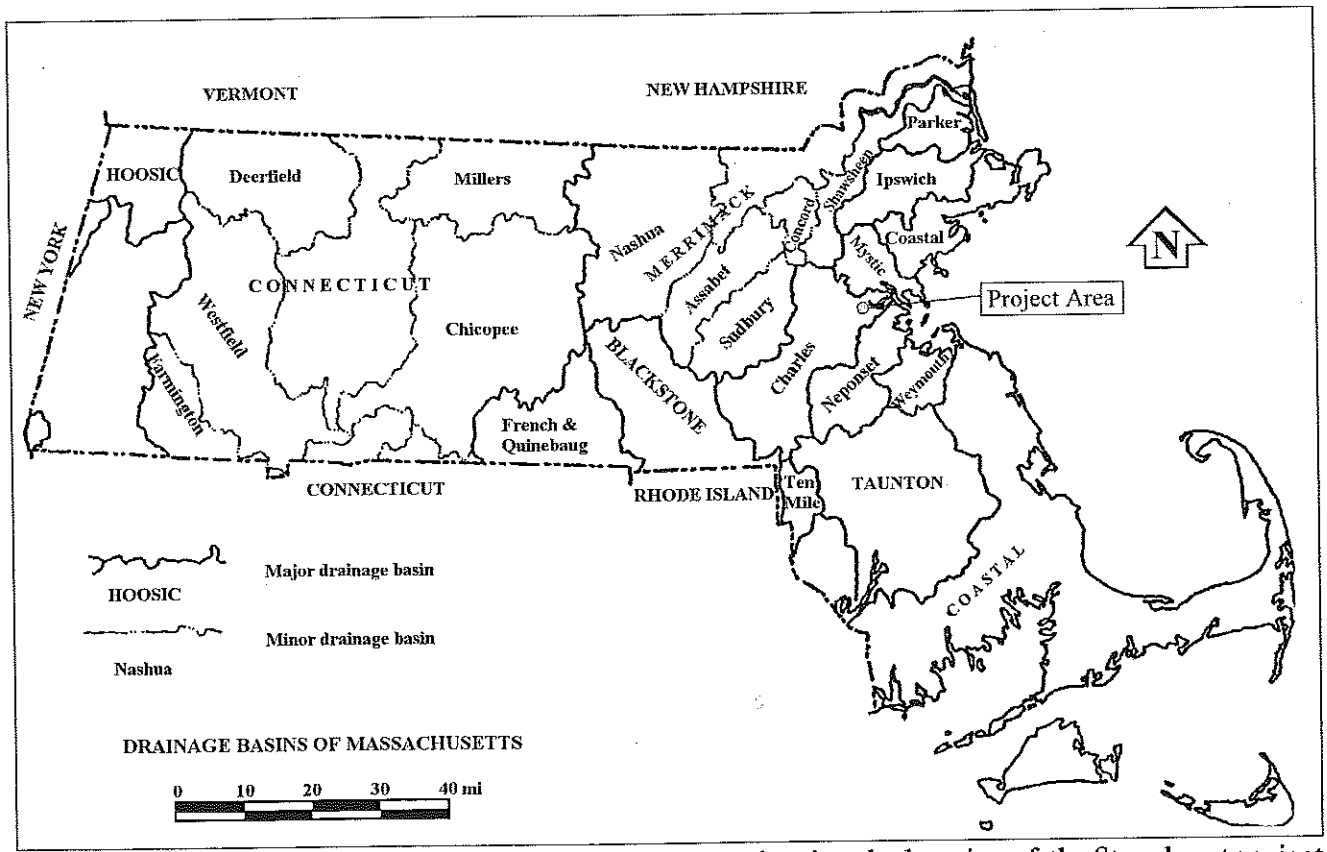

Figure 3-2. Map of the drainage basins of Massachusetts showing the location of the Stonehurst project area.

1983). Several large outcrops of this material occur across the property, most notably "Glacier Rock" just southeast of the house.

Soils

The soils within the project area are part of the Charlton-Hollis-Rock outcrop complex and the Narragansett-Hollis-Rock outcrop complex. The former soil series comprises deep well-drained to excessively well-drained soils with a high proportion of rock both above and below a gently sloping ground surface. Soil depths, including topsoil and substrata, extend to 60 inches before hitting the underlying bedrock. The Narragansett-Hollis-Rock soil is similarly well drained and stony, but occurs on more steeply sloped terrain and can be exceptionally shallow, often extending only 16 inches below ground surface before hitting bedrock. Both soil series are considered to be limited in terms of their engineering and agrarian potential because of their varying degrees of stoniness, slope, and shallowness (USDA 1991:18, 21).

Existing Project Area Conditions

The Stonehurst project area, at 85 ft asl, lies at the western edge of the Boston Basin within the moderate elevation ranges for the area. The prominent rise on which the estate is located, roughly 1/3 mile from Lyman Pond, was selected specifically for its commanding views of the surrounding landscape including the entire Charles River valley from the Prospect hills to the west, across to the Newton hills to the south and the Watertown and Brookline hills to the southeast. Much of this view has been obscured during the intervening years by overgrowth and the development of the surrounding forest.

In contrast to the highly developed urbanized profile of greater Waltham, Stonehurst occupies a comparatively bucolic environment of 109 acres of woodland and meadows. The glacial history of the region also has left its mark on the Stonehurst landscape. Several enormous smoothed and scarred bedrock outcrops dot the property, the largest of which, located just southeast of the main house, is referred to colloquially as "Glacier Rock." Hiking trails crisscross the outskirts of the estate as part of the Storer Conservation lands.

The south and west elevations of the house are marked by brick patios and walkways, and the terraces and garden beds designed by Olmsted. To the east of the house, the yard area slopes steeply into a deep, marshy ravine filled with mature rhododendrons. A gravel parking lot, landscaped circular driveway, and several ledge outcrops distinguish the north side of the house. The area immediately surrounding the house appears to have been substantially altered during the relocation and remodeling of Stonehurst and during the subsequent landscaping campaigns.

CHAPTER FOUR

NATIVE AMERICAN CONTEXT

As discussed in Chapter 3, Waltham is situated within the Charles River drainage and is surrounded by a series of natural and man-made ponds and lakes. The intertidal zone characterizing the head of the brackish Boston Basin would have provided sizeable seasonal runs of marine and anadromous fish for pre-Contact populations, including large schools of alewives, shad, cod, and some salmon (Dincauze 1973). A variety of shellfish also would have been available along the rocky or muddy shores of the river estuary. The abundance and variety of marine and animal life at this location would have made it one of the richest natural resource bases in the Charles River drainage.

A diverse body of information suggests that river drainages (and related topographical features such as terraces, wetlands, estuaries, tidal flats, etc.) provided a basic framework for prehistoric settlement systems and resource exploitation territories. Various types of data, including lithic resource use and ethnohistoric descriptions of traditional land holdings, suggest that Native American territorial systems were oriented to regional drainage systems and related landforms from the Middle Archaic to the early historic period (Dincauze 1974; Kenyon 1983; Snow 1980; Thorbahn 1984).

Current models of prehistoric settlement and land use suggest that core-periphery-corridor relationships characterize prehistoric occupation of river drainages. Studies of the Charles River drainage and the Greater Boston area indicate that core areas of prehistoric occupation exist in lowlands, riverine, and estuarine zones. These core areas of prehistoric settlement have been identified from the partial documentation of sites found by avocational collectors at the end of the nineteenth and beginning of the twentieth century. Continuous development in the greater Boston area has destroyed hundreds of prehistoric sites, and only fragments of core area locations are assumed to survive (MHC 1982).

The extant database includes information from both avocational and professional survey work and research. The result has been the compilation of a prehistoric cultural chronology within which known and potential site types and distributions can be studied (Table 4-1).

PaleoIndian Period (12,500–10,000 B.P.)

The earliest evidence for human occupation of the lower Charles River drainage dates from the PaleoIndian Period. The PaleoIndian Period in southern New England is characterized by low population densities, with small mobile groups of hunter-gatherers exploiting migratory game animals and seasonal plant resources. Paleoenvironmental reconstruction has determined that the lower Charles River basin was above the level of the rising sea and would have been an attractive hill-studded marshy coastal plain to PaleoIndian groups in the area (Dincauze 1974). Subsequent rises in sea level and extensive historic and modern filling activities of the Boston Harbor area are believed to have deeply buried and/

Table 4-1. Native American Cultural Chronology for Southern New England.

Period	*Years*	*Identified Temporal Subdivisions*[1]	*Cultural Aspects*
PaleoIndian	12,500–10,000 B.P.[2] (10,500–8000 B.C.)	• Eastern Clovis • Plano	Exploitation of migratory game animals by highly mobile bands of hunter-gatherers with a specialized lithic technology.
Early Archaic	10,000–7500 B.P. (8000–5500 B.C.)	• Bifurcate-Base Point Assemblages	Few sites are known, possibly because of problems with archaeological recognition. This period represents a transition from specialized hunting strategies to the beginnings of more generalized and adaptable hunting and gathering, due in part to changing environmental circumstances.
Middle Archaic	7500–5000 B.P. (5500–3000 B.C.)	• Neville • Stark • Merrimack • Otter Creek • Vosburg	Regular harvesting of anadramous fish and various plant resources is combined with generalized hunting. Major sites are located at falls and rapids along river drainages. Ground-stone technology first utilized. There is a reliance on local lithic materials for a variety of bifacial and unifacial tools.
Late Archaic	5000–3000 B.P. (3000–1000 B.C.)	• Brewerton • Squibnocket • Small Stemmed Point Assemblage	Intensive hunting and gathering were the rule in diverse environments. Evidence for regularized shellfish exploitation is first seen during this period. Abundant sites suggest increasing populations, with specialized adaptations to particular resource zones. Notable differences between coastal and interior assemblages are seen.
Transitional	3600–2500 B.P. (1600–500 B.C.)	• Atlantic • Watertown • Orient • Coburn	Same economy as the earlier periods, but there may have been groups migrating into New England, or local groups developing technologies strikingly different from those previously used. Trade in soapstone became important. Evidence for complex mortuary rituals is frequently encountered.
Early Woodland	3000–1600 B.P. (1000 B.C.–A.D. 300)	• Meadowood • Lagoon	A scarcity of sites suggests population decline. Pottery was first made. Little is known of social organization or economy, although evidence for complex mortuary rituals is present. Influences from the midwestern Adena culture are seen in some areas.
Middle Woodland	1650–1000 B.P. (A.D. 300–950)	• Fox Creek • Jack's Reef	Economy focused on coastal resources. Horticulture may have appeared late in the period. Hunting and gathering were still important. Population may have increased from the previous low in the Early Woodland. Extensive interaction between groups throughout the Northeast is seen in the widespread distribution of exotic lithics and other materials.
Late Woodland	1000–450 B.P. (A.D. 950–1500)	• Levanna	Horticulture was established in some areas. Coastal areas seem to be preferred. Large groups sometimes lived in fortified villages, and may have been organized in complicated political alliances. Some groups may still have relied solely on hunting and gathering.
ProtoHistoric and Contact	450–300 B.P. (A.D. 1500–1650)	• Algonquian	Groups such as the Wampanoag, Narragansett, and Nipmuck were settled in the area. Political, social, and economic organizations were relatively complex, and underwent rapid change during European colonization.

[1] Termed Phases or Complexes
[2] Before Present

or submerged these early estuarine prehistoric sites (MHC 1982). Diagnostic cultural materials associated with this period, including fluted projectile points and/or associated tool assemblages, have been found in the drainage area.

No PaleoIndian sites have been identified in Waltham. A single Eden-like projectile point diagnostic of the Late PaleoIndian Period, however, is contained in the artifact collection from the Watertown Arsenal East Site (19-MD-332), located roughly 4 miles southeast of the project area. This multicomponent site, situated at the east side of the old Watertown Arsenal on a sandy terrace overlooking the Charles River, is believed to have been nearly completely destroyed (MHC site files).

Archaic Period (10,000–2500 B.P.)

Sea level changes and modern urban development also are partially responsible for the scarcity of reported sites from the Early Archaic Period (10,000–7500 B.P.). Bifurcate base projectile points, diagnostic of this period, have been identified in local collections from five multicomponent area sites. Single examples were recovered from the Watertown Arsenal East Site (19-MD-176) (Table 4-2) and two unrecorded locations in Cambridge within the lower Charles River drainage (MHC 1982). Sites from this period are typically located adjacent to large water bodies such as lakes and modern estuaries. Small highly mobile groups of hunter-gatherers would have seasonally exploited natural resources within a relatively large area.

The Middle Archaic Period (7500–5000 B.P) is more widely documented in the Charles River drainage than the preceding periods. The higher frequency and number of Middle Archaic sites is attributed in part to an increase in population. Middle Archaic groups of hunter-gatherers show a preference for settlement near the edges of rivers, lakes, and large wetlands where seasonally rich resource areas would have been easily exploited. These food resources included anadromous fish, migratory birds, and a variety of game animals (Dincauze 1974). Middle Archaic sites are generally identified by diagnostic Neville and Stark projectile points. At least eight sites containing Middle Archaic occupations are located in the Charles River drainage within a 3-mile radius of the project area. These include the Wyman Farm Site (19-MD-370), situated along the west bank of Alewife Brook, and an unnamed site (19-MD-66) at Spy Pond in Arlington. The Wyman Farm Site constitutes one of the largest and densest multicomponent sites in the Charles River drainage (Dincauze 1973). It appears to have functioned as a seasonal fishing camp site.

Evidence of Late Archaic Period (5000–3000 B.P.) activity is widespread and well documented in the lower Charles River drainage. The high frequency of sites reflects a larger, more general pattern of increasing populations exercising more specialized resource procurement activities. A variety of Late Archaic site types have been identified adjacent to springs, lakes, ponds, rivers, and estuary heads. These sites include coastal shell middens, fishweirs, quarries, and occupation areas indicating both inland and coastal settlements. Sites also range in size from small, temporary resource procurement stations to large base camps. The pattern of Late Archaic distributions, oriented to the banks of the Charles River and its major stream and pond drainages, suggests a well-balanced adaptation to particular resource zones of the region. The Charles River estuary would have been a highly productive ecozone utilized as part of a well-established annual round of resource exploitation by Late Archaic groups.

Table 4–2. Identified Prehistoric Sites within the Boston Metropolitan Area.

General Period	Site Name	Town	Ecozone	Site Size	Site Type	Cultural Material/Diagnostics
PaleoIndian 12,500–10,000 B.P. (10,500–8000 B.C.)	Neponset /Wamsutta	Canton	riverine	moderate	base camp	Fluted projectile points, bifaces, sidescrapers, endscrapers, gravers, retouched flakes.
	Saugus Quarry	Saugus	upland	small	quarry/lithic source area	Fluted point, point preforms.
	Goat Acre	Arlington	pond/riverine	find spot in large multi component site	small camp?	Eden-like projectile point.
Early Archaic 10,000–7500 B.P. (8000–5500 B.C.)	Goat Acre	Arlington	pond/riverine	find spot in large multi component site	small camp?	bifurcate base projectile point
	Ponkapoag Pond	Canton	pond	find spot in large multi component site	small camp?	bifurcate base projectile point.
	Long Island	Boston	harbor island	find spot	small camp?	bifurcate base projectile point.
	East Watertown	Watertown	riverine	find spot in large multi component site	small camp?	bifurcate base projectile point.
Middle Archaic 7500–5000 B.P. (5500–3000 B.C.)	Arlington Plain	Arlington	pond/riverine	large	base camp	Neville, Stark projectile points.
	Ponkapoag Pond	Canton	pond	large	base camp	Neville, Stark projectile points, semi-lunar knives.
	Green Hill	Canton	upland, near riverine wetlands	large	base camp	Neville, Stark projectile points, semi-lunar knives, lithic workshop features.
	Watertown Arsenal	Watertown	riverine	unknown	unknown	Neville, Stark projectile points.
	Gill Farm	Randolph	riverine wetlands	moderate	base camp	Neville, Stark projectile points, point preforms lithic workshop features.

Table 4–2. Identified Prehistoric Sites within the Boston Metropolitan Area.

General Period	Site Name	Town	Ecozone	Site Size	Site Type	Cultural Material/Diagnostics
Late Archaic 5000–3000 B.P. (3000–1000 B.C.)	Goat Acre	Arlington	pond/riverine	large	base camp	Projectile points diagnostic of primary Late Archaic traditions (Laurentian,Small Stemmed Point, Susquehanna), wide range of other chipped-stone tools, ground-stone woodworking tools.
	Ponkapoag Pond	Canton	pond	large	base camp	Brewerton Eared, Small Stemmed, Susquehanna Tradition projectile points, wide range of other chipped-stone tools, ground-stone woodworking tools.
	Green Hill	Canton	upland, near riverine wetlands	large	base camp	Brewerton Eared, Squibnocket Triangle, Small Stemmed projectile points, wide range of other chipped-stone tools, ground-stone woodworking tools.
	Boylston Street Fishweir	Boston	estuarine/tidal flat	large	fish weir/trap	wood stakes cut to make weir.
	Peddock's Island	Boston Harbor	harbor island	small?	inhumation burial	individual burial under Woodland shell midden, C–14 date of 4135±225 B.P.
	Calf Island	Boston Harbor	harbor island	moderate	seasonal camp for fishing, bird, seal hunting?	Small Stemmed, Atlantic projectile points.
	Watertown Arsenal	Watertown	riverine/estuarine	unknown	cemetery	Susquehanna Ttradition cremation burial features with assemblages of chipped- and ground-stone tools, human bone.
Terminal Archaic 3000– 2500 B.P. (1000 – 600 B.C.)	Goat Acre	Arlington	pond/riverine	large?	base camp	Orient Fishtail projectile points, steatite vessel sherds.
Early Woodland 2500–1600 B.P. (600 B.C.– 300 A.D.)	Cassidy Farm	Watertown	estuarine/riverine	large	base camp	Coburn, Orient Fishtail projectile points, drills, steatite vessel sherds.
	Perkins School	Newton	estuarine/riverine	small?	temporary camp	Orient Fishtail projectile points, steatite vessel sherds.
	Water Street	Charlestown	estuarine	small	temporary camp	Small stemmed, Rossville–like projectile points, ceramic sherds.

Table 4–2. Identified Prehistoric Sites within the Boston Metropolitan Area.

General Period	Site Name	Town	Ecozone	Site Size	Site Type	Cultural Material/Diagnostics
	Town Dock	Charlestown	estuarine	small	temporary	triangular end scraper, lithic workshop feature.
	Clap's Landing	Newton	estuarine/ riverine	large?	seasonal base camp	untyped side notched projectile points, ceramic sherds.
Middle Woodland 1650–1000 B.P. (300–950 A.D.)	Goat Acre	Arlington	pond/riverine	large	base camp	Jack's Reef Corner Notched, Fox Creek projectile points; ceramic sherds.
	Water Street	Charlestown	estuarine	moderate size	temporary camp(?)	Ceramic sherds, C–14 date of 1810±50B.P.
	Boylston Street rockshelter	Newton	upland	small	temporary camp	Ceramic sherds.
	Massachusett Hill	Milton	upland	unknown	quarry/lithic source area	Hornfels quarry blanks, preforms.
	Peddock's Island	Boston	harbor island	large	shellfish processing/ midden	Ceramic sherds.
Late Woodland 1000–450 B.P. (950–1500 A.D.)	Goat Acre	Arlington	pond/riverine	large	base camp	Levanna projectile points.
	Lemon Brook	Newton	estuarine/riverine	unknown	seasonal fishing camp	Levanna projectile points.
	Glen Avenue rockshelter	Newton	upland	small	temporary camp	Ceramic sherds.
	Calf Island	Boston	harbor island	small	seasonal camp for fishing, bird, seal hunting	Levanna projectile points, ceramic sherds.
Protohistoric/Contact 450–300 B.P. (1500–1650 A.D.)	Winnesimmett	Chelsea	estuary	unknown	base camp, cemetery	copper, brass projectile points, shell beads, ceramic smoking pipes.

Table 4–2. Identified Prehistoric Sites within the Boston Metropolitan Area.

General Period	Site Name	Town	Ecozone	Site Size	Site Type	Cultural Material/ Diagnostics
	Nanepashemet Fort	Medford	upland hills	unknown	palisaded settlement	unknown
	Moswetusset Hummock	Quincy	estuarine	unknown	base camp	burials?, copper, brass artifacts
	Mishawum	Charlestown	estuary	unknown	base camp, cemetery	burials

Sources: MHC Site Files; Dincauze 1974, 1975

The three cultural traditions associated with the Late Archaic to Transitional Archaic Period (5000–2500 B.P.) are represented by a number of multicomponent sites in the Charles River estuary zone. The Small Stemmed Point Tradition is present at several of the collected site locations in the general vicinity, including the Spy Pond West Site (19-MD-267) in Belmont and the Simon's Hill Site in Cambridge. The cultural remains from this site indicate that it most likely served as an intertidal fishweir on the Charles River (Dincauze 1973). A recent study of the artifact assemblages recovered from the Boylston Street fishweir (Johnson 1942, 1949) (see Table 4-2) identified Small Stemmed points as well as a Squibnocket Triangle point (Dincauze 1973).

The Transitional Archaic Susquehanna Tradition, represented by Brewerton, Vosburg, and Otter Creek point types, is well represented in the Charles River estuary. All four regional cultural phases of this tradition have been identified at several multioccupation site locations. The Atlantic point, diagnostic of the Atlantic Phase, is the predominate artifact in the Watertown Arsenal East Site collections. Associated drills, scrapers, and bifaces were also found at this site. The Watertown Arsenal Site (19-MD-175) was discovered and destroyed by gravel quarrying on the Arsenal grounds near the corner of Arsenal and Arlington Streets (Dincauze 1968). This multicomponent campsite was used repeatedly throughout the Archaic Period when it was well above tidewater levels. Dincauze (1968) has explained the Watertown Phase as being oriented toward the exploitation of river valley environments within the region of southeastern New England.

Only two sites containing Archaic components have been recorded for Waltham. A possible Middle to Late Archaic find spot, the Camp Forest Grove Site (19-MD-554) has been reported by an avocational collector on the east bank of the Charles River, roughly 1 ½ miles southwest of Stonehurst. The site contained a surface collection of quartz, argillite, and felsite and a possible a red felsite drill tip. The Clematis Brook Site (19-MD-565) also contained a surface-collected Late Archaic component roughly 1-mile east of the project area.

Woodland Period (3000–450 B.P.)

Early Woodland Period (3000–1600 B.P.) sites appear less frequently than their Archaic predecessors in the lower Charles River drainage. This has been explained in part by lower population densities resulting from a disintegration of the successful Archaic Period adaptive subsistence strategies (Dincauze

1974). Woodland period settlement patterns are characterized by a shift to more permanent coastal locations in southeast New England. In addition to these coastal sites, large inland sites occur near rivers on high flood plains and smaller resource procurement stations are located along streams and wetland margins. Nearly all of the multicomponent Archaic Period sites in the immediate vicinity of the project area contain at least a few examples of diagnostic Early Woodland Meadowood and Rossville projectile points.

Evidence of Middle Woodland (1650–1000 B.P.) occupations also exists at most of the previously described multicomponent sites in this former estuarine zone. Diagnostic Fox Creek, Greene, and Jack's Reef point types have been identified in the Frazar collections from the Arsenal sites in Watertown, at several sites in Arlington, and from the Lemon Brook Site in Newton. The Clematis Brook Site (19-MD-365) in Waltham also yielded a Greene-type projectile point. This site occupies a sandy terrace at the confluence of the Clematis and Beaver Brooks.

The Late Woodland Period (1000–450 B.P.) is characterized by the introduction of cultigens into the Northeast. Horticulture was established in some areas, with a preference for coastal locations. This resulted in more semipermanent settlement patterns and subsistence practices, although hunting and gathering remained the predominant exploitation strategies. Increased artifact frequencies and site sizes attest to larger population densities during the Late Woodland Period. The largest Late Woodland sites are those situated at estuary heads well suited for spring and fall natural resource exploitation. Their role in the Late Woodland settlement pattern appears to have been one of a major core area of the annual round, supporting large seasonal concentrations of Woodland groups (Dincauze 1974).

Large triangular (Levanna) projectile points are used to identify Late Woodland period occupations have been found at most of the multicomponent sites located in the Charles River estuary. These include the Arsenal sites and the Perkins School Site along the north bank of the Charles River, as well as the Lemon Brook Site to the south. Shell-tempered pottery also characterizes the improved manufacture of ceramics during the Late Woodland Period. Local lithic materials, such as felsite, quartz, and Saugus jasper, dominate the Late Woodland artifact assemblages from the Charles River area.

The Clematis Brook Site, discussed previously, is reported to contain a Middle Woodland component and is the only site in Waltham to date to the Woodland Period in general.

Contact Period (450–300 B.P.)

The Charles River estuary area appears to have functioned as a boundary between the Neponset core area to the north and the Mystic core area to the south rather than functioning as a distinct core area in and of itself; the rich estuarine environment and transportation options offered by the river likely presented a massive resource draw to several different groups. Fishing most likely constituted the primary food gathering activity at sites located along the headwaters of the river, but was probably supplemented with shellfish and migratory waterfowl.

The area encompassed by present-day Waltham was occupied by the Pequassette, a subgroup of the Massachusetts and part of the Massachusetts Federation that occupied most of eastern Massachusetts

before European settlement. The Pequossett Village Site was documented by Roger Clapp, an early English trader, in the large area presently identified as the Perkins School Site in neighboring Watertown along the north bank of the Charles River (Hurd 1890). Cornfields were planted near the river, and large amounts of herring were netted by the Native Americans each spring (Hodges 1980). A major east-west trail, the "Connecticut Path" ran from the Cambridge fishing grounds along the north side of the river and provided access to interior areas to the west (MHC 1980a).

No Contact period sites have been recorded in Waltham, but there is archaeological evidence in Watertown of a late seventeenth-century settlement of Praying Indian survivors of the Deer Island internment. Dubbed the Lemon Brook Site, it was excavated during the mid-nineteenth century on the south shore of the Charles River. The site contained a flexed human burial with an assortment of grave goods including stone tools, a tortoise shell gorget, and some metallic beads and buttons of "probable" European origin (Dincauze 1973). Additional small village sites oriented toward horticulture or riverine resources also likely exist along the Charles, a hypothesis bolstered by the recovery of a Native American fishweir in Watertown Square near the ford across the Charles River (MHC 1980a).

Expected Prehistoric Resources

Although the Stonehurst Estate lies within the archaeologically productive Charles River drainage, the relative distance of the property from an easily accessible water source limits its pre-Contact archaeological potential. Given the broad view provided by the elevated position of the site area, potential resources may include small temporary hunting camps or, more likely, expedient game processing sites.

CHAPTER FIVE

HISTORIC CONTEXT

This chapter provides a historical overview of the Stonehurst project area in Waltham. The first half of the narrative outlines the general social, economic and political patterns of the town from roughly 1630 to the present day (Table 5-1), followed by historical information specific to the Stonehurst estate.

Plantation and Colonial Periods (1620–1775)

The town of Waltham originally was part of a much larger area, including Watertown and Weston, most of Belmont, and parts of Lincoln and Cambridge, encompassed in the 1630 Massachusetts Bay Colony grant. Waltham was an important early example of the East Anglican dispersed settlement systems. Land for a dwelling, a well for water, and a barn were granted free to each settler, first by the court and then by the town (Hodges 1980). In 1650, Edward Garfield acquired land near what is now Gore Street, and became Waltham's "first resident."

By the first decades of the eighteenth century, families began to more aggressively set down roots in the area. In 1701, the first "moving" school was at the home of John Hastings on north side of Trapelo Road and the first licensed tavern, owned by Samuel Bigelow, opened for business. By 1712/1713, Waltham became known as the Western Precinct; previously Waltham had been called the Middle Precinct and the Town of Weston was the Western or Farmers Precinct. After several years of contentious debate among the various parishes, Waltham was incorporated as its own town on January 3, 1738 (WHS 2002).

Federal Period (1775–1830)

Waltham developed a primarily agrarian economic orientation during its first 100 years of settlement (Figure 5-1). The proximity of the town to the Charles River, however, made it a magnet for small- and large-scale entrepreneurs (MHC 1980b). The industrial character that would define Waltham as a production powerhouse in the nineteenth century began in 1779, when David Bemis built a dam and paper mill on the Charles River. Shortly thereafter in 1785, Theodore Lyman, owner of The Vale Estate, built a wooden dam across the river at Eden Vale; in 1788, the land and structures were purchased John Boies for the construction of his paper mill. This early site eventually would develop into the Boston Manufacturing Company textile mill, initiated in 1813 by Francis Cabot Lowell as the first factory in Massachusetts. By 1790, the First Federal Census records a population of 882 people in Waltham.

The last decade of the eighteenth century saw a flurry of industrial construction, notably the establishment of the Gore Paper Mill in 1794, later to become the site of the Waltham Bleachery and Dye Works that

Table 5-1. Historical Cultural Chronology for Middlesex County, Massachusetts.

General Period*	Cultural Aspects/Diagnostic Cultural Material
Contact & Plantation	
1500–1675	Initial European exploration and contact with Native American population. Native core areas established along major river drainages (e.g., Concord, Assabet, Sudbury, and Shawsheen) connected by extensive overland trail system. Major native trail network intersected at confluences of Concord and Sudbury (Concord) and Charles and Sudbury (Lincoln) rivers, with branches extending in many directions. Local rivers provided seasonal fishing, diverse terrain offered hunting, gathering, and cultural opportunities for the dense aboriginal settlements in this area. Extensive immigration of Puritan settlers to newly established permanent settlements beginning with coastal towns. Middlesex County was established in 1643. By 1675 seventeen towns had been established within the county: Charlestown, Medford, and Watertown (1630); Concord (1635); Cambridge (1636); Sudbury (1639); Woburn (1642); Reading (1644); Malden (1649); Natick (1650); Billerica, Chelmsford, and Groton (1655); Marlborough (1660); Dunstable (1673); Sherborn (1674); and Framingham (1675). Increasing interaction introduced European diseases and material culture, altered native culture and society, and lead to encroachment on native lands. Agriculture, seasonal fishing, and small local industry formed basis of colonial economy. Waterways and native trails provided major transportation routes. Colonial settlement pattern expanded from concentrated at meeting houses to include scattered farms and mills. Majolica, early tin–glaze earthenware, Rhennish and Bellarmine stonewares predominate ceramic assemblage. Pipestems with mean bore diameter of 7–9/64ths inch. Handwrought nails only. Freeblown glass bottles, pontil scar, no mold mark.
Colonial	
1675–1775	European settlement and expansion in area virtually unaffected by King Philip's War (1675–76), continued. Agriculture and raw material collection remains principal economic activity in the towns. Industrial pursuits, including grist, saw, and fulling mills, and briefly an iron works, processed and produced goods for local consumption. Twenty new towns were established: Stow (1683); Newton (1691); Dracut (1702); Lexington and Weston (1713); Hopkinton and Littleton (1715); Holliston (1724); Stoneham (1725); Bedford and Westford (1729); Wilmington (1730); Townsend (1732); Tewksbury (1734); Acton (1735); Waltham (1738); Pepperell and Shirley (1753); Lincoln (1754); and Ashby (1767). Cambridge, Charlestown, and Concord developed into regional centers. Massachusetts colonists, angered by British economic restrictions (e.g., Stamp Act 1770, Townshend Acts 1767), rebelled in Boston Massacre (1770), Boston Tea Party (1773), and finally started fighting at Lexington and Concord (April 19, 1775). Imported tin–glaze earthenware, white salt–glaze, English brown, Westerwald and scratch–blue stonewares. Imported and domestic redwares. Mean pipestem bore diameter of 4–6/64 inch. Handwrought nails only. Freeblown and molded glass bottles.
Federal	
1775–1830	Following the Peace of Paris (1783) ending Revolutionary War, the population of Middlesex County grew steadily, increasing from 42,737 inhabitants in 1790 to 77,970 in 1830. Nine new towns were established: Carlisle and East Sudbury (1780); Boxborough (1783); Tyngsborough (1789); Burlington (1799); Brighton and West Cambridge (1807); South Reading (1812); and Lowell (1826). The economic base of many of the towns remained primarily agricultural, with an emphasis on corn, flax, hay, and livestock. Industries included: grist mills, lumbering and saw mills, quarrying, ceramic and glass manufacturing, and boot and shoe manufacture. Colonial highways remain, with improvements in form of Cambridge (Route 2A) and Concord (Route 2) turnpikes. Creamware and pearlware predominate ceramic assemblage. Handpainted and transfer print decorated. Small bore diameter (4/64 in.) pipestems. Both handwrought and machine cut nails. Post 1810 3–piece molded bottles introduced. First tin cans (post 1819).

* Source: MHC 1980a, 1980b, 1980c; Guzzi 1975

Table 5–1. Historical Cultural Chronology for Middlesex County, Massachusetts. (cont'd.)

General Period	Cultural Aspects/Diagnostic Cultural Material
Early Industrial 1830–1870	Introduction of railroads revolutionized the regional transportation network. With the arrival of the railroad came a products solely for local markets to exportation of these products to Boston and other markets. Milk, market gardening, and fruit production (e.g., Concord grape developed in Concord) were the major agricultural products exported. Industrial Revolution results in many changes as industrial pursuits replace agriculture as principal economic activity in most towns. Population of Middlesex County more than doubled, reaching 274,353 in 1870. Eleven new towns established: Wayland (1835); Somerville (1842); Ashland (1846); Melrose and Winchester (1850); North Reading (1853); Belmont (1859); Hudson (1866); Arlington (1867); Wakefield (1868); and Everett (1870). Lowell developed as a major mill town and center of industrial development, becoming a city in 1836. Cambridge was incorporated as a city in 1846. Concord developed as a literary retreat for several prominent writers and transcendentalists (Emerson, Thoreau, Hawthorne, Alcott, etc.) beginning in the 1830s. Pearlware, hard white earthenware, yellowware, and domestic stoneware most common. Transfer print design technique predominates. Machine cut nails predominate. 2-piece mold bottles replace 3-piece mold bottles (post 1840). Snap-case bottle bottom finish, no pontil scar (post 1857). Mason jar patented 1858. 1867 lettered panel bottles introduced. Pressed or sandwich-type glass (post 1827). Condensed milk can patented 1856. Vulcanization process patented by Goodyear 1839) resulted in increased production of rubber products.
Late Industrial 1870–1915	Technological developments resulted in major changes (e.g., steam power, electrification, gas lighting, etc.). Development of urban and interurban mass transportation, street railways (i.e., streetcar routes in Concord and Lexington by early 1900s). Country estates and some suburban development began in many towns by the end of this period. Industrial expansion continued in Lowell. Arrival of large numbers of immigrants, especially from Ireland, Italy, Norway, and Nova Scotia. The county's population more than doubled between 1880 (317,830) and 1910 (669,915). The towns of Ayer and Maynard were established in 1871. Somerville (1871) and Everett (1892) were incorporated as cities, while in 1873 Brighton and Charlestown became part of Boston. Market gardening and greenhouses formed an important part of the economy of Concord, Lexington, and Lincoln. Hard white earthenware predominates ceramic assemblage with yellowware and domestic stoneware. Machine-made bottles most common. Semi-automatic bottling machine (post 1881); replaced by fully automatic machine made bottles (post 1903). Hutchinson stopper (post 1872/9); canning jar closure (post 1875); crown bottle cap (post 1892). 1904 double-seamed tin can introduced.
Modern 1915–present	Introduction of automobile and major improvements in automobile transportation network (e.g., Routes 2, 2A, 3, 3A, 117, 126, 128/I-95, I-93, and I-495). Development, both commercial and residential, along improved transportation corridors. Bedford Airport (Hanscom Air Force Base) created in 1940s with growth of associated industrial zone. Growth of new industries, including computer technologies. Agriculture remains important in economy of some towns, with market gardens and dairies shipping produce to urban areas. The population of Middlesex County increased steadily from 1910 to 1970 (1,398,397), then declined slightly in 1980 (1,367,034). Hard white earthenware, stoneware, porcelains, and melamine (post WWII). All bottles fully automatic machine-made. Purple manganese glass. Beer can introduced 1935. Pull-tab can opening introduced 1962. Plastic products (post 1900).

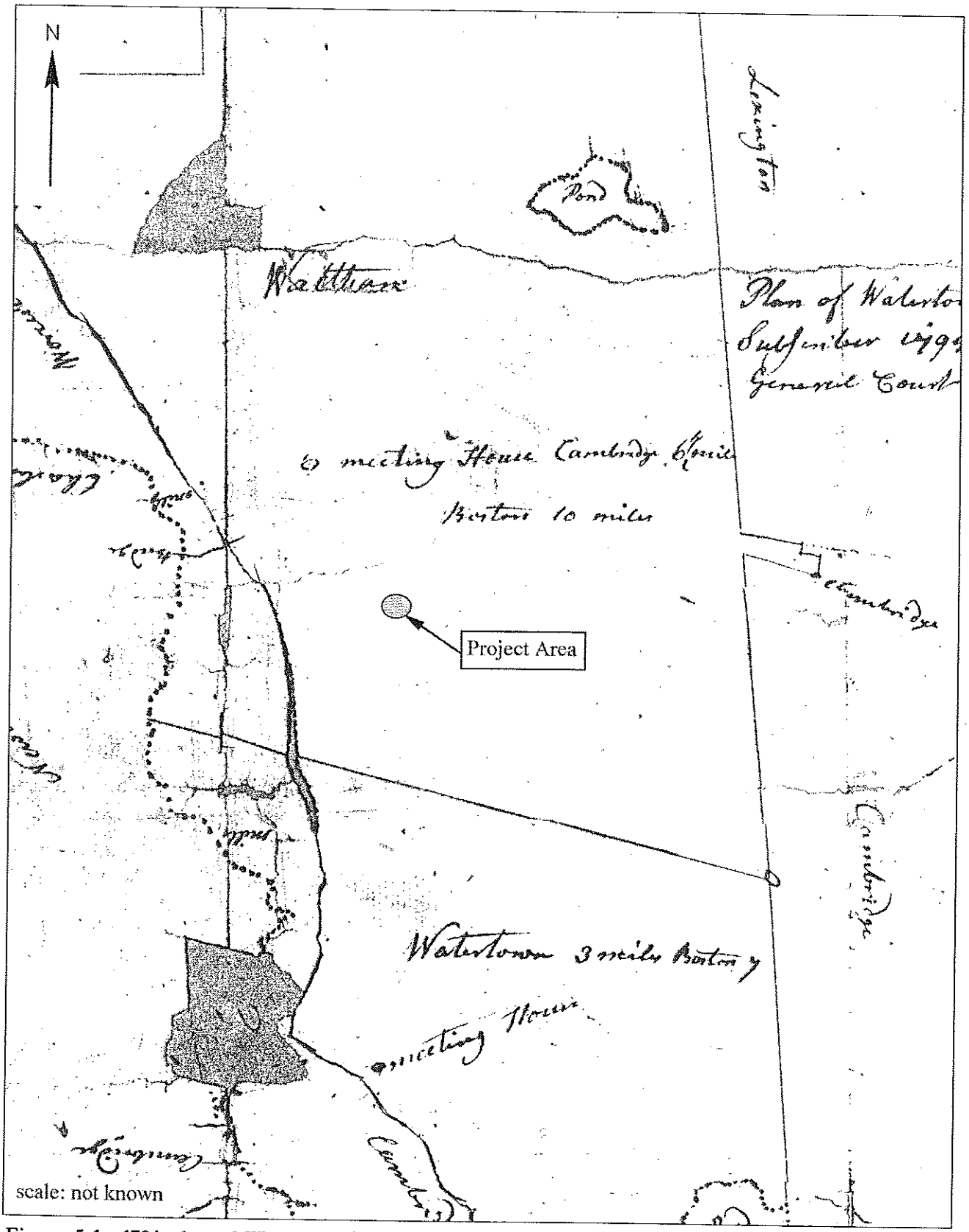

Figure 5-1. 1794 plan of Watertown/Waltham, Massachusetts showing the location of the Stonehurst project area (source: Sanderson 1794).

would operate for 131 years in the city. Additional dam and paper mills were built in the first decade of the nineteenth century including the Boston Manufacturing Company, which introduced the first power loom in the United States and was capable of all phases of cotton processing and production in one plant.

This mill, which initially employed a massive labor force of Yankee farm women, was the catalyst for the textile industry boom that would sweep across Waltham, Lowell, Lawrence, Fall River, New Bedford, and many other New England river towns. Not coincidentally, the first industrial strike in the nation was led by Waltham women in 1820 against unfair wage reductions at the Boston Manufacturing Company (BMC). BMC workers also established the Rumford Institute in 1826, designed to promote intellectual inquiry and advancement through mutual instruction in arts and sciences. As an extension of this movement, the first circulating library in Waltham was established in the same year.

Early Industrial Period (1830–1870)

An influx of immigrant labor, mostly Irish, began in the mid-nineteenth century to feed the unceasing labor demands of the city's industrial base. New factories with massive labor requirements continued to spring up during this period including, in 1836, the American Crayon Company. To feed this unceasing labor demand, Irish immigration began in earnest in 1840; Waltham quickly ballooned in response to this influx so that by the mid 1840s the city boasted 46 shops and stores, six churches, and 275 dwellings (WHS 2002). The Boston-Fitchburg Railroad line extended its operation to Waltham in 1843 almost exclusively through the influence of Boston Manufacturing Company agents who designed the route to insure service to mills.

By 1849, Waltham was beginning to outgrow its original incorporated boundaries. In response to this housing crunch, the town purchased and annexed 600 acres from the City of Newton for $1,000. The city was now an established industrial center with Irish Catholics constituting 25 percent of its population. In 1854 Aaron Dennison established the Waltham Improvement Company, later to become the Waltham Watch Company. The watch company was significant not only to the economy of Waltham but also to the industrial history of the United States for its development of an innovative technology of mass production using interchangeable parts. The company became a major employer of Yankee Protestants offering higher wages and skilled work.

Late Industrial Period (1870–1915)

As Waltham continued to grow, so did its impact on the surrounding natural resources, particularly on the water supply drawn from the Charles River (Figure 5-2, Figure 5-3). In 1873, the river was filtered and pumped by steam to a 6 million gallon open reservoir on land now owned by Brandeis University (WHS 2002). During this time, the ethnic profile of the city also began to shift with large numbers of French Canadians arriving to supplement the primarily Irish blue-collar labor force. In 1881, the Central Massachusetts Railroad began operating from Boston, through Waltham, to Hudson.

By the late nineteenth century, a major portion of Waltham's early agriculture heritage was erased through the controversial construction of the Cambridge Water Basin that destroyed part or all of 40 farms on the best farmland in the town. This public works project also employed a large immigrant

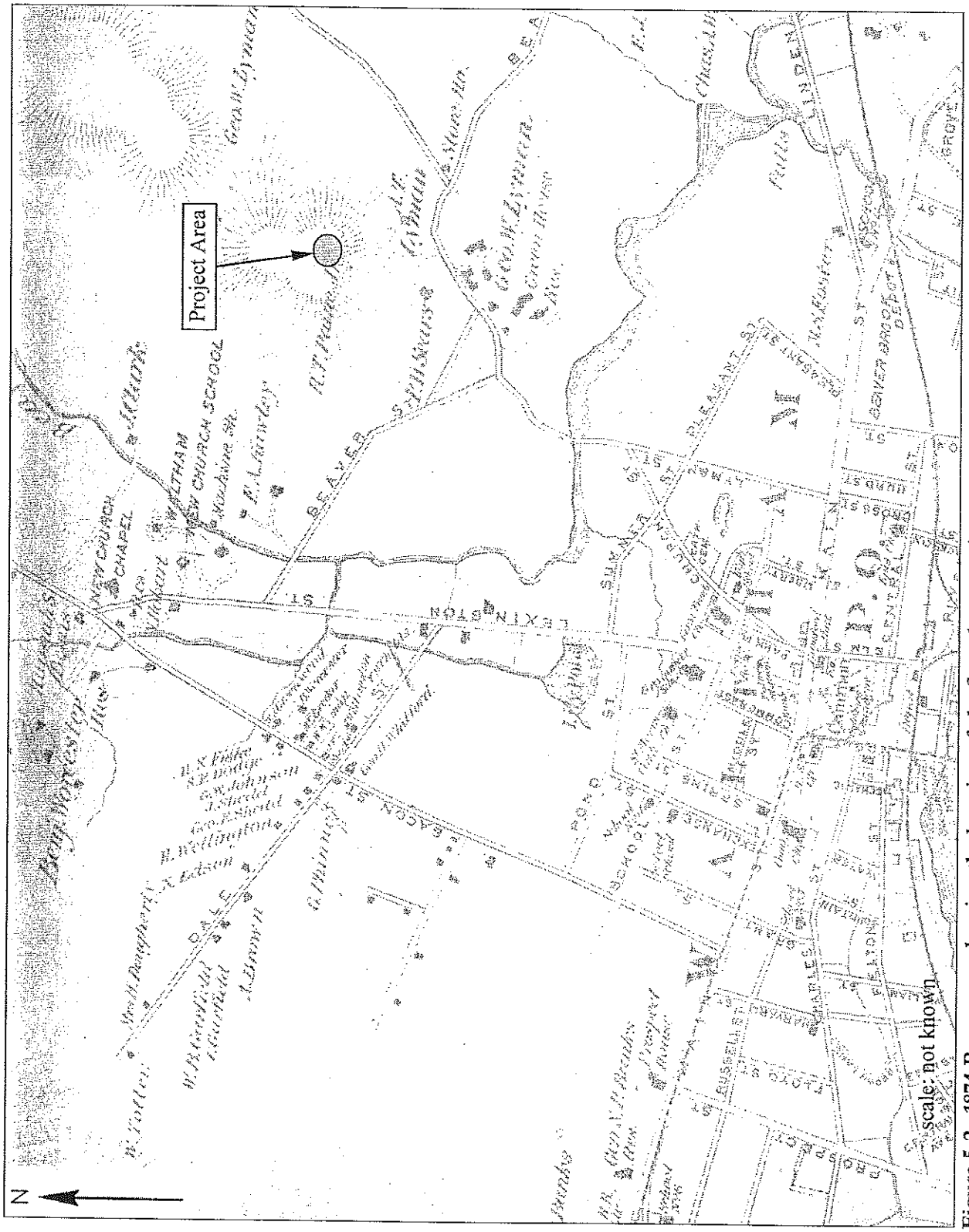

Figure 5-2. 1874 Beers map showing the location of the Stonehurst project area (source: Beers 1874).

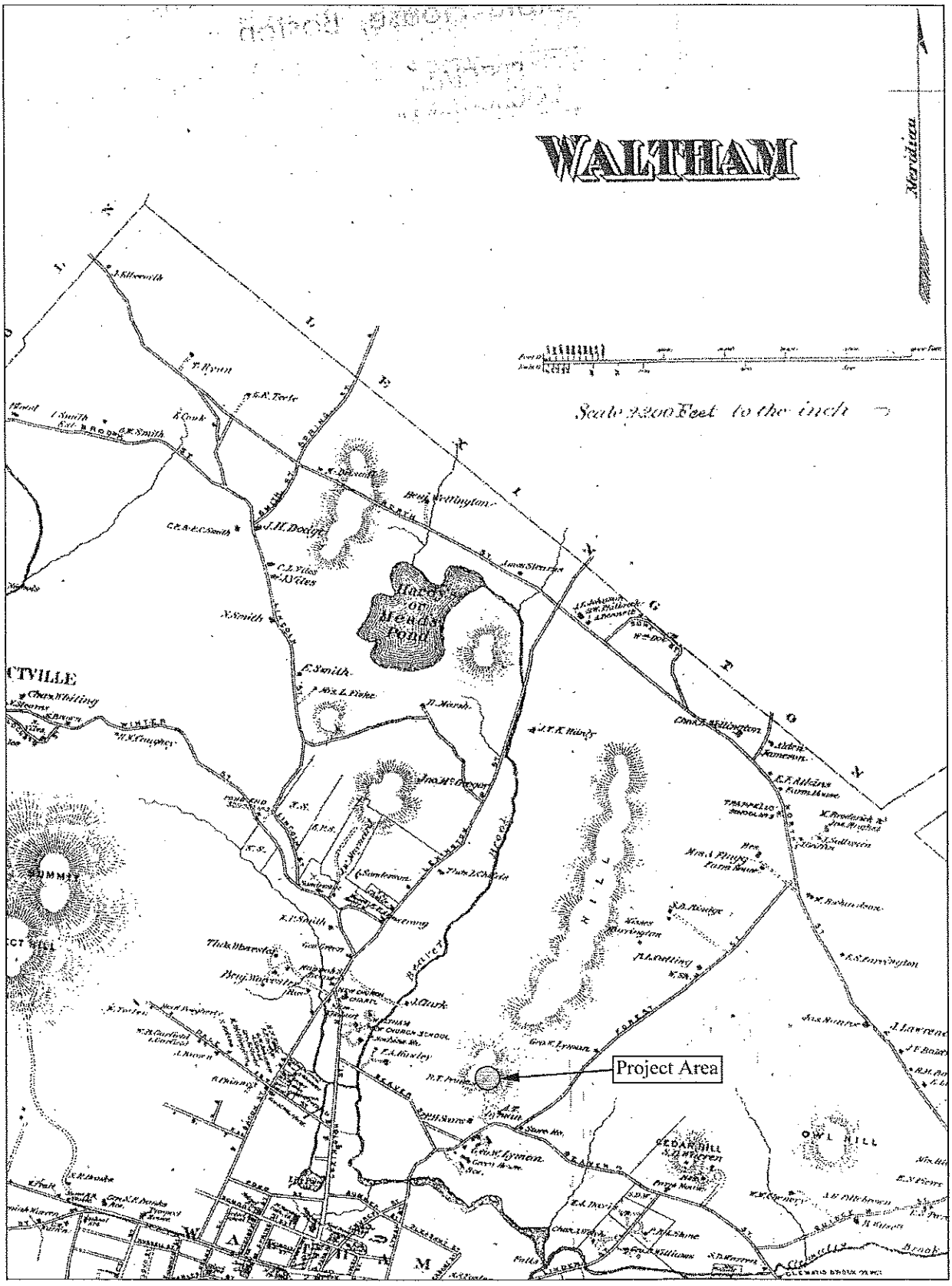

Figure 5-3. 1875 Beers map showing the location of the Stonehurst project area (source: Beers 1875).

labor force, this time mostly Italian, who were housed in 14 camps along Winter Street. Many of these workers and their families stayed on after the completion of the project and contributed to the already eclectic ethnic profile of the city.

During this period, those individuals who had capitalized on the industrial opportunities of the city began to look outward for summer retreats as a means to escape the press and pollution of the urban core they had developed. In response, wealthy communities in the uplands, away from the river, began to emerge, dotted with extravagant houses, rolling vistas, and a pointed lack of commercial or industrial properties (MHC 1982). Stonehurst represents just such a retreat. Recreational parks accessible by trolley from Boston also were developed; the Waverly Oaks (WLT-HA-2), a former grove of 26 large oak and elm trees within the Beaver Brook Reservation in Waltham, were the centerpiece of this type of recreation park in the second half of the nineteenth-century.

Modern Period (1915–Present)

By the late nineteenth and early twentieth centuries Waltham began to lose some of its industrial luster as regional markets began to give way to national markets. The economy experienced a decline after World War I and the onset of the Great Depression. Raytheon helped to alleviate some of this depression when it established its plant in the city in 1933. World War II temporarily boosted the economy of the city during the mid 1940s as did the founding of Brandies College in 1949. In general, Waltham continued on a downward industrial slide, particularly with the closing of the Waltham Watch Company in 1954 (WHS 2002).

Stonehurst, The Robert Treat Paine Estate

Stonehurst lies within the historic bounds of the Beaver/Forest Street neighborhood in Waltham. The two streets have a long history, beginning as native trails then shifting to cowpaths after European contact, and eventually serving as the borders of the elite neighborhoods that were established in the area beginning in the 1790s. The Vale, or Lyman Estate, is a fine example of a Federal-Period mansion built during that period. A portion of that property was later conveyed to Lydia Paine, wife of Robert Treat Paine, by her father, George Williams Lyman, for the purpose of building a summer retreat.

The early history of the property and how it happened to come into the Lyman family is unknown. Theodore Lyman, the first member of that family to settle in Waltham, purchased 150 acres of farmland and woodland in 1793, a property that was described by his brother-in-law as "a wretched sand heap" (Brockway 1992). The first documented structure on that property, designed by an unknown architect for Robert and Lydia Paine, was a modest Second Empire structure located roughly 1,000 ft. east of the present house site.

As the Paine family grew, so did their space requirements. By 1884 Paine was in negotiations with his friend, renowned landscape architect, Frederick Law Olmsted, and H.H. Richardson, the equally renowned architect, to expand his summer home. In the fall of 1884, the house was moved to its current location, selected by Olmsted, and construction began on the Richardson-designed addition. The house was completed in 1886, the year of Richardson's death, and christened "Stonehurst" by the Paine family (Figure 5-4).

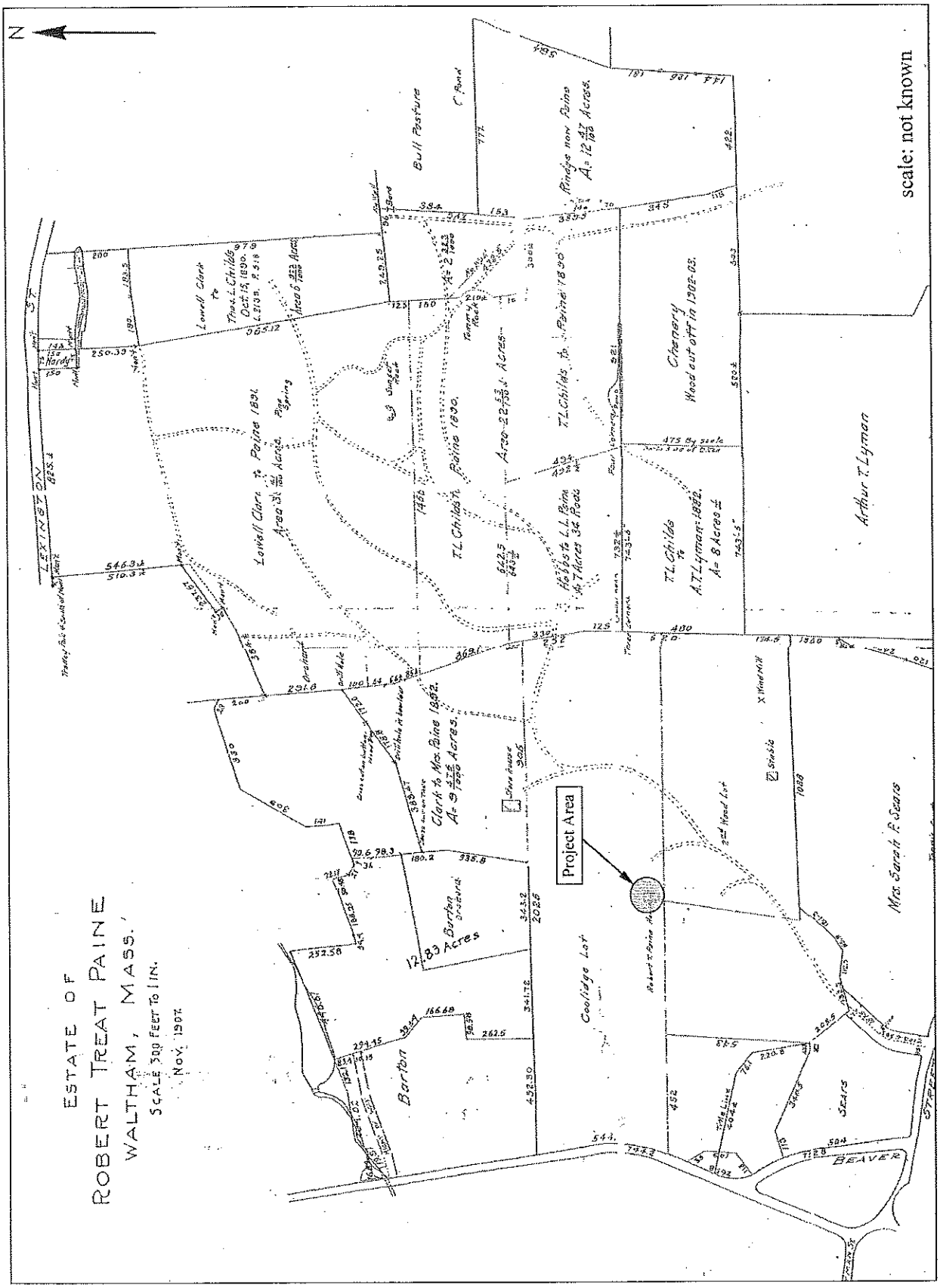

Figure 5-4. 1907 survey map of the Estate of Robert Treat Paine, Waltham, Massachusetts (source: Parks and Moore 1907).

The new house consisted of the original mansarded structure, rotated to face west with its facade intact, with the Richardson addition appended to its eastern elevation. Richardson's contribution was considerably larger than the original building and, architecturally, quite dissimilar. The house was designed with Richardson's trademark Syrian arches, a massive Palladian window, pattern-cut shinglework, and a series of three south-facing towers (Figure 5-5, Figure 5-6). Despite the seeming incongruity between the Second Empire and Shingle-Style architectural traditions, the house maintains an organic quality. This quality is largely the result of the widespread use of glacial boulders (Figure 5-7) throughout the Richardson addition that creates flowing lines between the two buildings and subtly anchors the surrounding landscape (Floyd 1983). A one-story kitchen ell also was added to the western side of the house during this period, designed in an architectural style similar to the original mansarded structure.

Olmsted's landscaping work at Stonehurst was a collaborative project with Richardson and reflects a rejection of the overly formalized and "decadent" design philosophy of the Victorian age. Olmsted, at least on paper, limited his work to the southern elevation of the house, designing a sinuous elevated terrace paved with brick and cement and supported with an outward curving fieldstone retaining wall. Perennial beds and two paths, one leading to the driveway and east yard and the other to the west field across a small ravine and rhododendron bed, completed the terrace and effectively tied the disparate architectural elements to one another.

While the architectural profile of the house has changed very little over time, the landscape profile has experienced a series of discrete design periods including the Olmstedian Period (1886–1910) associated with Robert Treat Paine, Sr.'s tenure at the estate; the Gardenesque Period (1910–1961), during which time Robert Treat Paine, Jr. and family occupied the house, and; the Simplified Landscape (1961–1999), the period during which the house has been in the hands of the city of Waltham (Berg 1999).

The Olmstedian period coincides with Paine Sr.'s time spent at the house and is distinguished by a marked lack of artificiality and an emphasis of naturalistic landscapes dominated by native plant species and large, free-flowing perennial beds. Robert Paine Jr. inherited the house at his father's death in 1910 and imposed his preference for a more Gardenesque style; showier native and non-native perennial species such as irises, gladiolas, peonies, and lilacs began to dominate the landscape and a system of formal equestrian trails were developed across the property. After Paine Jr.'s death in 1961, the Stonehurst grounds no longer were maintained at their previous level and the natural environment began to reassert itself, obscuring or destroying many landscape features and all of the original outbuildings. Currently, the immediate landscape surrounding the house comprises several simple perennial beds and is dominated by large expanses of mown lawn.

Expected Historic Resources

Despite the high level of documentation associated with the Stonehurst estate, the proposed work area encompasses a portion of the property that has received comparatively less architectural or landscape attention than other parts of the grounds. The proposed infiltrator chamber and associated drainage pipes running along the north and west elevations of the house lie in proximity to the kitchen ell addition

Figure 5-5. Archival photograph of Stonehurst, view northwest, ca. 1920 (source: Abbott 2003).

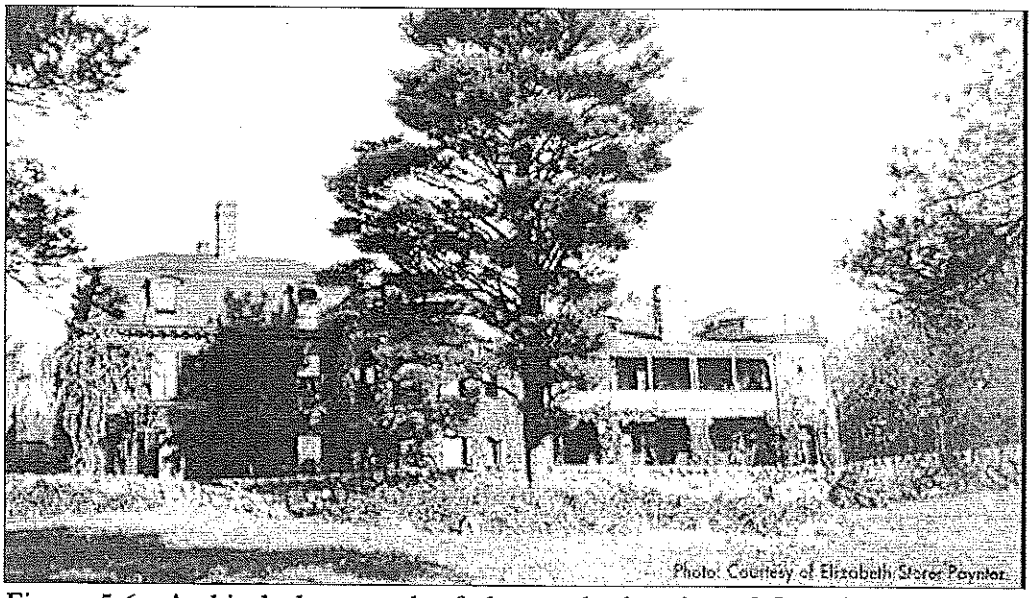

Figure 5-6. Archival photograph of the south elevation of Stonehurst, ca. 1905 (source: Paynter 2003).

and the western elevation of the original mansardic structure. Landscape reconstruction maps suggest that this area has remained virtually unchanged from a floral design perspective (Brockway 1992). These maps, however, have been re-created through examination of historic photographs and personal correspondence and, as a consequence, may reflect an aesthetic or topical bias that ignores the more utilitarian sections of the house.

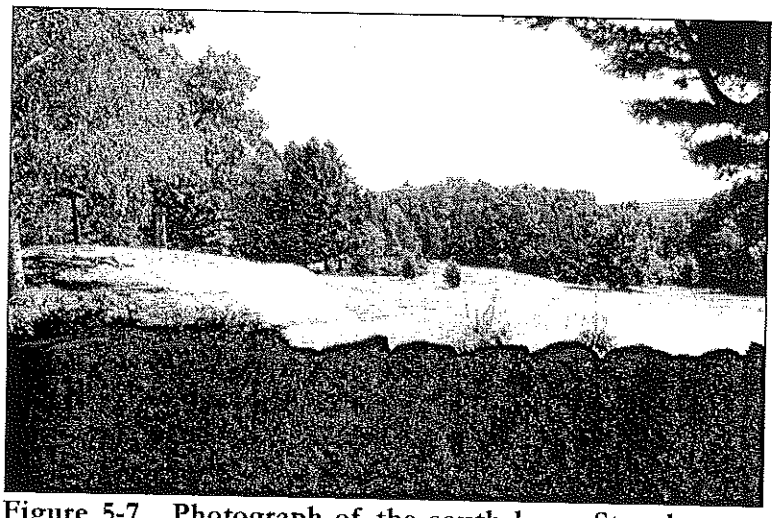

Figure 5-7. Photograph of the south lawn, Stonehurst – "Glacier Rock" is visible in the left middleground.

Archaeological excavations at The Vale, home of Lydia Paine's father, George Lyman, demonstrates the potential for the recovery of intact ornamental and utilitarian landscape features such as formal English-style garden paths and rubble-filled drainage ditches (Pinello 1999; Pinello and White 2000). In light of the proximity of the proposed drainage improvements to the kitchen and to the relocated portion of the Paine house, potential historic period resources may include middens, informal pathways, buried drainage ditches dating to the relocation, privacy fences, and/or the remains of previously undocumented vegetable, herb, or ornamental gardens. Small auxilliary outbuildings, distinct from the large barn, greenhouse, and shed structures identified southeast of the main house (DePaoli 1991) also may be present. The recovery of diagnostic cultural material (ceramics, molded and/or dated bottles, etc.) in association with the features described above may help to assign the features to one of the main landscape periods of the estate.

Finally, there is a possibility that cultural material associated with an undocumented occupation of the property pre-dating both the Lyman and Paine families may be identified. This data may take the form of remnant buried foundation remains, wells, stone walls, middens, or privies

CHAPTER SIX

RESULTS OF FIELDWORK

Intensive (locational) Survey Results

The intensive (locational) survey portion of the archaeological fieldwork conducted within the Stonehurst project area comprised 19, 50-x-50-cm test pits. The test pits were excavated along the length of the proposed underground drainage system including the location of the infiltrator drainage chamber and the emergency overflow outlet pipe (Figure 6-1, Back Pocket). Three transects (Transect A–C), and one judgmental test pit (JTP-1) were used to sample the project area at 5- and 7.5-m intervals.

Transect A was composed of two test pits placed at a 5-m interval along the northwest corner of the Richardson addition (Figure 6-2; see Figure 6-1). Both test pits revealed a landscaped topsoil horizon followed by deep layers of redeposited topsoil and subsoil. TA-2 terminated at a rock impediment at 65 cm below surface (cmbs). TA-1, however, showed evidence of the builders trench associated with the basement window well followed by a possibly intact brown silty fine sand A_1 horizon (Figure 6-3). The topsoil was followed by B_1 and B_2 strata and terminated at 78 cmbs. Sixty-four pieces of historic cultural material including coal, brick, roofing and framing nails, stoneware drainage pipe fragments, and a creamware and pearlware sherd, were recovered from fill deposits from 0–65 cmbs (Appendix A).

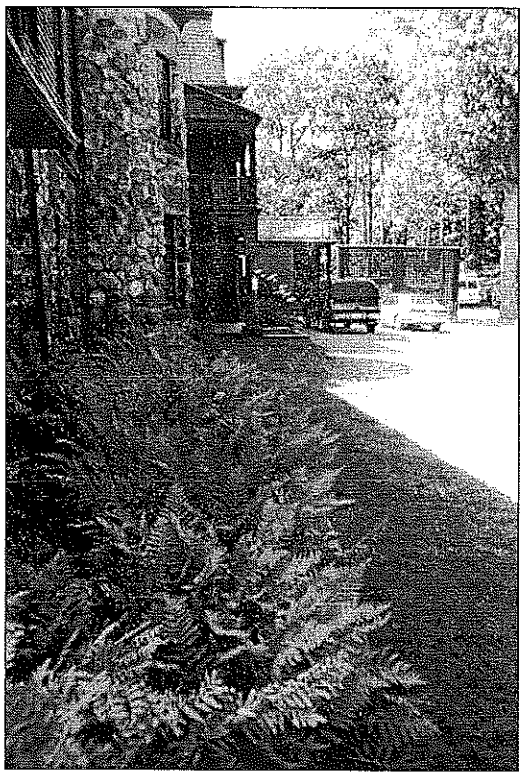

Figure 6-2. Photograph showing the location of Transect A, view west, Stonehurst project area, Waltham, Massachusetts.

Transect B comprised 12 test pits excavated along the northern and western elevations of the house staggered at 5- and 7.5-m intervals (see Figure 6-1). TB-1 through TB-4 were placed along the edge of the gravel parking area on the north side of the kitchen ell (Figure 6-4). These test pits revealed multiple deposits of redeposited soil with a high density of jumbled granite fieldstone cobbles and much larger pieces of broken ledge fragments, all of which was interpreted as regraded cellar ejecta (see Figure 6-3). TB-5 through TB-12 were excavated along the western elevation of the house along the back of the kitchen ell addition and the original mansarded structure (Figure 6-5). These profiles were comparatively less rocky than those along the northern side of the house, but were similar in the occurrence of deep redeposited fill layers (see Figure 6-3).

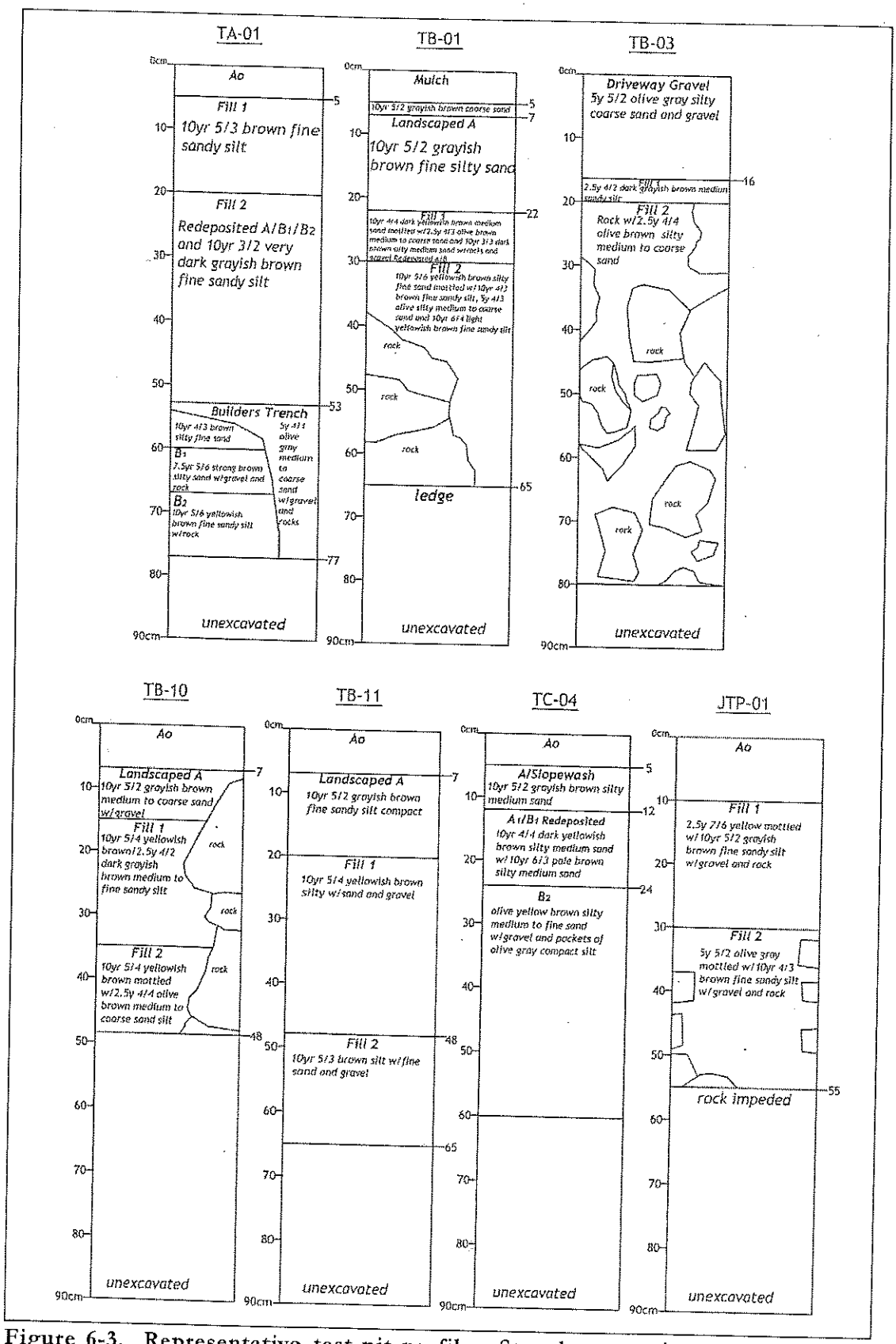

Figure 6-3. Representative test pit profiles, Stonehurst project area, Waltham, Massachusetts.

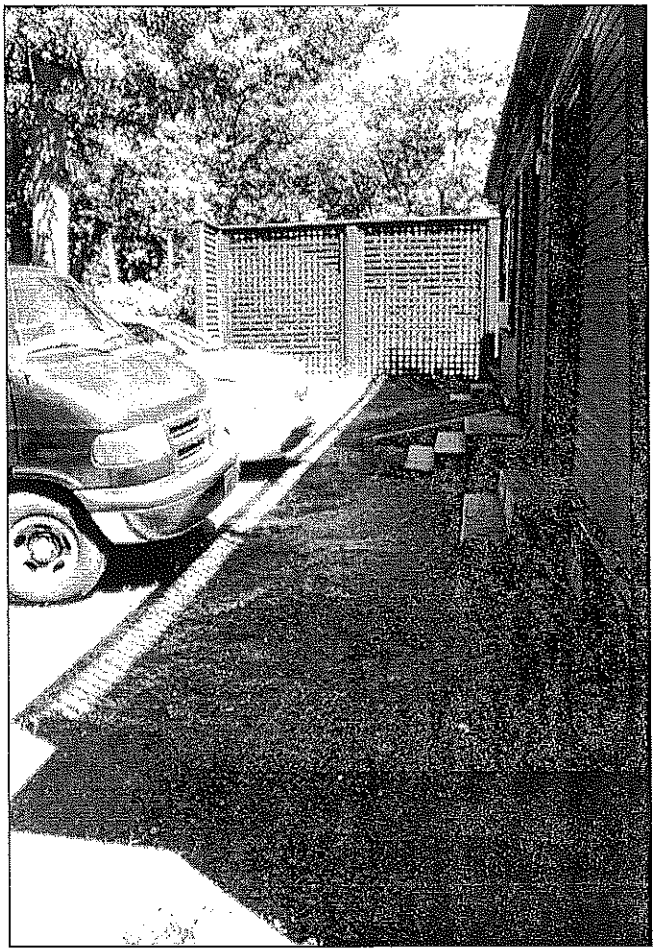

Figure 6-4. Photograph showing the location of TB-1 through TB-4, view east, Stonehurst project area, Waltham, Massachusetts.

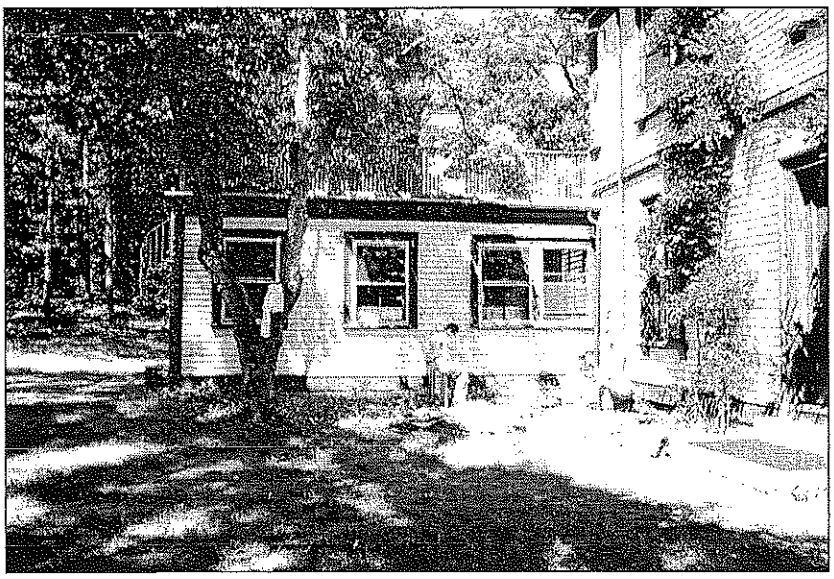

Figure 6-5. Photograph showing the location of TB-5 through TB-12, Stonehurst project area, Waltham, Massachusetts.

A series of fieldstones was encountered in the east wall of TB-10, located at the juncture of the service wing/kitchen and original Mansard-style building (see Figure 6-1, 6-3). Excavation of this test pit was terminated at roughly 50 cmbs to better explore the feature with 1-x-1-m excavation units (see below).

The test pits along Transect B terminated at an average depth of 53 cmbs and contained 74 pieces of historic cultural material including construction debris (nail, brick, and window glass fragments, mortar) and a small number of late-nineteenth- to twentieth-century ceramic sherds including whiteware and ironstone (see Appendix A).

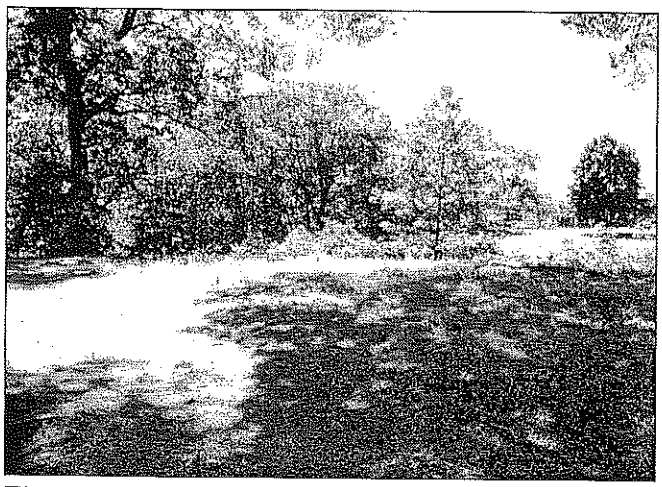

Figure 6-6. Photograph showing the locations of the proposed infiltration chamber system and TC-1 and TC-2, view southwest, Stonehurst project area, Waltham, Massachusetts.

Transect C, comprising four test pits spaced at 5- and 7.5-m intervals, was placed in the location of the proposed infiltration chambers and continued downslope toward the proposed drainage outlet (Figure 6-6, Figure 6-7; see Figure 6-1). With the exception of TC-1, which contained a deep series of redeposited fill soils similar to those in Transects A and B, the remaining test pits along Transect C exhibited minimally disturbed soil profiles. TC-4, for example, opened with a slopewash stratum to 12 cmbs, followed by a turbated/redeposited A_1/B_1 layer to 24 cmbs, and terminated at 60 cmbs in stratified B_2 subsoil (see Figure 6-3). Despite the comparative integrity of this area, the steep slope and marshy conditions at the base of the slope resulted in the recovery of only 18 pieces of historic cultural material from fill deposits ranging from 0–57 cmbs (see Appendix A). The assemblage included construction debris, stoneware utility pipe fragments, and a single piece of late-nineteenth-century porcelain.

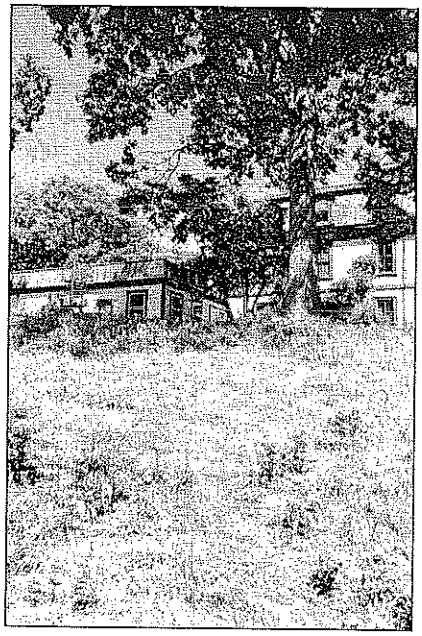

Figure 6-7. Photograph showing the locations of the proposed drainage pipe for the infiltration chamber and TC-3 and TC-4, view northeast, Stonehurst project area, Waltham, Massachusetts.

JTP-1 was placed 5 m from TC-4, just west of the proposed location of the riprap drainage outlet at the base of the west-facing slope (see Figure 6-1). This test pit contained two grayish brown silty fill deposits and a density of gravel and rock, but no cultural material.

Site Examination Results

Two 1-x-1-m EUs (EU 1 and EU 2) were placed at TB-10 in the location of the identified stone feature, designated Feature 1. Excavation of the two EUs to a depth of 10 cmbs revealed an intact, partially mortared fieldstone chamber measuring roughly 80-x-80-cm square and 100-cm deep (Figure 6-8, Figure 6-9; see Figure 6-1).

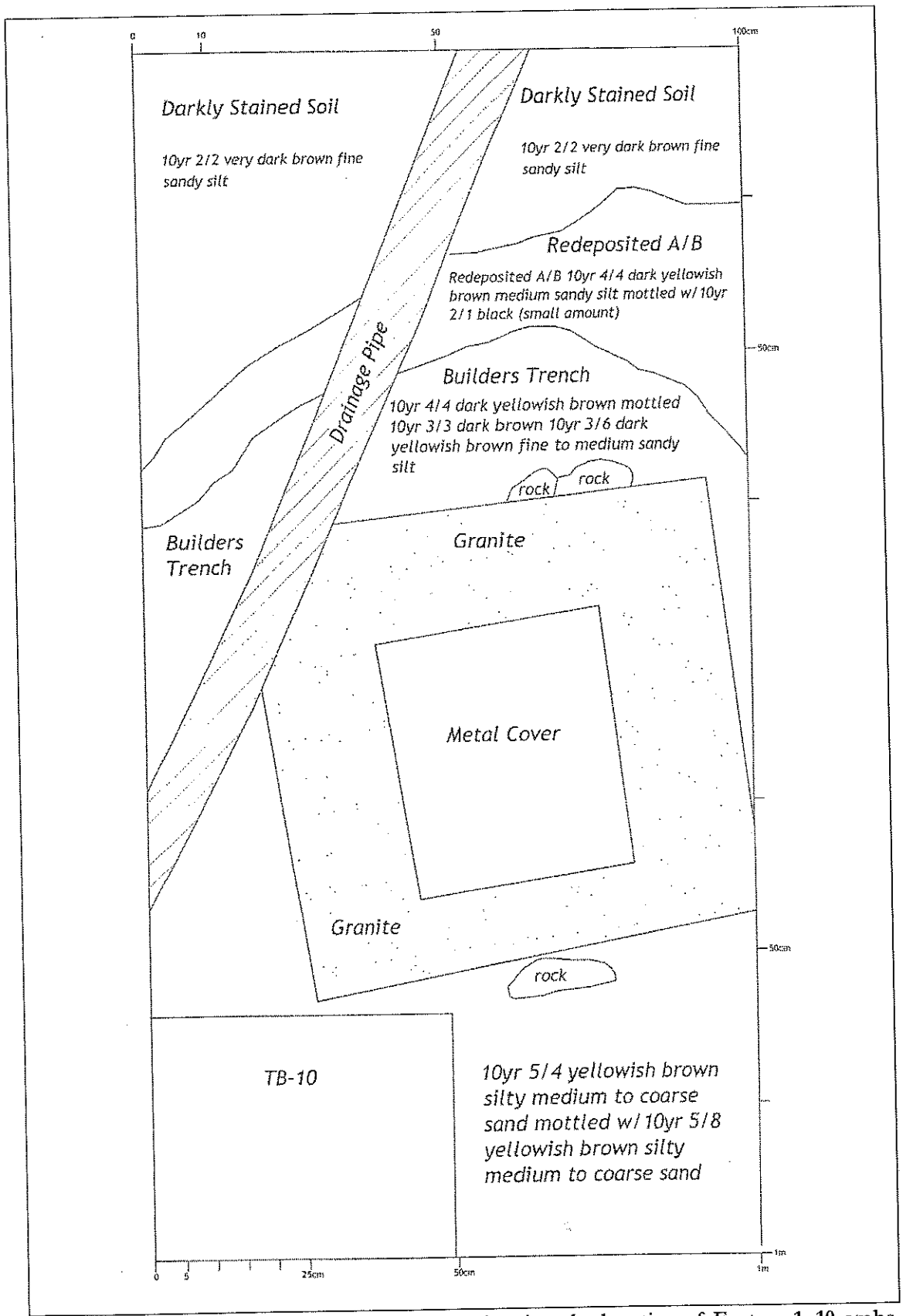

Figure 6-8. Plan drawing of EU 1 and EU 2 showing the location of Feature 1, 10 cmbs, Stonehurst project area, Waltham, Massachusetts.

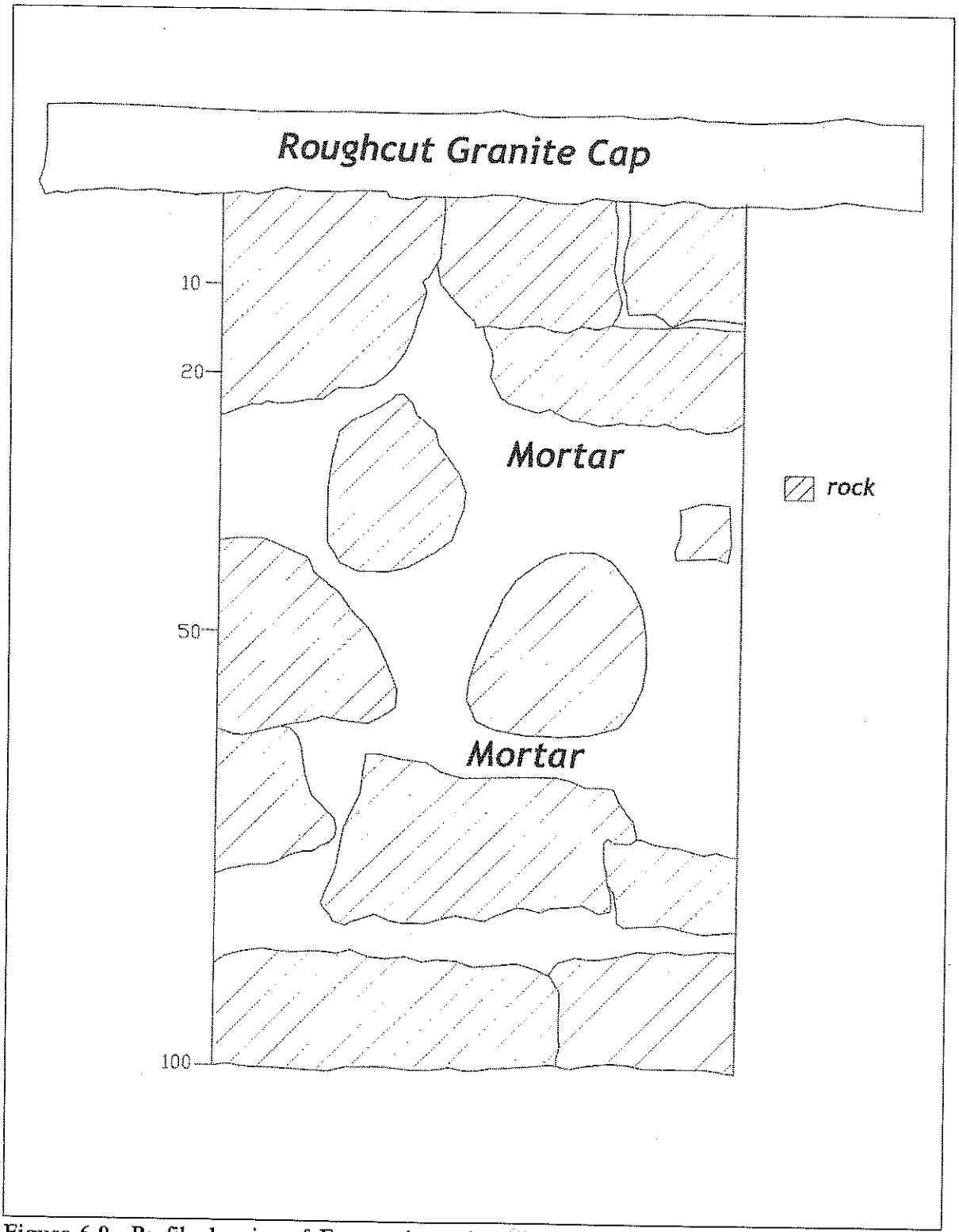

Figure 6-9. Profile drawing of Feature 1, north wall, 0–100 cmbs, EU 1 and EU 2, Stonehurst project area, Waltham, Massachusetts.

A modern black plastic drainage pipe also was uncovered at the northern corner of the feature, but did not appear to be directly associated with it.

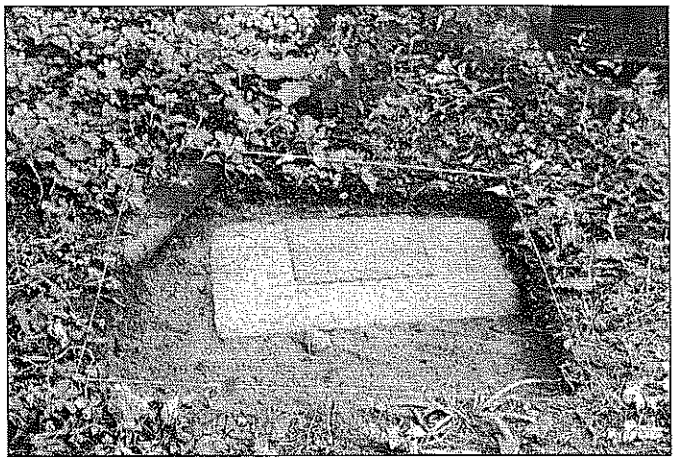

Figure 6-10. Photograph of partially exposed Feature 1, 10 cmbs, EU 1, view east, Stonehurst project area, Waltham, Massachusetts.

The chamber was covered with a cut granite block and accessible via a narrow opening in the block capped with a removable iron plate (Figure 6-10, Figure 6-11). A flanged stoneware pipe was observed running across the bottom of the chamber; investigations in the basement of the house revealed that the pipe connects to the current sewage system and drains west into a cesspool below the proposed infiltrator chamber. Because the pipe and chamber are part of a functioning drainage system for the house, the feature was not dismantled nor was the soil surrounding the feature excavated for fear of destabilizing the chamber.

Forty-one pieces of historic cultural material were recovered from the first 10 cm of landscaped topsoil in EU 1 and EU 2 (see Appendix A). Recovered artifacts included flowerpot fragments, stoneware utility pipe, bottle and window glass, a cork stopper, a piece of quahog shell, and nail and plastic fragments.

Figure 6-11. Photograph of fully exposed and uncapped Feature 1, 10 cmbs, EU 1 and EU 2, view east, Stonehurst project area, Waltham, Massachusetts.

CHAPTER SEVEN

INTERPRETATIONS AND RECOMMENDATIONS

George Lyman Paine, son of Robert and Lydia Paine, best explains the cause of the altered soils observed throughout the Stonehurst project area. Asked about the construction of the house, George recalled that:

> Wanting a larger house for his then five children Papa took our family abroad for the summer of 1885, sailing on the Cunarder "Etruria" so that the house could be raised up on railroad ties and slowly, very slowly, pulled up the slope to where it now stands with the fine stone addition of Henry Hobson Richardson, the leading architect of the country. To make room for this new house we had to cut down many big white and black oaks and blast out the deeply rooted stumps, using two or three sticks of dynamite. It was delightfully exciting to hear and see the explosion, when Walter Clark shouted "Fire"" and pressed the detonator. . . . (RTP n.d a).

This site clearing process combined with the subsequent foundation excavation and terracing along the southern elevation of the house likely destroyed any natural soil strata that could have contained prehistoric period resources. The test pit profiles revealed redeposited soils comprised of sandy silts with large amounts of gravel, cobbles, and rock. These soils are a combination of blasted earth and regraded cellar ejecta related to the construction of the house, ca. 1884–1886. While the soils did contain a mixture of nineteenth- and early-twentieth-century cultural material (see Chapter 6, Appendix A), the altered contexts and lack of associated intact features precludes a detailed interpretation of the material. The recovery of construction-related debris (brick, mortar, window glass, nails) and ball clay pipe fragments reflects material discarded during the documented relocation and construction episodes of the house.

The function of the Feature 1 also can be inferred from the surviving Stonehurst construction records. Richardson was extremely precise in his specifications for the design of the house, outlining everything from the architectural details of the interior space to the engineering considerations for the exterior space. Concerning the "Drains for House Waste," Richardson wrote:

> Lay drain from man hole (sic) to cesspool, located on dry ground 100 ft. north of house, of best Akron vitrified socket drain pipe of size 4". All to be laid to even grade with as much fall as possible, solidly bedded, carefully jointed in cement and wiped inside. Use one-eighth bends.
>
> At connection with iron pipe set running trap with hand hole, and build proper man hole (sic) of stone. Man hole to have cast iron ring and cover with lifting ring and be draw in at top to receive same (RTP n.d. b).

The configuration of the surviving waste drainage system suggests that the cesspool was relocated to the west side of the property during construction, contrary to Richardson's instructions. This move was necessary to direct the wastewater downslope from the house as opposed to trying to force it upslope to the north. The stone chamber identified in EU 1 and EU 2 appears to have been built to provide access to the wastewater pipe within it. This access would have been necessary to clear out any accumulated clogs and impediments and to make repairs to the pipe joint when necessary.

The angle of the stoneware pipe inside of the chamber aligns directly with the cesspool at the base of the western slope. Furthermore, the physical properties of the pipe and stone chamber, including the vitrified Akron stoneware and manhole cover with iron ring, directly correlate to Richardson's original specifications. These physical and locational factors indicate that Feature 1 functioned as an element of the overall waste drainage system installed during the original house construction.

Recommendations

The Stonehurst project area contains no potentially significant prehistoric or historic period archaeological deposits. The identified fieldstone chamber and drainage pipe do not represent an individually significant historical resource eligible for listing in the NRHP, nor does it substantively contribute to the interpretation of the estate. No additional archaeological or documentary work is recommended for the Stonehurst project area.

REFERENCES

Abbot, Shepley Bullfinch Richardson
2003 *Undated archival photograph of Stonehurst.* Retrieved March 26, 2003 from the World Wide Web: http://stonehurstwaltham.org/stor_s.html.

Beers, F.W.
1874 *Atlas of Middlesex County, Massachusetts.* F.W. Beers and Company, New York, NY.

1875 *Atlas of Middlesex County, Massachusetts.* F.W. Beers and Company, New York, NY.

Berg, Shary Page
1999 *Landscape Master Plan Update, Robert Treat Paine Estate.* Prepared for the City of Waltham and the Robert Treat Paine Historical Trust. On file at the Robert Treat Paine Estate, Stonehurst, Waltham, Massachusetts.

Bickford, Walter E., and Ute Janik Dymon, editors
1990 *An Atlas of Massachusetts River Systems, Environmental Designs for the Future.* Massachusetts Department of Fisheries, Wildlife and Environmental Law Enforcement. University of Massachusetts Press, Amherst, MA.

Billings, Marland P.
1976 Bedrock Geology of the Boston Basin. In *Geology of Southeastern New England*, edited by Barry Cameron. Science Press, Princeton, NJ.

Brockway, Lucinda A
1992 *Historic Grounds Report, Robert Treat Paine Estate, Waltham, Massachusetts.* On file at the Robert Treat Paine Estate, Stonehurst, Waltham, Massachusetts.

Cherau, Suzanne G., Raymond D. Pasquariello, and Kerrylynn Boire
2000 *Archaeological Reconnaissance Survey, Charles River Natural Valley Storage, Bellingham, Dedham, Dover, Franklin, Holliston, Medfield, Medway, Millis, Natick, Needham, Newton, Norfolk, Sherborn, Walpole, Wrentham, & West Roxbury, Massachusetts.* PAL Report No. 1150. Prepared for U.S. Army Corps of Engineers, Concord, MA.

DePaoli, Neil
1991 *Paine Estate "Barn" Site Dig: A Synthesis of Historical Archaeology and Public Education.* On file at the Robert Treat Paine Estate, Stonehurst, Waltham, Massachusetts.

Dincauze, Dena F.
1968 *A Preliminary Report on The Charles River Archaeological Survey.* On file, PAL, Pawtucket, RI.

1973 Prehistoric Occupation of the Charles River Estuary: A Paleographic Study. *Archaeological Society of Connecticut Bulletin* 38:25–29.

1974 An Introduction to the Archaeology of the Greater Boston Area. *Archaeology of Eastern North America* 2(1):39–67.

1975 Ceramic Shards from the Charles River Drainage. *Bulletin of the Archaeological Society of Connecticut* 39:5–18.

Donta, Christopher L.
2001 *Archaeological Site Examination Survey of the Oak Knoll Prehistoric Site: An Orient Phase Camp, Lincoln, Massachusetts.* On file at the Massachusetts Historical Commission, Boston, MA.

Elia, Ricardo, David B. Landon, and Nancy S. Seasholes
1989 *Phase II Archaeological Investigations of the Central Artery/Third Tunnel Project in Boston, Massachusetts.* On file at the Massachusetts Historical Commission, Boston, MA.

Floyd, Margaret Henderson
1983 *H.H. Richardson, Frederick Law Olmsted, and the House for Robert Treat Paine.* Winterthur Portfolio, pp. 227–248.

Hasenstab, Robert
1991 Wetlands as a Critical Variable in Predictive Modelling of Prehistoric Site Locations: A Case Study from the Passaic Basin. *Man in the Northeast* 42:39–61.

Hodges, Mand de Leigh
1980 *Crossroads on the Charles, A History of Watertown, Massachusetts.* Phoenix Publishing, Canaan, NH.

Hume, Ivor Noel
1969 *A Guide to Artifacts of Colonial America.* Alfred A. Knopf, New York, NY.

Hurd, D. Hamilton
1890 *History of Middlesex County, Massachusetts,* Vol. III. Lewis and Company, Philadelphia, PA.

Johnson, Frederick
1942 The Boylston Street Fishweir. Papers of the Robert S. Peabody Foundation for Archaeology, Vol. II. Phillips Academy, Andover, MA.

1949 The Boylston Street Fishweir II. Papers of the R. S. Peabody Foundation for Archaeology, Vol. II. Phillips

Kaye, Clifford A.
1976 Outline of the Pleistocene Geology of the Boston Basin. In *Geology of Southeastern New England*, edited by Barry Cameron, pp. 46–63. Science Press, Princeton, NJ.

Kenyon, Victoria
1983 Prehistoric Archaeology in the Merrimack River Valley. *Man in the Northeast* 25:1–5.

King, Marsha
1988 Historic Site Location in Large Project Areas. Paper presented at the 28th Annual Meeting of the Northeastern Anthropological Association, Albany, NY.

Kryder-Reid, Elizabeth
1994 As is the Gardener; so is the Garden: The Archaeology of Landscape as Myth. Historical Archaeology of the Chesapeake, Paul Shackel and Barbara Little, eds., Washinton, Smithsonian Institution Press, pp. 131–148.

Leone, Mark, Elizabeth Kryder Reid, Julie Ernstein, and Paul Shackel
1989 Power Gardens of Annapolis. Archaeology 42(2): 35–39, 74–75.

Massachusetts Historical Commission
1980a *Town Reconnaissance Survey Report: Watertown.* On file, Massachusetts Historical Commission, Office of the Secretary of State, Boston, MA.

1980b *Town Reconnaissance Survey Report: Waltham.* On file, Massachusetts Historical Commission, Office of the Secretary of State, Boston, MA.

1982 *Historic and Archaeological Resources of the Boston Area: A Framework for Preservation Decisions.* Massachusetts Historical Commission, Office of the Secretary of State, Boston, MA.

McManamon, Francis P.
1990 A Regional Perspective on Assessing the Significance of Historic Period Sites. *Historical Archaeology* 24(2):14–22.

Miller, George L.
1990 Classification and Economic Scaling of Nineteenth Century Ceramics. *Historical Archaeology* 14(1):1–40.

1991 A Revised Set of CC-Index Values for English Ceramics. *Historical Archaeology* 25(1):1–25.

Miller, George L., and Silas D. Hurry
1983 Ceramic Supply in an Economically Isolated Frontier Community: Portage County of the Western Ohio Reserve, 1800–1825. *Historical Archaeology* 17(2): 80–92.

Mulholland, Mitchell T.
1984 *Patterns of Change in Prehistoric Southern New England: A Regional Approach.* Unpublished Ph.D. dissertation, Department of Anthropology, University of Massachusetts, Amherst, MA.

National Park Service
1983 Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines. *Federal Register* 48(190). National Park Service, Department of the Interior, Washington, D.C.

1985 Guidelines for Local Surveys: A Basis for Preservation Planning. *National Register Bulletin* 24. National Park Service, Department of the Interior, Washington, D.C.

Nicholas, George P.
1991 Places and Spaces: Changing Patterns in Wetland Use in Southern New England. *Man in the Northeast* 42:75–98.

Parks, Chas. F., and J. Fred Moore
1907 *Estate of Robert Treat Paine, Waltham, Massachusetts.* On file at the Robert Treat Paine Estate, Stonehurst, Waltham, MA.

Paynter, Elizabeth Storer
2003 *Undated archival photograph of Stonehurst.* Retrieved March 26, 2003 from the World Wide Web: http://stonehurstwaltham.org/stor_s.html.

Pinello, Martha E.
1999 *An Archaeological Site Examination of the Peach Wall at the Vale, the Lyman Estate, Waltham, Massachusetts.* On file at the Massachusetts Historical Commission, Boston, MA.

Pinello, Martha E., and Carolyn White
2000 *An Archaeological Site Examination for the Historic Plant Nursery at the Vale, the Lyman Estate, Waltham, Massachusetts.* On file at the Massachusetts Historical Commission, Boston, MA.

Ritchie, Duncan, Marsha K. King, and Martha Lance
1988 *Archaeological Survey of Westville Dam and Reservoir in Southbridge and Sturbridge, Massachusetts.* The Public Archaeology Laboratory, Inc. Report No. 158-2. Submitted to IEP, Inc., Northborough, MA and the Army Corps of Engineers, New England Division, Waltham, MA.

Robert Treat Paine Estate Archives (RTP)
n.d. a *Writings regarding early Stonehurst landscape, interview with George Lyman Paine, b. 1874. Reminiscences, 1965.* Site Documentation Binder, Volume 4. On file at the Robert Treat Paine Estate, Stonehurst, Waltham, Massachusetts.

n.d. b *Richardson Addition, Specifications.* Site Documentation Binder, Volume 2. On file at the Robert Treat Paine Estate, Stonehurst, Waltham, Massachusetts.

Sanderson, Abner
1794 *Plan of Watertown and Waltham.* On file, Massachusetts State Archives, Maps and Plans No. 1202, Boston, MA.

Simon, Brona G.
1991 Prehistoric Land Use and Changing Paleoecological Conditions at Titicut Swamp in Southeastern Massachusetts. *Man in the Northeast* 42:63–74.

Snow, Dean
1980 *The Archaeology of New England.* Academic Press, New York, NY.

South, Stanley A.
1977 *Method and Theory in Historical Archaeology.* Academic Press, New York, NY.

Thorbahn, Peter F.
1982 *The Prehistoric Settlement Systems of Southern New England: Final Report of The Interstate 495 Archaeological Data Recovery Program,* vol. I. Public Archaeology Laboratory, Department of Anthropology, Brown University Report. Submitted to the Massachusetts Department of Public Works, Boston, MA.

Thorbahn, Peter F. (editor)
1984 *Survey and Planning Project Completion Report: Prehistoric Land Use Zones Along the Taunton River.* The Public Archaeology Laboratory, Inc. Report No. 29. Submitted to the Massachusetts Historical Commission, Office of the Secretary of State, Boston, MA.

Thorbahn, Peter, F., Leonard Loparto, Deborah Cox, and Brona Simon
1980 *Prehistoric Settlement Processes in Southern New England: A Unified Approach to Cultural Resource Management and Archaeological Research.* Public Archaeology Laboratory, Department of Anthropology, Brown University Report. Report on file, Massachusetts Historical Commission, Office of the Secretary of State, Boston, MA.

United States Department of Agriculture
1991 *Middlesex County, Massachusetts: Interim Soil Survey Report.* Soil Conservation Service. U.S. Government Printing Office, Washington, D.C.

Upton, Dell
1990 Imagining the Early Virginia Landscape. Earth Patterns: Essays in Landscape Archaeology, Kelso and Most, eds. Charlottesville, University Press of Virginia.

Walker, George H. & Company
1892 Map of Waltham, Massachusetts. Map on file, Massachusetts Historical Commission, Office of the Secretary of State, Boston, MA.

Waltham Historical Society (WHS)
2002 *Key Dates in the History of Waltham, Massachusetts.* Retrieved July 17, 2002 from the World Wide Web: http://www.waltham-community.org/history.html.

Zen, E., Richard Goldsmith, Nicholas Ratcliffe, Peter Robinson, Rolfe Stanley, Norman Hatch, Andrew Shride, Elaine Weed, and David Wones
1983 *A Bedrock Geologic Map of Massachusetts.* U.S. Geological Survey, Commonwealth of Massachusetts, Department of Public Works, Boston, MA.

Appendix A

CATALOG OF CULTURAL MATERIAL

Appendix A. Catalog of Cultural Materials, Stonehurst Estate, Stonehurst Site, Intensive Survey.

Unit	Depth	Strata	Material	Function	Type	Count
EU-01	00-10	Ao/Lan.	Brick	Construction		3
			Coal	Light/heat/cooking item		1
			Construction Materials	Construction	Caulk	1
			Glass	Bottle	Liquor	1
				Curved Glass		2
				Flat glass		2
			Iron	Construction	Roofing Nail	1
				Hardware	Machine cut nail	3
			Mortar	Construction		1
			Plastic	Unidentified		1
			Red Bodied Coarse	Farm/shop/home	Flower pot	3
			Stoneware	Utilities	Utility Pipe	1
EU-02	00-10	Ao/Lan.	Brick	Construction		5
			Glass	Flat glass		4
				Light/heat/cooking item	Lantern/chimney item	2
			Glass Molded	Bottle		1
			Historic Cork	Bottle	Stopper	1
			Iron	Hardware	Square Nail	1
			Plastic	Unidentified		1
			Porcelain	Ceramic Sherd		1
			Red Bodied Coarse	Farm/shop/home	Flower pot	3
			Shell	Bivalve	Quahog	1
			Stoneware	Utilities	Utility Pipe	1
TA-01	05-53	Fill 1/2	Brick	Construction		3
			Iron	Hardware	Machine cut nail	8
					Nail	3
			Pearlware	Ceramic Sherd		2
			Red Bodied Coarse	Farm/shop/home	Flower pot	2
			Stoneware	Unidentified		2
				Utilities	Utility Pipe	1
TA-02	00-10	Lan. A	Brick	Construction		4
			Coal	Light/heat/cooking item		1
					Anthracite	1
			Iron	Construction	Roofing Nail	1
				Hardware	Machine cut nail	3
					Machine cut spike	1
					Nail	1
	10-40	Fill 1	Brick	Construction		4
			Coal	Light/heat/cooking item		1
					Anthracite	1
			Creamware	Ceramic Sherd		1
			Iron	Construction	Roofing Nail	1
				Hardware	Machine cut nail	5
					Square Nail	1
			Mortar	Construction		3
	40-65	Fill 2	Brick	Construction		5
			Clay	Pipe	Pipe unmarked	1
			Iron	Hardware	Machine cut nail	6
					Nail	1
			Mortar	Construction		1
TB-01	20-30	Lan.A/Fl.1	Brick	Construction		1
			Coal	Light/heat/cooking item		1
					Anthracite	1
			Glass	Flat glass		2
			Glass Molded	Bottle		1
				Container		1
			Iron	Hardware	Machine cut nail	1
					Nail	3

Appendix A. Catalog of Cultural Materials, Stonehurst Estate, Stonehurst Site, Intensive Survey.

Unit	Depth	Strata	Material	Function	Type	Count
TB-01	20-30	Lan.A/Fl.1	Red Bodied Coarse	Ceramic Sherd		1
			Whiteware	Ceramic Sherd		1
TB-02	24-35	Fill 1	Asphalt	Unidentified		2
			Brick	Construction		3
			Glass Molded	Bottle		1
			Mortar	Construction		1
			Plastic	Unidentified		1
TB-04	10-30	Fill 1	Glass	Flat glass		1
			Iron	Hardware	Square Nail	1
			Red Bodied Coarse	Construction		8
TB-07	06-50	Fill 1	Brick	Construction		2
			Iron	Hardware	Machine cut nail	2
TB-09	00-10	Lan. A	Brick	Construction		2
TB-10	35-48	Fill 2	Glass Molded	Curved Glass		1
			Iron	Hardware	Machine cut nail	1
					Nail	1
			Ironstone	Ceramic Sherd		1
TB-11	00-20	Lan. A	Brick	Construction		2
			Coal	Light/heat/cooking item		2
			Glass	Curved Glass		4
			Iron	Hardware	Machine cut nail	4
					Square Nail	1
			Red Bodied Coarse	Ceramic Sherd		1
			Slate	Unidentified		1
	20-48	Fill 1	Brick	Construction		1
			Iron	Hardware		2
					Nail	1
					Square Nail	2
TB-12	00-10	Lan. A	Iron	Construction	Roofing Nail	2
				Hardware	Machine cut nail	3
					Nail	3
					Wire Nail	1
			Whiteware	Ceramic Sherd		3
TC-01	03-23	Fill 1	Glass	Curved Glass		1
			Mortar	Construction		3
			Red Bodied Coarse	Ceramic Sherd		1
TC-02	23-57	Fill 2	Brick	Construction		1
			Glass Molded	Bottle		2
			Red Bodied Coarse	Ceramic Sherd		3
			Stoneware	Utilities	Utility Pipe	1
TC-03	10-20	A/Slopewsh	Brick	Construction		2
			Coal	Light/heat/cooking item		1
			Glass	Flat glass		2
			Porcelain	Ceramic Sherd		1
TOTAL						**197**

Appendix B

PROJECT CORRESPONDENCE

950 CMR: DEPARTMENT OF THE STATE SECRETARY

APPENDIX B
COMMONWEALTH OF MASSACHUSETTS

SECRETARY OF STATE: MASSACHUSETTS HISTORICAL COMMISSION

PERMIT APPLICATION: ARCHAEOLOGICAL FIELD INVESTIGATION

A. General Information

Pursuant to Section 27(c) of Chapter 9 of the General Laws and according to the regulations outlined in 950 CMR 70.00, a permit to conduct a field investigation is hereby requested.

1. Name(s): Suzanne Cherau

2. Institution: The Public Archaeology Laboratory, Inc.

   Address: 210 Lonsdale Avenue
   Pawtucket, Rhode Island 02860

3. Project Location: Stonehurst, The Robert Treat Paine Estate
   see attached proposal

4. Town(s): Waltham

5. Attach a copy of a USGS quadrangle with the project area clearly marked.

   see attached

6. Property Owner(s): City of Waltham

7. The applicant affirms that the owner has been notified and has agreed that the applicant may perform the proposed field investigation.

8. The proposed field investigation is for a(n):

   a. Reconnaissance Survey
   b. Intensive Survey
   c. Site Examination
   d. Data Recovery

B. Professional Qualifications

1. Attach a personnel chart and project schedule as described in 950 CMR 70.11 (b).

a. Personnel

Principal Investigator(s):	Suzanne Cherau
Project Archaeologist(s):	Kristen Heitert
Field Crew:	Will Burdick Fred Lumb

b. Schedule

Fieldwork:	July 2002
Laboratory:	August 2002
Report:	August - September 2002

2. Include copies of curriculum vitae of key personnel (unless already on file with the State Archaeologist).

C. Research Design

1. Attach a narrative description of the proposed Research Design according to the requirements of 950 CMR 70.11.

2. The Applicant agrees to perform the field investigations according to the standards outlined in 950 CMR 70.13.

3. The Applicant agrees to submit a Summary Report, prepared according to the standards outlined in 950 CMR 70.14 by: October 2002

4. The specimens recovered during performance of the proposed field investigation will be curated at:

The Public Archaeology Laboratory, Inc.
210 Lonsdale Avenue
Pawtucket, Rhode Island 02860

SIGNATURE Suzanne J. Cherau
APPLICANT(S)

July 18, 2002
DATE

The Commonwealth of Massachusetts

William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

PERMIT TO CONDUCT ARCHAEOLOGICAL FIELD INVESTIGATION

Permit Number 2191 Date of Issue July 31, 2002

Expiration Date July 31, 2003

PAL is hereby authorized to conduct an archaeological field investigation pursuant to Section 27C of Chapter 9 of General Laws and according to the regulations outlined in 950 CMR 70.00.

Stonehurst, The Robert Treat Paine Estate, Waltham

Project Location

Brona Simon

Brona Simon, State Archaeologist
Massachusetts Historical Commission

220 Morrissey Boulevard, Boston, Massachusetts 02125
(617) 727-8470 • Fax: (617) 727-5128
www.state.ma.us/sec/mhc