Archaeological Standards and Guidelines

September 2003

Revised May 2004

Bureau of Environment
New Hampshire Department of Transportation
Concord, NH

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I. Purpose of Supplemental Guidelines

A. Introduction

These guidelines are intended for use in archaeological investigations for NH Department of Transportation (NHDOT) projects under environmental review by the Bureau of Environment. They apply to investigations completed through the NHDOT Service Agreement, under a direct contract with NHDOT, or under a contract with a prime engineering firm (PE) contracting with NHDOT. They provide detailed guidance within the framework offered by the *Secretary of the Interior's Standards and Guidelines for Archeological Documentation* (see http://www.cr.nps.gov/local-law/arch_stnds_7.htm). While these guidelines are not applicable to every situation, it is anticipated that they clarify the nature of phased archaeological investigations and reports required to establish the effect of a NHDOT project. If significant variation from these guidelines is necessary, the approach should be verified with the NHDOT, which will present the issue to NHDHR for their review. Such variations are clarified in the resulting report. Much of the guidance has resulted from discussions with NHDHR, report review by the two agencies, and with NHDOT archaeological contractors.

B. Legislative Mandate

Both federal and state legislation directs the consideration of historical resources for NHDOT undertakings. Section 106 of the National Historic Preservation Act requires federal agencies and their agents, here the NH Division of Federal Highways (FHWA) and the Army Corps of Engineers (ACOE) and NHDOT respectively[1], to take into account the impacts of their undertakings on properties eligible for or listed on the National Register of Historic Places and affords the Advisory Council for Historic Preservation (Advisory Council) the opportunity to comment on the undertaking prior to the project's execution. Established by the Advisory Council, the implementing regulations for Section 106, 36 CFR 800, establish the consultation process for the review of federal undertakings between the federal agency, the State Historic Preservation Officer, and the Advisory Council. The affected public always had the ability to comment on the process. However, the Jan. 11, 2001, amended regulations first prepared in 1999-2000 emphasize that the directly affected public may request consulting party status. In NHDOT projects with FHWA involvement, these parties may include but are not limited to the towns, affected property owners, local and regional historical societies, local and regional preservation groups, and planning agencies. This consultation status involves federally recognized Native American groups (see 36 CFR 800.2). While lands of federally recognized tribes do not currently occur in New Hampshire, Federal Highways, as the responsible agency, recognizes Native American groups as consulting parties. Such coordination is the responsibility of Federal Highways with assistance and input from the NHDOT and NHDHR, not of the individual archaeological contractor.

The regulations under 36CFR800 clarify the process of determining the existence of an undertaking; the

[1] The NHDOT may also be involved in a project with other federal agencies such as the Environmental Protection Agency (EPA) and Fish and Wildlife. Other federal agencies may attribute consulting party status to different members of the public.

definition of the area of potential effect; historic resource identification; evaluation of National Register eligibility utilizing the National Register criteria, resource integrity, historic contexts, and discussion of comparable properties; establishment of the existence and assessment of effect; and avoidance, minimization, or mitigation of the adverse effects of the undertaking. While the procedures to carry out Section 106 reside in 36 CFR 800, the criteria for National Register evaluation to determine eligibility and establish significance are provided in 36 CFR 60.4. Archaeological properties are usually but not always found eligible under criterion D, the property's ability to yield significant information that contributes to an understanding of the site's contexts and associated site types. Sites that have significant associative value may be eligible under criterion A. Evaluation of physical integrity is guided by the seven elements of National Register integrity applicable to archaeological sites. Unless physical integrity is severely compromised thus failing to gain significance on the basis of low integrity, the significance of the property cannot be understood outside the framework of the applicable historic contexts. The consultant must weigh property significance through a comparison of the subject property's integrity and potential content with parallel sites. Conducting data recovery at a significant site to mitigate impact is considered an adverse effect under the existing guidelines.

The Transportation Act administered by Federal Highways includes a section popularly identified as Section 4(f). It directs Federal Highways and its designees to examine project alternatives and select the feasible and prudent project alternative that avoids impact to cultural resources found significant under the Section 106 process. If no feasible and prudent alternative exists, then the agency is directed to minimize harm as much as possible. Under Section 4(f), data recovery from sites significant only under D is not regarded as an adverse impact as it is under the Section 106 and its regulations at 36 CFR 800. However, in cases where a very significant site would need to be retained because it may yield data significant for future investigations or because it possesses high associative value, then impact to the site would constitute a 4(f). While other laws may currently or eventually apply to Federal Highway's undertakings in New Hampshire, Section 106 and Section 4(f) currently constitute the primary applicable federal laws for NHDOT projects.

NHDOT also uses the documentation completed for the Section 106 process to fulfill the cultural resources evaluation for the National Environmental Policy Act (NEPA). The current 36CFR800 regulations encourage this approach (36CFR800.8). Like Section 106, NEPA also requires consultation with the affected public during the project's planning and design phases.

Additional federal laws would guide NHDOT cultural resources management if Native American groups become federally recognized.

State Law (RSA), Title 19: Public Recreation/ Chapter 227C: Historic Preservation/Section 227-C:9 provides some guidance for the protection of historic properties affected by state undertakings or administered by the state. It directs New Hampshire's state agencies including NHDOT, departments, commissions, and institutions to fully cooperate with the NHDHR while administrating all state licensed, assisted, or contracted projects, activities, or programs. To protect historical resources under their administration that may be adversely affected by a state undertaking, these agencies are to undertake the location and identification of historic properties within the impact area; evaluate the significance of the property using the National Register criteria if not already listed on the National Register; assess the effect of the project on the property; and develop mitigation measures to minimize the impact. These directives are subjected to the agency's budgetary limitations. The NHDOT and NHDHR cooperate to contain the cost of these investigations. The statutes also state that the location of archaeological sites will be kept confidential to deter unauthorized field investigations (see RSA 227-C:11).

Other subsections of the state law are quite specific about the disposition of historical "objects" gained through investigations for the state that do not fall under private ownership. Artifacts from most investigations carried out for the NHDOT are placed in the designated state facility now under the management of NHDHR. RSA 227-C:8 requires that the contracting archaeologist catalogue and record recovered artifacts as specified by the NHDHR (see Section VI).

RSA 635:6 regulates the treatment of known burials under state law. It states that no person, without written authorization of the owner or lineal descendant of the deceased or municipality will knowingly destroy, mutilate, injure, or remove any tomb, monument, gravestone, or marker or a fragment thereof from a burial plot. Laws that pertain to archaeological investigations assume that the burial or cemetery has not been identified. RSA 227-C:8-a provides the legal guidance for treatment (1) of unmarked burials or human remains and cemeteries discovered during construction or agricultural activities and (2) of remains located by professional archaeologist who are identified by NHDHR as qualified to undertake such investigations. It also provides the procedures for notification. If located under the first instance, the disturbance will " . . . cease immediately and shall not resume without authorization from the county medical examiner or the state archaeologist, as provided in RSA 227-C:8-b, III or IV." RSA 227-C:8-a states that if located by a qualified archaeologist during survey or test excavations, the investigations of the burial and adjacent areas may continue "...after notification, by telephone or certified letter, to the state archaeologist and immediate notification is given to living descendants or specific groups known to have affinity with the remains." For NHDOT projects, contracting archaeologists will cease work and immediately notify the NHDOT Cultural Resources Manager and the State Archaeologist so that the proper steps may be taken by the NHDOT and the NHDHR to determine proper procedures and identify the appropriate notification process. Investigations will not continue until verbal notification is provided by the NHDOT. This procedure must be followed. Note that for project with federal involvement, for example FHWA, it is the responsibility of the agency with NHDOT as its agent and with the assistance of the NHDHR to notify descendants or specific groups, not the contracting archaeologist. When the burial is Native American whether or not the group is federally recognized, RSA 227-C:8–d enjoins the State Archaeologist to immediately notify the leaders, officials, or spokesperson to determine the appropriate treatment of the burial (see also RSA 227-C:8-g). When the burial is not Native American, the State Archaeologist and often the NHDOT Bureau of Right-of-Way seek identification of descendants to determine the disposition of the burial (see also RSA 227-C:8-e and 8-g). If skeletal analysis is deemed appropriate, this study may only be undertaken by a qualified analyst in close consultation with the NHDHR and NHDOT (see RSA 227-C: 8-f).

II. Definitions

A. Area of Potential Effect (APE)

The area of potential effect (APE), the study area, comprises the area in which the undertaking or project may cause direct or indirect effects or a change in the significant characteristics or use of a historic resource, including archaeological properties. In archaeology, the APE has both horizontal and vertical extent. For example, a road box replacement will have a shallower APE than a road box replacement and sewer installation below it. Shallow sites may be affected by the weight of equipment and truck storage, while deeply buried sites may not. The direct, physical impact of the project on the archaeological property is usually of greatest concern. However, an indirect impact to the resource, for example,

increased vandalism at a site caused by bringing the traveling public closer to it, can also create a significant effect and require protection. The APE may be smaller than the project area and may change as the design is refined and investigations progress through the phases of archaeological study.

B. Precontact Native American

Throughout these guidelines, precontact Native American or Indian archaeology will refer to what is commonly denoted as "the prehistoric past," considered to be a pejorative term. This term generally refers to the period before the existence of supplementary records, primarily written records, maps, drawings, etc. However, oral tradition, apart of the supplementary record, is a significant component of the Native American documentation of past traditions. Native American and Euro-American Ethnohistorians and archaeologist are beginning to incorporate an understanding of oral traditions into their work as the variance in the conceptualization of time and other cultural differences affecting interpretation become better understood. In New Hampshire, such studies have typically relied on the systematic and problem-oriented analysis of: features; excavated and curated artifacts; soil matrices and their chemical and biological contents; geomorphology; the interrelationship of these elements; and radiocarbon dating as well as ethnographic analogy and cultural traditions and comparative analyses with the data sets of other sites. The integration of these data sets through distributional analyses and other models is imperative to their interpretation.

C. Historical Archaeology

For practical purposes, historical archaeology generally encompasses those archaeological manifestations that postdate the period of initial European-Native American contact. There are important considerations that may affect the assessment of historical archaeological site significance. The understanding of site development in historical archaeology is almost always informed by documentary research, for example written, pictorial, and other illustrative materials as well as archaeological deposits. Sites informed primarily by the additional source of oral tradition including family traditions is considered within the scope of historical archaeology. When considering Native American cultures in this framework, obvious overlap between the work of the prehistorian and historical archaeologist as well as other sub-disciplines, for example ethnohistory, exists. Historical archaeological sites gain their interpretive strength from the juxtaposition of multiple sources of information. These sources are used in a complementary as well as a supportive fashion, going beyond simply confirming site location and period of occupation. In addition, historical archaeology examines not only buried deposits but also data derived from cultural landscape forms and standing as well as the visible remains or "ruins" of buildings, structures, cemeteries, and objects. Buried deposits are examined in relationship to these other data when they are temporally and contextually associated. An understanding of the form, plan, material, structure, manner of construction, detailing, and associated characteristics of these associated visible data are a significant part of the available data and are documented. There are some situations, for example in industrial archaeology, in which the detailed documentation of standing buildings, structures, and their remains and interrelationships composed the primary source of data.

Because of its explicitly interdisciplinary orientation, there are a number of factors to consider when determining resource significance. They include the level of physical integrity of deposits, both discrete deposits and contextually and/or temporarily tight sheet middens; the deposit's relationship to partial and standing resources and their physical integrity as an artifact of study; the integrity of setting and location;

the level of knowledge about the context(s) to which the property relates and the research questions that potential investigation may address; and the kind and amount of complementary information, for example written and oral data. The existence of extensive documentation of a resource with reasonable physical integrity provides a much greater understanding of the resource and what it represents than the records can alone. Archival documentation of a historic site does not preclude its ability to provide significant data. While the level of knowledge about early occupations is generally less and such sites on these grounds often merit investigation, this condition does not preclude the investigation of more recent sites given the importance of the use of complementary sources in the discipline.

D. Urban Archaeology

In urban environments, modern surfaces may cover and inhibit initial access to Native American and historical archaeological deposits. The urban environment with its intense occupation may necessitate the adjustment of the typical phased approach to archaeological investigations. Access to significant soil layers may be available for comparatively brief periods or relatively close to the project construction period because of the disruption to the immediate area by construction. The modification of the approach to the need of the project are discussed with the NHDOT and NHDHR. One possible approach is presented at the end of the Field Investigation sections (Section IV.G).

III. Professional Qualifications

All archaeologists contracting with NHDOT as principal investigators will be qualified for such work as determined by NHDHR. NHDHR periodically updates its list of qualified archaeologists. According to NHDHR guidelines, principal investigators must meet the minimum standards presented in 36 CFR 61. The consultant must notify NHDOT of his/her interest in the Service Agreement and other contract projects by submitting form 254 every 18 months.

These regulations require a graduate degree in archaeology, anthropology, or related field; at least one year of full-time professional experience or an equivalent period of training in archaeological research, administration, or management; at least four months of supervised field and analytical experience in general North American archaeology; and demonstrated capability to complete archaeological research through all its phases. These standards distinguish between the prehistorian and historical archaeologist. Each must have a specialization in his/her respective areas and at least one year of full-time professional experience at the supervisory level in the study of the Native American cultural traditions or the historic period.

NHDHR requires the following additional qualifications for the principal investigator. All prehistorians will have at least one additional year of supervisory experience in the region encompassing the glaciated Northeast. Historical archaeologists will have a least one additional year of supervisory experience in New England, New Jersey, New York, or Pennsylvania. Historical archaeologists specializing in submerged nautical resources will possess at least one year's experience in the study of such resources along the Atlantic seaboard, working in lakes, rivers, and/or coastal areas. NHDOT requires that the principal investigator has successfully completed one or more investigations in New Hampshire in a timely manner. Principal investigators will be knowledgeable of the federal and state cultural resources management laws and regulations, including those relating to the treatment of human remains in marked and unmarked graves. As soon as research or initial investigations indicate the likely presence of Native

American or historic deposits, an individual with training in this area who qualifies as a principal investigator will supervise the work, including research approach, selection of field methods, on-site investigations, analysis, and the preparation of the appropriate sections of report. Such supervision is initiated when such remains are identified during research or in the field, as early as Phase IA or IB investigations.

The principal investigator is responsible for each aspect of the project: the preparation of the proposal including objectives and delineation of research methods; background research; field investigations; data analyses; documentation of these investigations; and preparation of the report including recommendations for further study and site significance. The principal investigator will maintain sufficient presence in repositories, the field, and laboratory to set up the study, ensure appropriate collection and accurate documentation of data, direct needed modifications as investigations proceed, field-check accuracy of field data, establish and direct analysis, and oversee documentation and preparation of recommendations at its close. In phases II and III, as the intensity of excavation increases, it is anticipated that this presence will proportionately rise. All research, field investigations, analysis, and report preparation will be completed within the schedule set in the authorization of work unless notification and adequate justification is provided to NHDOT.

A project or supervisory field archaeologist working under the direction of the principal investigator will possess a total of at least a bachelor's degree and five years of field experience. This field experience will include one year of supervision in the glaciated Northeast for Native American resources, one year of supervision in the Northeast as noted above for historical archaeology, or one year of supervision along the Atlantic seaboard for submerged nautical resources as noted above. A master's degree may substitute for two years of general experience but not for specialized field experience. Under the direction of the principal investigator, the supervisory archaeologist may undertake the background research, field investigations, analysis, and site documentation and prepare portions of the report.

Depending on the nature of the site, the prehistoric or historical archaeologist may require additional qualifications or additional personnel qualified in other fields that may not be specified under 36CFR61. For example, projects for NHDOT encounter situations in which personnel with expertise and/or demonstrated experience in geomorphology, botany, faunal analysis, forensic anthropology, and industrial and urban archaeology are needed. These individuals will possess graduate training in their field, two years of professional experience in the area of expertise as well as demonstrated experience within the type of physical circumstances for which they are being consulted, and the demonstrated ability to complete a research project with a report of findings. Principal investigators may also need to add architectural historians, historians, historical landscape architects, etc. to their team whose professional qualifications will follow those provided in 36 CFR 61.

All other staff personnel will be under the close supervision of the principal investigator and project archaeologist who are responsible for their work products.

The principal investigator, supervisory archaeologist, and other staff members will conduct themselves in a professional manner. This addresses the prohibition of trafficking in the sale of antiquities or human remains recovered from marked or unmarked graves; the violation of federal or state antiquities laws including those protecting graves, cemeteries, or human remains; and the misrepresentation of any archaeological investigation under federal law and RSA 227C:17.

IV. Standards for Archaeological Field Investigations

A. Introduction

The NHDOT strives to identify archaeological sites that may be affected by its highway design as early in the planning process as practical to permit the design to avoid and preserve archaeological resources. Phased archaeological investigations grow progressively spatially intensive and focused: Phase IA, determination of archaeologically sensitive areas in the project area; Phase IB, intensive investigations in sensitive areas usually entailing testing every 8 m. to identify the presence of archaeological remains; Phase II, evaluation of the significance of these remains for the National Register of Historic Places; and Phase III, data recovery based on a research design for the portions of the site that will undergo disturbance as well as other forms of mitigation. These investigations gradually shift from an examination of the project area, a historically/culturally artificial construct in Phase IA, through horizontally intensive testing and identification and limited definition of archaeological manifestations in Phase IB, to the increasingly intensive analysis of individual sites or site complexes, in Phases II and III. If a Phase IB is requested at the beginning of investigations, the study of the APE will incorporate both Phase IA and IB investigations. Under these circumstances, the archaeological sensitivity of at least a portion of the project area is provisionally assumed based on the presence of known sites and other environmental attributes. However, the contracting principal investigator will then document this supposition through the usual literature search and walk over survey immediately followed Phase IB investigations of sensitive areas. Project construction cannot begin until clearance through NHDOT, based on discussions with NHDHR.

It is the responsibility of the principal investigator evaluating archaeological resources to coordinate investigations with the project's architectural historian, eliminating duplication of research and sharing information when possible. In some instances, particularly if the predominate direction of investigation is historical archaeological resources, it may be productive to produce a single report evaluating archaeological and architectural resources.

The area under investigation is usually defined by the extent of direct potential effect or impact caused by the project construction including such auxiliary areas as drainage areas, sources of fill, disposal sites, new or enlarged access roads or areas, new utility trenches, staging and storage areas, erosion control sites, and property purchases. Because project impacts can change, it is imperative that all examined areas and all those with archaeological deposits are clearly shown on project maps at each phase. Displaying these elements on NHDOT project maps if at all possible is very important.

When communicating with clients in association with NHDOT projects about survey areas in extant and former agricultural fields, make sure they understand that while the plowing of agricultural fields can cause some surficial disturbance, artifact concentrations in the plowzone can contain significant information. Intact deposits often remain below the plowzone. In addition, the efficacy of some existing predictive models to evaluate project areas for archaeological sensitivity in New Hampshire have proven ineffective for some environmental settings. For example, despite assumptions to the contrary, Native American quarry sites have been located in the White Mountain area and in the floodplain along the Connecticut River.

Note that the names for the different phases are those now in current usage in northeastern archaeology.

B. Phase IA: Archaeological Sensitivity Assessment (Formerly Preliminary Survey)

Goals of Investigation: Phase IA investigation is conducted at locations where previous surveys of the area are absent or insufficient, where broad areas of disturbance are believed to be absent, and the environmental qualities of the area suggest the potential for archaeological sensitivity. Determination for such survey needs are generally made during project reviews at NHDOT's bimonthly Cultural Resources Meetings attended by NHDHR, FHWA, and the Army Corps of Engineers (ACE). The goal of Phase IA investigations is to identify areas of obvious disturbance and archaeological sensitivity through limited field investigations; to gain an understanding of previous significant construction projects in the area; document the site density and cultural development of the locale or region through data gained from the literature search; and identify the current and significant past environmental parameters. The level of detail at which data are collected depends on the number of alternatives being considered. If a single, primary alternative exists, then the level of data collection will generally be greater. In urban environments, field investigations are generally limited to a pedestrian examination of the area and the research phase is more complete in an effort to more precisely pinpoint areas of potential deposits (see II). In very large project areas, the Phase IA may include two parts, the literature search and initial project area review and, after the alternatives and corridors are narrowed, a systematic walk over of the APE to refine the sensitivity areas.

Definition of Survey Area: Based on mapping of the project area and communications with NHDOT and the prime consultant if one exists, clearly identify the area to be examined. The APE maybe smaller than the project area. There may be project alternatives that require examination, and areas of impact outside the project corridor often exist (see IV. A.).

Environmental Research: Conduct research to develop a context for both the existing and past physical environment and setting. Provide data on all aspects of the environmental context that affect sensitivity assessment. In general, include the following types of information: geology, glacial history, hydrology, physiography/geomorphology, soils, climate, vegetation, and the ways in which the ecology of the area has altered through time. The environmental context with other cultural contextual information should be related to the types and kinds of sites that are anticipated. Some environmental circumstances such as floodplain and other depositional settings may significantly affect the approach to investigations. In addition, describe the existing cultural landscape/setting, identifying both past and recent modifications. Include a discussion of past and present land use. If research or subsequent pedestrian surveys indicate the presence of hazardous materials, notify NHDOT and the prime consultant. Proper monitoring of the APE by a qualified professional trained to assess the potential hazardous material may be necessary.

Literature Search: The literature search precedes field investigations in Phase IA. Additional research may be necessary depending on the results of field investigations. In this phase, the radius of the literature search in part depends on the environment. A general rule of thumb encompasses a radius of 5 km or if sites are scarce, the closest ten sites. Along main drainages and rivers, extend the search 5 km up and down stream and 1 km back. If there is a high concentration of sites, then less distance may be necessary to understand recorded site distribution and environmental locations, site types, and cultural associations in the vicinity of the project area, the goal of the literature search.

The literature search identifies known sites and their locations within and adjacent to the project area, provides an understanding of standing historic properties that may be associated with archaeological

remains in the APE, and begins to identify Native American and Euro-American historical contexts relevant to the locale (see NHDHR Historical Contexts, Appendix D). The research provides background information about both the Native American and Euro-American development of the area. Relevant repositories for the literature search will vary according to the size and location of the project area. Because sensitivity assessment is based on an understanding of the interrelationship of the environmental/physical and cultural contexts, this background information assists both the principal investigator and the reviewer evaluate the existence of and potential for archaeological resources and frame the approach to phase IB survey if needed.

The literature search examines data at NHDHR including the site location maps and archaeological site inventory forms; cultural resource reports relevant to the project locale and those providing insight into relevant historic contexts; individual, project area, district area, and town-wide forms in architectural and history files; State Register and National Register nominations; and context files at the NH Division of Historical Resources. The NHDHR files provide site specific information as well as data on contexts associated with the area. Accurately summarize data for each site in and adjacent to the project area recorded in the site files and locate them on maps using the Smithsonian numbers. Inspection of historic maps permits an understanding of the development of the area, pinpoints potential resources, and documents possible disturbances. Particularly in developed areas with layers of development, the examination of more recent maps, for example, state highway and bridge design maps and accompanying records, city engineering maps, and occasional subdivision plats may identify areas of disturbance. The city or town engineer or planner may identify recent activities in the area and maintain mapping to pinpoint areas of disturbance. Rather than simply copying historical maps and placing them in an appendix, closely analyze a chronologically sequential series of maps as well as photographs against the current landscape that appears undisturbed. This information should be integrated into the context. Historic photographic collections and secondary sources including town, regional, and state histories maintained at the New Hampshire Historical Society, city, town and regional historical societies, and local government repositories offer additional background information. While conducting the research at these repositories, note other potentially relevant sources that may assist more focused research if archaeological resources are located during field investigations. Indicate the location of collections of Native American artifacts and their general contents that relate to the project area. Interview the town historian, knowledgeable members of the local historical societies, local avocational archaeologist, current and former landowners about collection activities, known sites, and foundations or “ruins” within and immediately adjacent to the project area. Discuss potential resources with NHDHR staff. The NHDOT Bureau of Environment, Bridge Design, Bridge Maintenance, and Highway Design often have plans, photographs, and other miscellaneous records about the transportation corridor. Gather sufficient data to understand the historic functions of the project area. Maintain a complete bibliography of resources, list of informants, and repositories, referencing them in the standard American Antiquity format. Cite them with page numbers where available to support statements. For unpublished and more obscure sources, note the repository in which the item was located in the bibliography. Historical resources can be very useful in substantiating statements about disturbance.

The degree of specificity of the research at this level for historic site will depend on the extent of the initial survey. If the investigations cover a large area with several alternatives then the level of detail will be less. Each dwelling marked on a small-scale map cannot be accounted for. However, as the area is narrowed to a small number of alternatives, perhaps even in the phase IA, it is anticipated that some of this information will be added.

Field Investigations: The procedures for field investigations will vary to some degree according to the

number of alternatives under examination. It is recognized that complete coverage for surveys of large projects with many alternatives may not be possible in part because of accessibility. However, even here a walkover of accessible and potentially highly sensitive, accessible areas is expected. Again, as in the level of research during the literature search, when project the corridor is narrowed and alternatives are reduced in number, it is anticipated that a high percentage of the surface of the APE will be examined, in Phase IA. The archaeologist needs to work closely with the contracting engineer and NHDOT to focus in on these areas.

All Phase IA investigations include a pedestrian survey of the APE. Carefully walk all of the project area to examine the ground surface including agricultural fields, road cuts, steam banks, and other exposed areas. Systematically inspect broad, unvegitated areas at no greater than 5 meter intervals. Flag, number, and map artifact find spots, artifact concentrations, and building and structural remains, labeling the finds or concentrations by map number. Carefully inspect wooded areas for historic period remains. Windshield surveys do not permit a detailed examination of the ground surface needed to define phase IB investigations. Obvious surface features are missed. Such surveys are not completed during snow cover. Depending on the size of the project, field investigations also include soil coring and, if useful, a small number of judgmentally-placed .5 X .5 meter shovel tests to understand the soil types, stratigraphy, and drainage and evaluate the level of soil disturbances. Excavate such units and collect artifacts by strata and by 10 cm. increments within them. Screen the dirt through 1/4" mesh screens. This survey should attempt to provide an understanding of the existing terrain and current vegetation, identify the location and describe the surface configuration of previously documented sites, observe areas of ground disturbance documented through recent project maps and interviews, define areas of disturbances that are evident from the surface examination, establish areas of low site probability, for example those of steep terrain or permanently wet areas, and delineate areas of archaeological sensitivity that will require Phase IB investigations based on the knowledge of known site locations and the environmental and cultural contexts. Place the findings of the survey on a detailed map or maps showing the project area and APE (see VA/Illustrations).

Although a property within the APE containing standing resources evaluated by the project's architectural historian may not possess eligibility under Criteria A, B, or C, it may include archaeological deposits and the same buildings may possess significance under criterion D in association with the historical archaeological components. In addition to the pedestrian survey within the project area, work with the project's architectural historian to examine the built environment including standing buildings and structures and their remains as well as cultural landscape elements that may relate to the buried deposits. Consider the interrelated buried and aboveground resources as one site to be studied as a unit. Examples of such units range from farmsteads to industrial sites. Such practice is common to industrial archaeology. Spatial analysis of pre-twentieth century cemeteries in conjunction with marker form and the style and wording of the inscription can provide information on, for example, relationships within the community and family or views about less tangible concerns. Whether or not the cemetery within the APE is eligible for the National Register under criteria A or C, these aboveground manifestations may need to be considered by the historical archaeologist under criterion D. The NHDOT attempts to design project to avoid cemeteries and it is important to locate cemeteries near the project area. Place findings on a NHDOT project map (see V.A, Report Format/Illustrations). Map the soil cores, test units, surface artifacts scatters, visible remains, standing buildings and structures, landscaping elements, areas of significant disturbance, and archaeologically sensitive areas that require Phase IB investigations. Provide the results of soil coring and test units including a description of its stratigraphy and any features and characterize any artifact scatters. Include exterior descriptions and measurements for all aboveground features. Provide general photographs of the APE to show the existing environment and level of recent

development, disturbed areas, identified site areas, etc. and photograph in more detail surface artifact scatters, buildings, structures, and landscape elements and their remains that are greater than 50 years old. Identify and note the direction of views on the project map.

Where associated potential historical archaeological deposits, remains, and standing buildings exist, for example at a mill complex with industrial and domestic components or a farmstead with a remaining house and outbuildings, treat the entire property as an archaeological site and discuss each component. Also describe the associated cultural landscape. If, as frequently happens, a portion of the historic site is in the APE and a portion is outside, provide information on all the aboveground components, focusing more detailed field investigations on those within the APE. The understanding of the whole site is necessary to establish site significance. When describing building remains in Phase IA, identify the materials, construction techniques, associated visible features, and include measurements of length, width, depth, and general wall thickness with a sketch map of the feature(s). Include both metric and English units. Use these elements as well as number of stories and shape to describe associated buildings. Take at least two photographs, which include two elevations in each view. A clear view of the front elevation is important. Additional photographs may be necessary to provide adequate coverage. From the limited research completed for the Phase IA, identify the approximate building construction date, owner(s), and function if possible. The architectural information may be available from the architectural historian for the project. Otherwise, an archaeologist should be able to provide this level of data.

Data Analysis: Although artifacts recovered in Phase IA are generally anticipated to be relatively limited, they are to undergo proper cleaning, cataloging, and identification (see Section VI.A and Appendices B and C). Characterize surface artifact scatters deposits through a preliminary analysis that includes material, method of manufacture, decorative elaboration, identifying marks, and type and age if possible. Place the artifact catalogue in the appendix.

The data assembled for Phase IA analysis are intended to provide a statement of archaeological sensitivity. Data from the background research are correlated with the aboveground reconnaissance and any testing. The overall analysis addresses the following questions: What is the likelihood that archaeological deposits exist? What site types are likely to occur? What contexts would they represent? What is the potential condition of the site given the level of development in the project area, particularly in the recent past? Evaluation of site sensitivity is a judgment based on examination of the ground's surface, limited testing, knowledge of the current and past environment including documentation of disturbances, an understanding of sites in the project area and its vicinity, and knowledge of the relevant cultural contexts. The interrelationship of these data provide the basis for the principal investigator's determinations about archaeological sensitivity and recommendations for further investigations. A portion of the end product of these investigations is a constraints map placed on NHDOT's existing design of the project area. Site forms prepared at the minimal level are required for newly discovered sites. Existing inventory forms describing sites in the project area may require updating. It is important to note if the site has been disturbed.

C. Phase IB: Intensive Archaeological Investigations (Previously Site Discovery)

Goals of the Investigation: Phase IB investigations undertake intensive, systematic field-testing of areas identified as archaeologically sensitive during Phase IA. Site identification and boundary approximation occur in this phase. Additional research provides more detailed information on the sensitive areas found to include archaeological deposits. When the archaeologist is requested to perform an investigation

beginning at the Phase IB level, it is thought that at least a portion of the project area is sensitive. The investigations will incorporate data gathered at both Phase IA and IB levels including the literature search.

Environmental Research: In Phase IB, elaborate and focus environmental research of the past and current environmental context provided in Phase IA on the archaeologically sensitive areas. Refining research strategy and the interpretation of findings requires an understanding of this context. The specific areas of focused discussion will depend on the type of physical setting and the anticipated site types. For example, in a floodplain situation, a portion of the discussion often focuses on the an understanding of the ways in which the strata were eroded and deposited through geomorphological studies. The depositional history of the area in question may indicate the likelihood of locating Native American sites and, if so, at what depth they would occur. If this question is at issue, it would be anticipated that the Phase IB study would incorporate a geomorphological component. The impact of the project, for example construction staging, may occur above the archaeologically sensitive levels. If the deeper deposits are protected in perpetuity, further survey may not be necessary. Or, for example, an understanding of a farmstead and the type of agriculture performed through time could depend in part on soil types, hydrology and its control through time, and physiography of the parcel as well as access to trade routes. Thus, with the broader description of the environment provided in Phase IA, the focus of the environmental context in this phase depends on both the physical characteristics that affect site location and access and the potential cultural contexts involved. It also informs the approach to field investigations and extends the interpretation of the data.

Site-Specific and Contextual Research: In Phase IB research, conduct a more detailed examination of Native American and historic period sites and their associated contexts (see Appendix D) and site types confirmed or identified during the systematic testing in Phase IB. Such research often occurs both prior to and after archaeological investigations to refine site interpretation and direct research in Phase II. In the Phase IB and II levels of research on Native American sites, conduct research on archaeological sites identified along the associated minor drainage, for example the Suncook or Piscataqua, to better understand periods of occupation, resource utilization, and site type and distribution. On major drainages, examine sites within at least a 5-km area in either direction. Depending on the environmental parameter, a broader area may be necessary. For example, investigation of lithic sources may require a boarder, regional perspective. For historic sites, examine comparable sites of a similar type and period within the town. If the site type is comparatively rare, only a few examples are identified to date, examples have a potential range, or the project area is located on the border of several towns or another state, the areas of research may extend to several or more towns or across the state border. The goal of such research is to understand the components of the subject site and address site significance.

For Native American components, such research may involve the initial examination of associated collections, oral interviews about site finds in the area, and additional research in site files and reports providing data about sites in the region of a comparable type and/or period. Research dealing with historic period sites attempts to determine property ownership, period, function, and aerial extent of site occupation (e.g., the parcel associated with the site). Through historic maps and photographs, it strives to characterize as much as possible buildings and other features associated with the site. Building on the Phase IA research, examine the appropriate records to generate this information including but not limited to site reports and historic context files at NHDHR; deeds, mortgages, and plats; probate inventories and other death records; business directories; population, manufacturing, and agricultural censuses; obituaries; relevant town and city records including building permits; manuscript collection; and photographs. All these records may not be extensively used in this phase, but identifying their presence and approximate

contents assists in framing Phase II proposals with potential research elements and Phase III research designs. Include them in the bibliography and note the repositories and types of resources in the methods statement. For both Native American and historic period sites that may be found potentially significant in phase II, extend the understanding of the related context as specific site/property functions are identified. Recommendations for the testing of sites in Phase II will require an understanding of the site type being examined. Identify the potential ties between standing buildings and structures, their remains, and landscape element and the archaeological deposits.

Field Investigations: Systematic Phase IB investigations identify site locations; define the approximate horizontal and vertical boundaries of the site; and begin to identify the site stratigraphy and components. The principal investigator should determine field methods for the investigation of archaeologically sensitive areas in consultation with the NHDOT and NHDHR. The general parameters for testing are usually determined at NHDOT's Cultural Resources Meeting. Such investigations include subsurface shovel testing and remote sensing. There are instances when the typical systematic testing may be modified, for example, the location of potential deeply buried sites or adjacent to building remains. If the literature search indicates a high potential for historical archaeological sites, they are identified through previous investigations in Phase IA, or substantial historical archaeological deposits are located during Phase IB, a 36 CFR 61qualified historical archaeologist directs the research and field investigations, oversees research and data analysis, and is responsible for the associated sections of the report.

When initiating site testing, establish a permanent datum at or adjacent to the site and clearly label it on the project map so that later testing can be tied to the same grid. Establish an 8-meter survey grid using compass and tape or transit and systematically label each transect and unit within it. Excavate .5 X .5 m square units in 10 cm. intervals within strata into undisturbed soil. Screen soils through one-quarter inch hardware cloth. Separate artifacts by each level. If archaeological deposits are identified through shovel testing, bracket the unit with four shovel tests placed at 4 m intervals. Once the presence of a deposit is confirmed, close interval testing is limited to the estimation of site boundaries along its edges. If the site extends outside the project boundaries, establish the boundary in this phase. It is not necessary to test outside the project area at close intervals, but it is important to excavate sufficient units to establish an approximate boundary. When foundation remains extend outside the boundary, it is often sufficient to record the surface features for future design purposes. In cases where the site is relatively large and entails an extensive additional work effort, contact the NHDOT Cultural Resources Manager. It is important to know the location of the site to permit site avoidance in further design and to avoid the site in drainage, access, and storage areas; identify the amount of area being potentially impacted; and help characterize the site in the discussion of significance. The more significant deposits may lie outside the project area. Ground sensing methods such as metal detectors, ground penetrating radar, and resistivity may assist in defining the extent and general configuration of deposits in Phase IB and in later phases.

Systematically maintain the following information on field site forms: stratigraphic profiles of representative units and those containing archaeological deposits and description of soil type, texture, and color using the munsell color chart. Provide a plan, profile, and the description of features and artifact concentrations. Characterize the artifact content. If historic artifacts are not retained, then state the reason for their disposal in the report. For example, they compose field scatter. Include photographs representative of APE and stratigraphy and of any features. Provide measurements in metric and include English measurements parenthetically for historical archaeological sites.

To investigate potential cultural components below deep sediments exceeding one meter in depth, the standard methods for Phase IB systematic testing, the preferred approach to investigations, may require

modification. Such deeply buried deposits may exist below alluvial deposits along major streams, especially on point bars, and at the confluence of minor streams to the main stems of large rivers. They may be buried by colluvial deposits at the toe of steep slopes and thickened plowzones created by sheet erosion on high tilled slope may create a similar circumstance. Methods to recover deeply buried deposits include the excavation of 1m X 2m trenches. The stepping of the units may allow for the unit to reach the necessary depth. Deep deposits may also be removed through machine-assisted excavation. If the overburdens, such as recent fill or alluvial deposits that were created during the 19th and 20th centuries, are unlikely to contain cultural material, then removal of the overburden without screening is acceptable. However, if deep and stratified cultural components are separated by sterile layers, then screening of materials by systematically sampling of the excavated material is necessary. The method of sampling is established for each situation based on the kinds of deposits excavated and the anticipated cultural material. If screening of all materials is necessary, then excavation will proceed by hand. The approach to testing deeply buried deposits is discussed both with the State Archaeologist and the NHDOT Cultural Resources Manger prior to initiation. Provide information to NHDOT about the types of deposits under investigation, for example lacustrine, riverine, colluvial, historic fill, etc., the kinds of anticipated sites, and property access and the type of equipment under consideration. Land owners must be notified. Their refusal may mean the delay of testing until purchase. Monitoring of the excavation and evaluation of the deposits are performed by 36 CFR 61 qualified archaeologist and, depending on the situation, a geomorphologist, who can recognize and interpret subtle changes in stratigraphy. Conform all deep excavation to state and federal safety standards (see "Reconnaissance for Deeply Buried Deposits" memo from Richard Boisvert, State Archaeologist, NHDHR 4/10/2003).

Excavation in Phases IA and IB may also be supplemented with remote sensing, for example using magnetometer, soil resistivity, gradiometer, ground penetrating radar, and chemical surveys. Such techniques maybe useful, for example, for tracing the extent of the site and locating burials. Because the geophysical properties of the area affect the results, the choice of technique and interpretation of results should be closely coordinated with the geophysical specialist. The results are evaluated through Phase IB testing.

Locations found to possess historical archaeological deposits in a comparatively concentrated area may warrant modifications to the testing strategy in Phase IB. Particularly if building or other structural remains are present, the judgmental placement of test units in a non-systematical array adjacent to these features is often necessary to understand deposits around the them, examine construction materials and methods, investigate potential vertical and horizontal extent, define the disposition of strata adjacent to them, and, in some cases, investigate the fill along interiors of the feature. Under limited circumstances including dense historic trash middens clearly deposited in a limited period and intricate stratigraphy that can be associated with, for example, building remains, excavation by strata rather than 10 cm levels in strata may be necessary to define each strata and maintain correct artifact association. On the other hand, broad artifact scatters are tested in 10 cm levels within the strata to determine if they are stratified by age and/or function. As much as possible, identify the occurrence of the same strata across the units. Where there is a variation from standard testing procedures, clearly document the method.

Record the characteristics of standing buildings, structures, and their remains that are historically and spatially <u>associated</u> with the site or site complexes under investigation within the project area. This association is established through historical research completed by the archaeological or architectural consultant during this phase. Data from such buildings should complement or add to the archaeological information found in thematic and temporal association with it. For example, in an urban area, will an understanding of the tenements associated with a trash deposit assist the archaeologist gain a broader

perspective of the property as a whole and the way it functioned and integrated into the community to which it was associated? If deposits are located within a farmstead complex, the associated standing buildings of contemporary age may also indicate the manner of agricultural operation. Such buildings may provide a historical context for the deposit. On the other hand, a 1920s bungalow that replaces a 1780 dwelling with adjacent 1780 archaeological deposits is unlikely to be informative.

In this phase, the Initial documentation should be proportional to the potential information value of the buildings. Include some information about the date and ownership that ties it to the archaeological site. Provide a photographic record of accessible elevations, particularly the front with its main entrance and at least one side elevation with close-up views of decorative detailing. Map the building's location in relation to the deposit. Add some limited description to supplement the photographs such as the building shape, material of the foundation and elevations or walls; the type of windows, if original, and, overall, the number of lights each sash contains; and a statement about whether the visible chimneys were intended to vent fireplaces or stoves, i.e., relative size, their number, and placement. If the building is industrial or an outbuilding, photograph any feature or visible machinery that may document its function. Information about standing buildings should be attainable by the archaeologist with limited entrance onto private property. For foundation features within or adjacent to the archaeological deposits, photograph the building remains; provide measurements and mapping of exposed cellar and foundation walls; and describe construction materials, the manner in which they were processed, construction techniques, and chimney material and location(s). Note any features visible in the walls such as entrances perhaps marked by sill stones. Clarify the resource's relationship to surrounding features. Again, identify the construction date, the history of ownership with dates of transfer, and building functions. Cooperation with the project's architectural historian should assist this effort. Questions about extent of documentation necessary in this phase should be directed to the NHDOT Cultural Resources Manager.

Both archaeologists and the architectural historian examine cemeteries. The architectural historian addresses the design elements of the cemetery and the historical importance of the individuals buried within under National Register criteria C and B respectively and criterion exception D. To address this question at the Determination of Eligibility stage, the architectural historian completes historical research to determine age, the entity overseeing the cemetery through time, and the events that led up to its establishment as well as providing some information from the stones about dates of burials, the graveyard's association with the immediate community, and identification of very significant individual's therein. The study provides the rough number of stones, the general layout of the cemetery and existence of family plots, the characterization of the types of stones, and a description of setting and landscaping features such as walls and plantings.

The archaeologist's role is twofold. For the visible portion of the cemetery, questions addressed under Criterion D consider whether it holds sufficient data in the arrangement and interrelationship of graves, stone design, and epitaphs, etc. to provide significant information about the community and/or families it contains? Thus, consider the cemetery's potential to provide social-cultural information about the adjacent community and family composition. For family cemeteries, the issues may also include the archaeological significance of the remains within an associated property. The archaeologist and architectural historian should share research data and information gained through field examination. A minimum archaeological inventory form with sketch map, location map, and photographs would clearly establish its location as a control for design. In addition, the archaeologist must consider the probability of unmarked burials associated with the cemetery occurring in the project area. Determine the likelihood of burials occurring outside a boundary wall or generally accepted boundary and in the project area (see also Section VIII.A). Cemeteries should be no closer than 20' to the work to exclude them from further

concern. If the potential for impact is minimal, then monitoring during excavation may be sufficient. Otherwise examine this area for burials after receiving clearance from the State Archaeologist and notifying NHDOT as well as the landowner.

Data Analysis: All recovered artifacts brought lab for processing are cleaned and conserved according to the nature of the material and fragility of the artifact, catalogued, and prepared for storage at NHDHR's archaeological lab following NHDHR's cataloguing and curation standards (see Sections VI. A and C). Unless other arrangements are made and documented in the report, these data are curated within six months of the completion of the project or project phase if a long-term project such as those involving the preparation of Environmental Impact Statement. In an appendix to the report, include catalogue sheets from both Phases IA and IB if Phase IA located artifacts from the same area tested in Phase IB.

The principal investigator is responsible for completing the appropriate level of analysis and the integration of the resulting information into the overall interpretation of the associated archaeological deposits. Analyze artifacts by determining artifact identification, classification, and counting or weighing classification types. Phase IB analysis begins to define cultural/historical associations of the site through the dating of diagnostic artifacts, identification of site type or function, and the determination of the number and horizontal and vertical distribution of site components. A site component usually means distinct site occupations, often applied to Native American occupations from different time periods in a stratified sequence or in the immediate horizontal vicinity. However, especially in historical archaeology, a broader definition may be more useful. Site components may refer to the analytical units occupying proximity in vertical or horizontal space. Thus, a foundation and associated deposits of a small, early Cape and associated small, separate outbuilding may have housed the needs of the initial household practicing limited agriculture with few livestock. A later family may enlarge the Cape's foundation, attach sheds and a barn represented by pilings and foundations, and add other outbuildings for specific agricultural activities in the 1830's, for example dairying and the sale of grains in an adjacent growing urban area. Each has its own associated deposits. If examining agricultural development in the late 18th and early 19th centuries, two analytical units and hence two components, may exist. If several households occupied the same buildings, participating in approximately the same agriculture between 1830 and 1880, perhaps only one analytical unit and one component are considered. The number of components, then, depends on historical factors, the nature of the deposits, and the questions that might be asked. The plotting of artifact counts and of the counts of significant artifact types by feature or test locations on a site map assists in the initial identification of site boundaries and understanding artifact densities. In addition to the artifact catalogue, simple tables summarizing the basic vertical and horizontal counts of artifacts and significant artifact types across the site illustrate the manner in which different site components and different periods of occupation are distributed across the site. This effort assists the planning of the placement of Phase II units at potentially significant sites.

Because of the potentially complex stratigraphy at historic sites as well as large, stratified Native American sites, it is important to gain an understanding of the way in which the strata in each unit relate to one another as early in the phased investigations as possible. Begin to link strata through their characterization and artifact content horizontally across test units. For historic sites, the use of written, pictorial, and verbal sources that help define the site spatially as well as the higher numbers of artifacts associated with such sites may assist such an analysis.

Successful analysis of archaeological sites necessitates the integration of all the data for each component: the distribution of data produced through subsurface investigations; information recovered from aboveground studies of the artifact scatters, the built environment, and associated landscapes; data about

the environmental context; and the archival and oral data. Include specific and contextual data relevant to the site(s) under investigation in Phase IB to assist syntheses.

NH Archaeological Site Inventory Form: For each site located during this phase of testing, complete a minimum NH Archaeological Site Inventory Form for the site to receive a site number. Use this number in the report. Include newly generated inventory forms or updated inventory forms with the reports that are sent to NHDOT and to NHDHR if different from the initial submission.

D. Phase II: Determination of Eligibility

Goals of Investigation: Phase II investigation evaluates the National Register significance of the site through more extensive excavation, which samples and characterizes archaeological deposits. The investigation provides an understanding of the horizontal structure and its stratigraphy including artifact and feature distribution**;** indicates the site's physical integrity, noting any areas of disturbance; establishes the period(s) of occupation, function, cultural affiliation, and associated contexts; and more closely defines the horizontal and vertical boundaries of the site within the APE. Although preliminary definition occurred in Phase IB, more precise boundary definition may be particularly important in some locations as design examines alternatives to avoid the site. The investigation determines if the site can address significant questions associated with the associated contexts. It provides sufficient data to prepare a Phase III research design addressing those questions. Sufficient comparative research is necessary to determine the site's importance in relation to others of its period, cultural affiliation, function, and region.

By Phase II, both Native American and historic components are identified. Depending on site content, an individual qualified under 36 CFR 61 as a prehistorian or historical archaeologist will direct field investigation, research and data analysis, and report preparation. In Phase II, other consulting professionals may also be needed, for example geomorphologists, industrial archaeologists, and faunal specialist etc. The principal investigator directs all phases of investigation and is present during field testing sufficiently to ensure appropriate field investigation strategies are properly completed, field records including mapping and stratigraphic sections are adequate, sampling is performed appropriately, and artifacts are properly labeled and transported. Field analyses and interpretation of strata and features and their relationship with associated remains are performed by the principal investigator as the investigations proceed. The proposal for Phase II investigations includes a discussion of the necessary professional input. See III for further statements about professional qualifications.

Environmental Research: The site specific research of Phase II may require additional environmental research to explore the research potential of the site. For example, Phase II investigations of precontact sites include a discussion of the environmental context contemporary with the site's occupations. Include an environmental context for the site drawn from previous and ongoing research.

Background Research: During Phase II, background research for both Native American and historic period sites provides a well-developed cultural contexts (see Appendix D) defined by theme, period, and region. In the Phase II level as in the Phase IB level of investigations at Native American sites, conduct research on archaeological sites identified along the associated minor drainage to better understand periods of occupation, resource utilization, and site type and distribution. On major drainages, examine sites within at least a 5 km area. By Phase II, as the subject site become better understood, research should focus on comparative investigations of known periods of occupation, parallel resource utilization, and similar site type in this area. Such research examines the ways in which the subject site fits into the

contemporary regional site distribution and/or environmental and resource needs. For historic sites, examine comparable sites within the town of a similar type and period. If the site type is comparatively rare, only a few examples are identified, examples have a potential range, or the project area is located on the border of several towns or another state, the areas of research may extend to several or more towns or across the state border, depending on site types, period, and significance. The goal of such research is to understand the components of the subject site and address site significance.

Thus, such research defines the site type, its role, and associated cultural context. Examination of previous work at known sites of a similar type within the region establishes the data types and site structure that may be anticipated at the site under examination. The context may provide an understanding of the ways in which the site may have related to others of the same period and cultural association. Knowledge of the context and site type provides the background or comparative overview for interpretation of findings at the subject site and allows the researcher to identify areas needing further investigation within each context and frame potential research questions. It thus permits evaluation of site significance by establishing the major research questions that the site can address. Comparative research also establishes the rarity of the site type, the representativeness of the subject site, and the level of integrity of similar sites.

Site-specific and contextual/site type research involving both Native American and historical archaeological site investigation includes intensive interviews with local informants and state and regional authorities in the area of research and region. It involves a review of published and unpublished site reports at NHDHR and other repositories in the state that examine relevant contexts, site types, and specific aspects of the site to permit its evaluation. For example, such topics may relate to specific artifact types and other forms of data that may be characteristic of the subject site type, building or structure forms, diet, settlement distribution by land form, etc. Particularly for sites related to Native American occupation, locate and assess the importance of artifact collections related to the site and comparative collections related to the site type and/or specific artifact types and materials of particular interest at the site. The former is needed to more fully understand the contents of the site and the later contributes to the comparative analysis and is examined at this phase to frame research questions and prepare a research design if needed.

When examining historical archaeological sites and associated aboveground remains, also complete sufficient research specific to the site and its immediate community and delineate the relevant context(s) and site types to establish site significance. Again, examine relevant archaeological reports, NHDHR context files, and other professional sources that deal with the site type and its context(s). Locate comparable archaeological sites and standing buildings and structures and their remains that relate to the site type in the region to understand materials, construction techniques, size and form, technology, design, and functions common to the site type. Field examination of comparable standing properties in the locale in Phase II or III may address issues excluded from available records. If not completed, finish the examination of relevant property records and plats, death and marriage records, census data, directories, local newspapers, building permits, town records, institutional records, and similar records in town, city, and state repositories and complete oral interviews. While much of this research should precede field investigations, Phase II investigations can frequently point to additional areas of research and ways of analyzing materials either in this phase or in Phase III. Such research is an interactive process.

Thus, this broader study for both Native American and historic sites determines the existing level of knowledge about the site type and its context(s), the known levels of integrity of comparable sites within the site type and the existence of comparative collections, and the capacity of the site to investigate

significant questions.

Field Investigations: Investigations in Phase II examine the portion of the site within the APE, clearly defining site boundaries within and immediately adjacent this area. Phase IB established the overall approximate site size to understand the percentage of sites that would be disturbed. These investigations must be sufficient to determine whether the site or the portion of the site in the APE is eligible for the National Register. If significant, the effort must also determine if the nature of the data are of such importance that the site should be preserved for future investigations. The site may have high associative value. If data recovery is appropriate, then the Phase II data must be sufficient to permit the preparation of research questions specific to the site type and each context it represents that are addressed through data recovery.[2] Phase II testing also considers whether the most significant portion of the site extends outside the APE and would not be impacted according to the existing design. This effort may or may not be concluded with further testing outside the APE. Such extensions of investigations should be discussed both with NHDOT and NHDHR. If this testing cannot be completed under the current proposal, then the principal investigator will need to contact NHDOT for a scope amendment.

Phase II investigations open larger, more contiguous areas of the site than Phase IB to define the nature and integrity of the archaeological deposits, test and analyze selected features, and locate others found during research. Investigations are sufficient to document the significance of the site. Phase II testing usually involves a combination of .5 X .5 m unit shovel-testing and 1 X 1m or larger excavations, potentially extended by other forms of testing such as remote sensing. The placement of units depends on the nature and distribution of deposits. Shovel-testing at 4-m intervals within identified area site more closely defines the locations of artifact clustering and overall distribution, feature distribution, and previously approximated boundaries and delineates the stratigraphy across the site. The hand excavation of l X 1 units and 1 X 2 or more meter trenches investigates the range of artifact types, numbers, and proportion of types, samples features, and defines the stratigraphy. It examines vertical site boundaries and site structure. While systematic arrays of shovel tests play an important role in locating features and defining stratigraphy at the location of artifact finds, it may not sufficiently characterize features, adequately document complex stratigraphy, or place them in relation to visible remains as the larger units do. The increased artifact sampling through both approaches permits more accurate site characterization including delineation of site components.

Units are excavated in 10 cm levels within their strata by troweling or shovel-skimming. Dirt is screened through one-quarter inch mesh and one-eighth inch mesh in features or areas of high artifact concentrations, particularly with small artifacts such as micro-flakes or beads. Separate artifacts by level within units unless features or scatters require piece-plotting. Units are excavated into sterile soils. Complete any feature excavation with trowels. Depending on the size and artifact density of features, define, sample, and excavate features sufficiently to identify and characterize them and provide support for Phase III recovery. Their selection is judgmental, based on previous experience with the site type and the features' potential to define eligibility and develop questions to be tested in a potential Phase III. Testing strategies described in Phase IB in areas of deeply buried, stratified cultural deposits in Phase IB testing are employed and extended (see Section IV.C). Controlled use of mechanical removal of soil may also be necessary in areas of fill. The depth and soil characteristics of the fill are previously identified, and it is known that the sacrificed layers lack archaeological deposits of National Register significance. If historic artifacts are not retained, then state the reason for their disposal, for example,

[2] The Research design for a Phase III is generally prepared by the contracting archaeologist under a separate contract.

they composed field scatter or they existed in areas of clear disturbance. Both vertical and horizontal control are maintained. Document all excavation units, providing profiles of at least one wall, plans of artifact concentrations and features and profiles, and photographic coverage. Collect soil, carbon, and other samples appropriate to understanding the site type and context. Provide the same level of descriptive information on field site forms as specified for Phase IB (Section IV.C). Update and complete all entries on the NH Archaeological Inventory Form(s) for the site under Phase II investigation.

Phase II investigations at historic period sites can encounter stratigraphic challenges, a large variety of features, and dense artifact deposits and often possess associations with standing buildings, structures, and ruins, circumstances, with some notable exceptions, not usually found at New Hampshire's Native American sites. The excavation strategy is often affected by these factors as well as information provided from historical research. Phase II at least partially defines the extent of foundation and other walls and their relationship to each other and to the surrounding strata; gain a sense of the interior strata and their associated deposits in building foundations; and begin to address the nature of the surrounding landscape or setting to understand the extent and complexity of the site. Sheet middens as well as discrete trash deposits should be examined in relationship to the physical and historical context in which they are located. Phase II field investigations at historic sites should sample sheet middens, excavated in 10 cm levels within strata, particularly in relationship to the buildings and their openings. This stratigraphic control is intended to identify the existence of chronological layering of deposits.

Functionally and temporally-related aboveground components of historical archaeological sites may enhance an understanding of the overall property. For buildings, structures, and their remains that contextually relate to site deposits, include the following data: date of construction, relevant history of ownership, location on a project maps, and photographic views of all elevations as well as the setting and temporally and/or functionally associate buildings and structures. Also develop a relatively detailed description including the structural system and exterior cladding materials; the way in which these materials were processed and the techniques of construction; a sketch of the building form with exterior measurements; number of stories; roof shape; orientation of front elevation to roof gable; location, size, and material of the chimneys; exterior building measurements; window and door placement and symmetry to the walls; decorative detailing; relationship to and identification of related buildings, structures, and landscape elements; relationship to buried components and to any associated visible machinery or power source as may be the case with an industrial or agricultural building; and interpretation of function if possible. Depending on the extent of buildings and building remains, the principal investigator may need to include an architectural historian[3] versed in the region's architectural styles, building materials, and building techniques for the investigation. Because the focus of the study is likely to be the analysis of the floor plan, room/building functions, and the relationships between buildings and landscape features and archaeological remains as well as the building's decorative detailing, which may be quite limited, a background in vernacular architecture may be needed.

Historic sites can possess deep, rich, temporally homogeneous middens as well as deep, recent fill. In these instances, excavation by stratigraphic levels greater than 10 cm, when the depth of the strata is known through previous phase IB testing, may expedite excavation without sacrificing significant vertical control. Excavation by stratigraphic level may also be necessary in areas of intricate stratigraphy.

[3] The NHDOT may have contracted with an architectural historian to conduct architectural surveys in the same area. In this instance when the remains relate to the archaeological remains, the study may benefit from incorporating the architectural description and analysis into the report. It is important for the architectural historian and archaeologist to cooperate and share information during investigations.

Carefully document the use of and reason for this method. As explained above, sheet middens are tested in 10 cm levels within strata. Although most often utilized in Phase III, such approaches as the carefully controlled, open area excavation and the use of the Harris Matrix where relatively broad areas are exposed may also facilitate the documentation of the complex stratigraphy of a historic site in this phase. If the archaeologists elects this approach, maintain reference to the horizontal grid to correlate with traditional record keeping and ensure locational controls for artifact analysis. In phase II, maintain 10 cm levels within the strata except for those instances noted above. This excavation strategy carefully documents the extent of each stratum and its interrelationship with other strata, features, building remains, and artifact deposition. The approach can enhance the understanding the horizontal distribution of features, structural remains, sheet middens, and other deposits in relation to each other and standing buildings and landscapes within the same stratum. This horizontal analysis of site stratigraphy is often critical to the identification of remains of each time period represented at the site.

Data Analysis: As research proceeds, it is understood that the direction of data analysis may alter because of unanticipated data. By this stage of study, it is incumbent on the principal investigator to pursue the data analysis that best reflects the data and the context(s) to which the resources relate even though such an analysis may deviate from his/her general research interests. Another course would sacrifice increasingly scarce, nonrenewable resources.

Unless new site components are found, these analyses extend the Phase IB investigations. In Phase II, analyze the site's vertical and horizontal structure, including the soil stratigraphy across the site and the relationship of the strata to site components and their associated structural remains, features, and artifacts. Complete the basic counts of artifact categories by strata and horizontal division, for example by grid unit and/or feature, permitting the identification of artifact concentrations within them to understand the ways in which the site was used. Examine diagnostic artifacts to verify cultural affiliations and date site components. Conduct the radiometric dating of pre-contact components as well as the preliminary examination of faunal remains, shells, and seeds retrieved during excavation and through flotation. And integrate environmental and documentary data with the results from the analysis of the field data. If Phase IB indicates the presence of pre-contact Native American sites, Phase II funding should accommodate radiocarbon dating. The inclusion of catalogue sheets alone fails to provide the analytical information required to understand the basic vertical and horizontal distribution of artifacts across the site. The distributional data derived from artifact counts should be summarized in table format and illustrated on site maps as described in Phase IB (IV. Standards for Archaeological Field Investigations; B. Phase IB).

The intent of the data analysis is to address two issues: the level of site integrity and whether the data and associated features will augment the understanding of the one or more contexts to which the site relates as well as the development of the site itself. To address the first issue, the field investigations and analyses need to indicate whether materials associated with each component are or can be separate from the others and whether the horizontal distribution of features and artifacts potentially reflect variation in uses or time period of occupation across the site or later disturbance. It is also important to establish the integrity of the site relative to others through which the same questions may be addressed. The second issue examines whether the investigation of artifacts and their associated strata and features address such significant questions ranging from the structural characterization of the site type, the understanding of early building form, the use of technology, and commercial relationships to questions about diet, social status, and the roles of household members. Integrate site-specific and context data and applicable interpretations drawn in Phase I with the results of Phase II investigations. Reanalysis of these initial data in light of Phase II findings may be necessary.

All artifacts returned to the laboratory are cataloged, and the catalogue is placed in the report's appendix. Also include artifacts from Phases IA and IB that relate to the site(s) under investigation.

E. Phase III: Data Recovery

Research Design: Phase III data recovery is a full-scale investigation of the portion of the site affected by the project. These investigations are delineated through a research design on the basis of Phase II data. NHDOT has the research design prepared under the Service Agreement usually under a contract separate from Phase II work. The research design (see VII. Submittal Documents; B. Research Design) specifies the research questions, expected explanations from comparative research, the associated methods of field and archival investigations and analysis, and connecting arguments. These investigations maximize the recovery of significant data available at the site, not the specific research interests of the principal investigator. The research design also details in consultation with the agency and the NHDHR the approach to public education. The NHDOT submits the research design for NHDHR review and approval. The research design and public education elements are incorporated into a Memorandum of Agreement (see 36 CFR 800.66C) between the federal agency, usually FHWA or ACOE, the NHDHR, and, if requested, the Advisory Council, who are signatories, and others with a role in the MOA who participate as concurring parties including the NHDOT. The research design and Phase III investigation are completed under two separate agreements, the Service Agreement and a separate contract respectively. Although Phase III focuses investigations through the research design, it incorporates the standard steps of environmental study, research, field investigation, and data analysis into the study.

Phase II work is intended to be sufficiently thorough to determine the quantity and quality of data contained within the affected portion of the site. However, sampling does not always provide an accurate reflection of these elements. As a result, Phase III excavation may not locate the kinds of data necessary to address all the questions posed in the research design, and unanticipated data may provide material for other research questions. When ongoing excavations encounter this situation, the principal investigator should immediately notify NHDOT about necessary modification of the research design.

As noted for previous phases, a principle investigator with 36 CFR 61 qualifications in the appropriate areas of specialization for the site under investigation must closely supervise research, field investigations, data analysis, and report preparation. Phase III data recovery often involves consultants with specialized training. List the types of specialists, their training, and their role in the proposal for the Phase III investigations.

Environmental Context: Review the environmental factors relevant to understanding the cultural context(s) associated with the site, its location, and the research questions. If the context has not been adequately addressed in Phase II, finish the necessary investigations. A detailed statement of the environmental context is placed in the Phase III report. The following types of information should generally be included: geology, glacial history, hydrology, physiography/geomorphology, soils, climate, flora, and fauna and the ways in which the ecology of the area has altered through time, focusing on the period of site occupation. Also describe the past and current land use/landscaping patterns and describe the existing cultural landscape/setting, identifying past and recent modifications as they relate to the significance and condition of the site under examination.

Site Specific and Contextual Research: Research depends in part on the research questions addressed by

Phase III investigations. The Phase III report includes a concise description of the cultural contexts (See Appendix D), relevant site types, and site specific information related to the site under investigation and its setting. Also incorporate data relevant to the subject site gained from Phase IA-II reports completed for the project. It is through the comparative and contextual research that data from the site are given broader meaning and through it the site achieves its significance. Thus, this information is critical to the Phase III report.

The current status of research as it applies to the research questions should be summarized in the research design and provided in detail in the Phase III report. Phase III investigations include a comprehensive review of the comparable sites, including published and unpublished reports; in some cases, continued interviews with local landowners, avocational archaeologist, local and regional archaeologists and specialists; and examination of related collections in public and private ownership that enhance the understanding of the subject site and research questions. Manuscript research may add to the understanding of the site type. For example, contemporaries describing early industrial processes and machinery may permit interpretation of an industrial site. Depending on the nature and significance of the site or site complex, Phase III research in or information from out-of-state repositories may be necessary.

During Phase III investigations at historic sites and within a sufficient time frame to benefit data recovery and artifact analysis, conduct research and the analyses of the materials in relevant detailed records, for example newspapers, federal and state censuses, retail store account books and related records, diaries, detailed institutional and company records, wills and estate inventories, and private archives and public manuscript collections, and photographic collections. This detailed research continues to focus on the associated contexts and related site types, comparable sites in the region, a history of the site's development, and the research questions. This research is presented in the Phase III report.

Field Investigations: The field methods and kind of data sought for data recovery are detailed in the research design. Depending on the site type and the research questions, these investigations sample the range of significant occupations. Investigation goals in Phase III include confirming and carefully documenting site structure vertically and horizontally to understand the interrelationship of the features, strata, and artifacts of each component and determining their temporal and contextual relationship as well as addressing the research questions.

Excavation in Phase III investigations typically covers a more extensive area. If a portion of the site will remain, the stability of the permanent datum set in Phase IB is confirmed, and mapping of the existing surfaces including the one meter grid system occurs before excavation. If used for mapping, Phase II maps are field checked. Again the approach to excavation is dictated by the questions, type of occupation, and data being recovered. However, block excavation and trenching are the most common approaches to investigations. Levels are removed by troweling or shovel skimming in 5 to 10 cm. intervals within soil strata. Store artifacts by these increments and by the grid system. Depending on the size of the artifacts being excavated, screen dirt through one-eighth to one-quarter inch hardware cloth. Some features may require the piece-plotting of artifacts. Follow the guidelines for deep excavation presented under Phase IB investigations. The mechanical removal of soils is limited to the removal of recent fill and overburden identified as sterile during previous testing. Where environmental circumstances permit and when intensive excavation has sufficiently sampled the site, mechanical stripping of plowzone may expose additional features within the area of impact, permitting a more extensive investigation. Areas of the site extending beyond the project should be protected from stripping, mapped, and set aside as a protected area. Depending on site content and research design,

Phase III likely involves the collection of soil samples for flotation and analysis of botanical and faunal remains, the examination of soil chemistry, and the collection of radiocarbon samples. Record keeping for the field investigations follows a standardized field site form and level of detail as noted under the section: IV. B.

As in Phase II investigations of historical archaeological sites, the open area method and Harris matrix that focus on the horizontal extent of the stratum and maintain reference to a horizontal grid, may be the most efficient method to sort complex stratigraphy of the historic site. Vertical control is usually by strata and 10 cm levels within the strata. Depending on the nature of the artifact deposition, for example artifact-rich middens vs. stratified sheet middens, and the nature of the strata, recovery by strata may be sufficient. At the other end of the spectrum, piece plotting of significant finds may be necessary for other deposits. Include from earlier phases and expand the data documenting associated standing buildings and structures, their visible remains, and associated landscape features. Phase III includes an interior inspection of the building with measured sketches of the floor plan, delineating room size, window and door placement, chimney locations, storage areas, stairs, and other features significant to the study. Room function contemporary with the period under investigation is important to the study, but difficult to address. Areas of the building or structure that have undergone relatively recent modification and hold little information for analysis do not require similar detail. Also photograph representative areas. An architectural historian versed in regional vernacular forms should provide guidance in this area. The analysis of spaces represented in floor plans and site plans documenting landscaping features should be integrated with the belowground data.

Data Analysis: Analysis should examine and integrate the different forms of data collected during data recovery and those of earlier phases that relate to the site under investigation as well as those gained through comparative analysis with parallel sites within the region and other contextual information. The focus of the qualitative and quantitative analysis that is required to understand the artifact assemblage within its physical context will vary depending on the research questions being addressed, the site type, and the cultural context(s) to which it relates. The analysis typically includes, but is not limited to, the correlation of soil stratigraphy with the horizontal and vertical distribution of artifacts, features, and structural remains within and among the site's components; the dating of strata through radiometric and other methods; an the study of the soil composition and an understanding of the past environmental contexts of the site and the significance of these variables; detailed lithic and ceramic analyses; high magnification use-wear analysis; detailed botanical and faunal analyses; detailed analyses of specific artifact types often involving the examination of other sources including other related site collections; comparative document and artifact research examining the technological production of classes of artifacts; and the interpretation of building remains through the examination of functionally and structurally comparable building forms as well as the associated archaeological evidence.

Although the research design specifies how the analysis proceeds, unanticipated data should also receive consideration and some anticipated data may not be recovered. Again, changes in analytical strategy are confirmed with NHDHR and NHDOT and explained in the report in the statement of method.

All recovered artifacts are catalogued (see VI. A). Because of the large number of artifacts associated with some types of Native American and many historic sites, the principal investigator in conference with the NHDHR and the NHDOT may need to address which portions of the assemblage are retain. Retention includes collection sufficient to permit its reanalysis to examine the research questions of the data recovery project from a different perspective and pursue other questions and types analyses at a later date. The method of and reasons for the artifact selection and the discussions about it with the State

Archaeologist are documented n the Phase III report.

F. Monitoring and Unanticipated Finds

Monitoring is not a substitute for phased investigations and frequently does not provide the best circumstances for documentation. Under the conditions of monitoring, it is often difficult to identify archaeological deposits. The archaeologist often has limited time to investigate deposits whose significance may not be well established. However, there are circumstances under which monitoring by a 36CFR61qualitifed archaeologist with qualifications in the needed areas of expertise are warranted: 1) locations where previous testing has failed to identify archaeological deposits in an area generally associated with high archaeological sensitivity and 2) areas that are not reasonably accessible to investigation prior to excavation for construction, for example in urban areas as noted above or under roadways and parking structures. Time must be set aside during the construction to investigate and document such deposits, resulting in scheduled work delays. Sometimes, construction can be sequenced so that work is shifted to other areas during excavation. Finally, construction may encounter unanticipated finds. Section 106 of the National Historic Preservation Act also directs federal agencies and its representatives to recover such deposits if the SHPO and federal agency agree that they possess sufficient significance. Such discoveries should generally be treated as a monitoring situation in which the remains are recovered and documented.

The approach to field investigations will partially be dictated by the type of construction project and the nature of the archaeological and historical studies that are being conducted for the project. Prior to and following the construction project, conduct property specific and contextual research to assist interpretation of the archaeological deposits. In this situation, it is particularly important to understand what may potentially be found. Map the area prior to construction. When possible, provide profiles and plans of the monitoring situation, describe soils and structural remains, and, as closely as possible, provide the vertical and horizontal context in which the artifacts and features are located. Conduct analyses sufficient to interpret the archaeological deposit commensurate with the find and field effort. Prepare the report following guidelines applicable to the Phase IB to III level, depending on the significance of the find. Address each section of the report in a manner informs the retrieved site elements.

G. Urban Archaeology

In urban archaeology, access to archaeological deposits is often limited by paved roads, parking lots, or buildings. As a consequence, a typical phased investigation generally practicable. The Phase I effort often focuses on an intensive literature search, the completion of some property-specific research, and the development of associated contexts generally prepared for the Phase I-II levels. Depending on the location of the project area, this research may include project designs for adjacent, earlier construction projects to chart the level of disturbance. Such documents are frequently available in the city engineer's or planner's office or at state and federal agencies that undertake or review construction projects. NHDOT has such documentation for some projects such as I-93, I-293, or the Spaulding Turnpike. Such mapping often illustrates the landscape and its buildings before construction as well as the construction limits. Previous transportation projects can cause significant disturbance. This review aids in the more precise definitions of sensitive areas. Also in Phase I, complete a Phase IA walkover of all accessible portions of the project area. Depending on the nature of the area, soil coring and excavation of

judgmentally-placed test units provides information about level of disturbance and soil sequences. If possible, conduct systematic, Phase IB investigations in open, accessible, archaeologically sensitive areas and as properties are purchased or where agreements are reached with the property owner to permit excavation and backhoe trenching to reveal deeply buried strata. Because time frames in these circumstances are often short, Phase II may need to immediately follow Phase IB or combined with it. Much of the testing is likely to occur in monitoring situations during short periods when access is provided for the mechanical removal of hard surfaces, structures, buildings, or upper soil strata, presenting the need for rapid recovery of information prior to construction. Consultation with both NHDOT and NHDHR continues in this period to address issues of site significance and reach consensus concerning the most appropriate approach to retrieve sufficient data that address criterion D issues. End-of-field letters are prepared with mapping, profiles, photographs, and summary description of findings at the close of investigations in each area (see VII.D). The agency and archaeologist should develop a protocol to monitor the existence of and assess the danger of hazardous materials often encountered in urban situations.

V. Reporting Standards

A. Report Format

In general, reports providing the results of investigations for the NHDOT should have the format specified below. As long as the necessary topic are covered, they are clearly titled, and follow a logical order, the exact order need not be followed below. However, do discuss the method of field investigations, literature search, and other research together under the method section.

Each report should stand on its own, containing the information necessary to understand the resource under investigation. If a Phase IB report, for example, requires information from the environmental context or historical context that is in the Phase IA report, then summarize it or restate it in a manner that assists the interpretation of resources identified in the Phase IB. Simply referencing the reader to a section in the Phase IA report often loses the interpretive value because it was not prepared to convey information about the specific resources under discussion. The context needs to be tied to the local history and the resources. However, do not include information from the Phase IA report that is not relevant to the increasingly focused investigations of later phases.

The NHDHR has developed a “Bibliography Database Submission Form” page, which is submitted with but not in the report. This information updates NHDHR new listing of New Hampshire reports of investigations. The form is available on the NHDHR website, and an electronic copy may be requested from NHDOT (X.A).

Title Page:

Provide project name, state number and federal number if one exists, the phase, a more descriptive report title, notation as to draft or final, the project sponsors, the principal investigator and other report preparers, company name, address, and month and date of the report submission to NHDOT.

Abstract:

Note the project name and numbers with a brief description of the project; identify the project sponsor and regulatory/lead agency; describe the project area and survey area; provide the dates of

investigation and report completion; briefly indicate the methods of study; summarize the investigations and results; note problems encountered by the study; and provide recommendations for further study needs. Prepare the abstract for the general reader.

Table of Contents:

Include report sections, appendices, list of figures with map, drawings, sections, and photographs, etc., and list of tables. Number all pages so these items can be readily found.

Introduction:

Identify the project sponsor(s), usually but not always NHDOT and FHWA, NHDOT by itself, or NHDOT and the Army Corps of Engineers; the laws requiring the investigation, usually either Section 106 of the National Historic Preservation Act and its accompanying regulations: 36 CFR 800 and/or RSA 227; the project name and numbers; the project description including location, general project boundaries and size, any alternatives, the nature of the construction and anticipated impacts; a summary of the purpose and scope of the archaeological study and notation of previous archaeological or related studies for the subject project; and the boundaries of and amount of area in the archaeological APE. Identify the principal investigator, project archaeologist, and all other staff participants and consultants and their roles, and other contributors. Note the field investigation dates and date of report completion.

Method Statement:

The phases of archaeological investigation have three broad components in addition to the development of the scope of work and report preparation: research, field investigations, and data analysis. In the introduction to this section, detail the scope of work as an introduction to the method statement in each component of work. In Phase III reports, the methods section details the research design. Place a copy in the appendix.

For the research component, describe the repositories visited and the types of resources examined for the literature search, background information about the Native American usage of the area and the historical development of the property and immediate locale, the preparation of the context and description of the site type, and the site and context specific research of Phase III. These resources are listed in the bibliography. Indicate the area covered for the examination of site data in the archaeological files and provide the basis of selection, for example an arbitrary radius, sites adjacent to a specific body of water, etc. If numerical or other kinds of analyses were performed with the collected data, describe this process.

For the field investigations component, provide a detailed description of the field methods employed in the investigations, including the sampling strategy; the number, types, size, and distribution of tests; the strata removed and the average depth of the test units; and screening of soils. Note areas covered by pedestrian and other non-intrusive survey. If the testing varies from standard practice, indicate the reason and locations where this deviation occurred. Indicate whether materials were discarded in the field and the way in which they were recorded. Show these strategies on the project map. Describe the collection of samples. Include the amount collected and the location of samples for flotation. Provide the location of carbon samples. Indicate any problems encountered and approaches to their resolution.

For the analysis component, describe in detail the methods of data analyses and of the integration of

field data and research, and interpretation. Specialists contributing to the study also provide a statement of their analytical methods. Describe how artifacts were processed, catalogued, labeled, and prepared for curation. Indicate the method by which individual artifacts were analyzed. Identify the temporary and permanent repositories of artifacts, field notes, other field data, and associated project materials and reports.

Environmental Context:

Describe the existing geology, glacial history, hydrology, physiography/geomorphology, soils, climate, flora, and fauna and the ways in which the ecology of the area has altered through time, focusing on the potential or known periods of site occupation. Include the past and current land use/landscaping patterns and ground visibility. The contents of this section will vary according to the phase, physical environment being affected, and the potential cultural resources that may be potentially located in the APE. Although noted here, in-depth discussions of some environmental parameters may be better placed with the cultural context to which they relate.[4]

Cultural Context:

Provide the results of the literature search, which gives the status of the research in the area. This section characterizes known Native American and historic period sites within and adjacent to the project area, discusses contexts and site types associated with identified or potential sites in the APE, presents the results of comparative research, and discusses the specific Native American and historic period development of the APE. The NHDHR has developed a list of context and maintains supporting data for some of these (XD). Background information may provide insight into the level of disturbance found during the examination of the APE. The level of detail and analysis regarding these topics will vary according to the phase. During the Phase IA, this section presents the potential resources and those identified through the literature search in and near the project area and in later phases provides data related to sites identified in the APE and comparative data as the APE undergoes survey. Make this section specific to the project area and its immediate region that is informed by the more, interpretive general data rather than providing boilerplate text that applicable to most of the state. They are, in most cases, too general to provide an understanding of local cultural development.

Results of Field Investigations:

Provide a detailed discussion of the results of the field investigation and analysis. In Phase IA, this section presents the data on which assignment of sensitivity is made. It would include a discussion of

[4]Data on geology, glaciation, and hydrology are provided in the county soil surveys. A comprehensive bibliography on these topics may be found at www.des.state.nh.us/deslette.htm. Then go to geological publications in the upper right. Many are available at DES on Hazen Drive, Concord, and some of them are provided at the above web site. Several other publications of interest are: R.M. De Graaf and M. Yamasaki, *New England Wildlife: Habitat.* Natural History, Distribution, University of New England Press, Hanover (2001); J.B. Lyons, W.A. Moench, and R.H. and J.B. Thompson, *Bedrock Geological Map of New Hampshire*, U.S. Department of the Interior, U.S. Geological Survey, the U.S. Department of Energy, and the State of New Hampshire (1997): 2 plates; and R.T. Novothey and T.R. Myers, *The Geology of the Sea Coast Region, New Hampshire.* New Hampshire Department of Resources and Economic Development, Concord.

visible features, the results of soil coring and limited testing and locate visible ground disturbances. After Phase IA, these discussions provide a description of subsurface investigations including an analysis of the soil stratigraphy and any associated cultural materials, features, and artifacts of identified sites. Each site components is discussed and illustrated separately unless its representation is numerically insignificant and fails to hold interpretive value. The results of the investigations are shown on the project maps. Tables and maps showing the distribution and counts of classes of artifacts are included for sites with significant numbers of artifacts. At the Phase IB level, provide an approximate definition of site boundaries based on artifact and features presence and absence gained from the 4 m close-interval testing. Identify these boundaries more closely in relation to the project area at the Phase II level. Site interpretations initiated in Phase IB become more refined as investigations proceed. Indicate any areas within the APE that remain unsurveyed and state the reasons.

Artifact Analysis:

In Phases IB and many Phase II investigations, the characterization of artifacts is usually placed in the field investigations section in the discussion of artifact distributions in each level and of the features within each site component or site location. However, in some Phase II and in Phase III reports, a separate discussion frequently analyses significant artifact types that date and characterize the activities at the site and address research question, for example classes of lithics or ceramics as well as faunal and plant material. It may contain the results of archival research on the manufacture of a class of historic artifacts. While the reports of specialists may be placed in an appendix, the interpretation of the site is usually also best served by integrating that discussion into the body of the report when their contribution is not ancillary to, but an essential part of the study. These artifact analyses are informed by maps and tables illustrating the counts and distributions of classes of significant artifacts across the site. The conclusions from this discussion are then integrated with the other site and research data in the site interpretation section below.

Comparative Analysis:

Phase II and III reports contain detailed discussions about sites that are comparable in cultural affiliation, period, function, and/or structure and often occur within the region. Include such information as name, number, location, a USGS map providing the location, its environmental setting, cultural and functional associations, period of occupation, and significant site structure and individual elements, for example specific features and artifact types, as they compare to the subject site. The section includes a discussion of their physical integrity and incorporates relevant data about the context(s) and site type as they relate to the site under investigation. A discussion addressing integrity in comparison to the subject site is an important part of the significance discussion.

Site Interpretations:

In many Phase II and in Phase III reports, a section is dedicated to interpretation. This section integrates all the research efforts, including information gathered from the historical research about the site, its associated contexts, and site types; the comparative site analysis; data from the field investigations; artifact distribution studies and analyses; specialized studies on specific classes of artifacts and organic and other materials; and aboveground elements, etc.

Statement of Significance:

The Phase II report contains the statement of site significance. Four main elements compose this statement: (1) historical/cultural context and site type; (2) relationship to comparable sites; (3) site integrity; and (4) eligibility under National Register criterion D, the ability to address significant specific research questions through data recovery. This section of the report is prepared as a stand

alone document within the report, and an unbound copy is submitted with the report (see VII.F.). Note that site significance can be based on other National Register criterion, therefore not necessarily gaining significance for the data that may be recovered. A site may gain significance for its cultural/religious associations under criterion A. If significance is found, indicate whether its appropriately mitigated through data recovery. Or whether the site possesses such a high quality of data that it should be saved for future research or has significance through its associative values with Native American or other ethnic groups that it merits preservation in place.

Summary and Recommendations:

Summarize the study including the extent and nature of the project, the components of the investigations, and the findings of the research and field investigations in a logical manner that will facilitate the presentation and justifications of recommendations about the absence of site significance or the need for additional investigations. If the goals in the proposal could not be met, indicate the reason and solutions to resolve the issue. If further study is appropriate, provide and explain specific and detailed recommendations so that additional investigations are unnecessary to initiate the next phase of investigations. The discussion includes the additional research, method of field testing, location and amount of area included, and forms of data analyses. Delineate the recommendations on a project map. In Phase IA, assess the archaeological sensitivity and visible or documented levels of disturbance within the APE, clearly explaining why a Phase IB study is or is not necessary. In the Phase IB report, clearly identify a testing strategy that will enable the Phase II to address site significance. Delineate the location and form of testing, the size of the units, the types of samples, and the areas of contextual, site specific, and comparative research. Describe the types of analyses that should occur. The Phase II report must include sufficiently detailed recommendations to prepare a Phase III research design if the site is significant (see VII B). If it is significant for its associative values or for future research, then recommendations should also discuss stabilization and preservation options.

Bibliography:

Include all the resources and interviews consulted during the study. For manuscripts, also identify the repository. Follow the American Antiquity format. Integrate historic maps into the body of the bibliography, listing them by map maker/author or publisher, for example, Hurd, D.H. & Co., the 1892 series of reprints. Without publisher or author, then they are usually listed as anonymous. If map analysis is a significant portion of the investigation, the maps may also be listed separately by date. Provide citations in the body of the report to bibliographic entries with page number, if possible, in the parenthetical format.

Illustrations:

All maps and drawings are clear and produced at a legible scale. Place a north arrow, scale, date, author, caption, and key if needed clearly explaining features illustrated on the map. All photographs are captioned to include a locational description and direction of view. Number all figures and maps for reference in the text. Place maps with archaeologically sensitive data in a pocket at the back of the reports or in a separate volume, sending such copies to NHDOT, NHDHR, and the federal agency. Prime consultants may also need this information for highway design including context sensitive designs.

Mapping should be at several different levels so that the relationships among elements in the project area and between them and physical and cultural elements outside the APE and project area are clear. The discussion below leaves some latitude in the way the project area and its vicinity are delineated.

Available maps, the size of the area, the scale of the project, and the number and size of features being delineated on maps will vary considerably from project to project. Above all, make certain that the significant features, their interrelationships, and their placement in the region are clearly presented. Always include a USGS map of the project area and delineate the identified resources in the project area on the NHDOT design map so that significant resources can be avoided when possible. The levels typical levels of mapping follow.

1) Include a small scale vicinity map illustrating and naming nearby town boundaries, any adjacent communities, waterways, roads, and other natural and cultural features that show the locus of the project area and the significant features of its current physical context. A small inset map can show the project's location in the state. The objective is to understand the project area or site in relation to the natural and cultural landscape; to give the reader a "sense of place" to use a trite phrase. For example, in urban areas, a map identifying the project area in relation to the street system and other significant urban features provides a better sense of the location.[5]
2) In Phase IB through III, if land ownership boundaries gain importance in the development of the historical context, inclusion of relevant sections of the tax map(s) may be helpful. NHDOT has them for most towns.

3) Illustrate the project area and survey area accurately on a USGS map, and show the location of adjacent known sites discussed in the text. Intended to assist the interpretation of sensitivity, the area examined during the initial literature search should be based as much on parallel environments in the locale or on the historical context as on a specific radius such as 5 km.

4) For Phases II and III, locate sites identified for comparative purposes on one or more USGS maps to illustrate their physical context. Other locational maps may be necessary to adequately display the natural and cultural setting under investigation.

5) When possible, use the NHDOT project design map as a base map. Clearly delineate and identify the project area and the APE. The amount and types of data and level of detail depend on the number of resources identified and the phase of investigation. If nothing is found, it is sufficient simply to show the APE on this map. Project design changes through time, and it is important to clearly convey the area that is examined.

[5] Town and city governments, usually the planning office or clerk, have local maps that show cultural features including roads, water courses, town and adjacent county boundaries, and parks. Depending on the project, another option might be to develop a map through the Cultural Resources Manager. The NHDOT Bureau of Transportation Planning can produce a map that includes specified boundaries at the needed scale with the following data layers: all public and some private roads, nearby town and county boundaries, hydrologic features, bridges, rail facilities (also from the Bureau of Rail and Transit, for example valuation and facility maps), park and ride and rest areas, parks and forests, data related to NHDOT facilities such as its district facilities and airports, some data layers from NH Granite including soils, wetlands, bedrock, etc., and, at large scale, contours.

Typical data on the map would include, for example, the datum of a grid system, survey techniques including areas covered with pedestrian survey, areas examined by remote sensing, the grid established for subsurface testing, the location of test and excavation units, backhoe trenching, areas of any stripping in Phase III, the location of artifact clusters and features, and other findings. If in the APE or very close, show roads and former roads, railroad corridors, waterways and canals, and stone walls. Identify foundations, landscaping elements, wells, other remains, and related buildings and structures fifty years or older, particularly those that appear to be historically associated with potential or known archaeological deposits and building remains. Illustrate features that lie adjacent to the APE if they appear to relate to the historic features within it. In Phase IA reports, show the areas of disturbance as well as sensitivity. Delineate provisional site boundaries within the project area on Phase IB project maps, and establish these boundaries on Phase II project maps.

6) Depending on the number of cultural resources located and the size of the project area, it is usually clearer to illustrate the placement of the resources on the above project map, keying it to larger scale maps of each resource or resource cluster. For Phase IB through Phase III, increasingly more detailed site plan maps; profile drawings of test and excavation units and trenches; plans and profiles of features; and line drawings of artifacts are needed.

7) On Phase IB and II site or project plans, the inclusion of a count of significant artifact types or total artifacts per unit of excavation assists the understanding of artifact distribution. It is not necessary to prepare different distribution maps for site possessing both Native American and historic artifacts if one component is numerically insignificant and adds little to the understanding of an associated context.

8) Incorporate copies of historic maps, photographs, and other historic illustrations in the report which permit the reader to better understand the historical development of the project area. Rather than just serving as passive illustrations, it is equally important to integrate these data relevant to the understanding of the project area into the text. A map's role in the analysis and interpretation of data depends on its believed accuracy of representation. In some cases, it may be important to evaluate key resources in the methods section. On historic maps, include north arrows, the scale if known, and identify the area of interest. The reader is not as familiar with the general landscape as the author. Make the map scale large enough to clearly see the significant illustrated features.

9) Include current photographic views showing the overall APE when they provide useful information about the physical characteristics and levels of disturbance of the project area. Also include as appropriate photographs of landscape features; buildings, structures, and their remains; site locations; profiles; diagnostic artifacts; and comparative collections.

As noted under field investigations, in Phase III and some Phase II reports, historic sites with associated historic standing buildings, exposed building remains, and landscape features often warrant more detailed photographs showing all elevations of the building/structure, details of construction techniques and materials, decorative details, its relationship to its setting, other buildings, and excavated remains, and interior spatial arrangements and detailing if interior investigations occur. Include floor plans of buildings including the cellar level and occupied floors for those buildings related to the focus of the investigations that retain evidence of room arrangement for the period under study.

10) In phases IB through Phase III, tables in addition to the catalogue can effectively summarize the

distributions of significant artifacts categories to support interpretations and recommendations.

Appendices:

Include a detailed artifact catalogue, NHDHR archaeological inventory forms or revised inventory forms, and research design for Phase III in appendices to the report. Always include an extra, unbound copy of the site form for transmittal to NHDHR. Studies by specialist such as the faunal analysis are a significant section of the study. If it is submitted as an appendix, the method, results, and interpretations must be integrated into the report.

Recipients and Number of Copies:

Unless otherwise directed, submit all draft and final reports to NHDOT or to the principal engineering firm who then submits them to NHDOT for review. NHDOT will review the reports and transmit them to the Division of Historical Resources and other agencies. The number of required report copies varies according to the clients involved. In addition, a copy for the consulting engineering firm, NHDOT requires two draft copies, one of which is sent to NHDHR.

Final copies for Phases IA through II are distributed by NHDOT to the principal engineering firm if not an initial recipient, NHDHR, and the sponsoring federal agency, usually but not always FHWA or the Army Corps. There may be more than one participating federal agency for the project, and usually each will require a copy. Also submit two copies to NHDOT for Native American consulting parties to NHDOT projects. If contracting under the Service Agreement rather than a subcontract to an engineering firm and one federal agency is involved, consultants usually submit a total of five final copies. If there is no federal agency involved, then submit two final copies. Remember that the information in these volumes is confidential (see RSA 227-C:11). Any other requests for copies need to be submitted to NHDOT.

For the Phase III report, the require number of draft and final copies is specified in the bid package. Because the final copies of Phase III reports are in part prepared for the public, they often require the deletion of site location information. Therefore, the final preparation of these reports must be discussed with NHDOT and NHDHR.

More detailed notations for some sections of the report for each phase follow.

B. Phase IA Report

Methods Statement: Describe the repositories visited and the types of resources examined. Note repositories that may preserve artifact collections relevant to the APE. Identify the area covered for the literature search and known sites, state the reason for the area selected, and specify contexts initially developed for the literature search. Describe and illustrate on the project map the area covered by the pedestrian survey. State the reason any portions of the APE were not covered by pedestrian survey. Indicate the method used for the location of soil cores, remote sensing, and any shovel tests, for example judgmental or placement at a set interval, to identify areas of disturbance or confirm site presence. Describe intervals, size of core, unit size, and depth of levels, and screening, etc. If test pits or cores excavated for soil testing or hazardous materials were monitored, provide their placement, approximate size and depth, and data obtained. Describe the artifacts analysis and integration of these archaeological data with environmental data, the results of research, and aboveground data if applicable.

Environmental Context: Provide the environmental context as described in the report format. An understanding of environmental changes in the area is critical to understanding the precontact land use. A careful description of the current landscape, land use patterns, and potential disturbance is essential to understanding archaeological sensitivity.

Cultural Context: The narrative places the development of the project area within its Native American and Euro-American framework, orienting the discussion towardly known and potential resources in the locale. Integrate[6] the more general information with data specific to the project area to assist interpretation. See V. Reporting Standards, A. Report Format, Cultural Context for the type of information to include in site description from records of known sites chosen for the larger APE. Provide the Smithsonian number, citations to the identified sites, and location on an accompanying USGS map, which also shows the APE. In the discussion, identify the contexts to which known and potential sites may relate, incorporating references specific to the development of the area. Because specific sites are not often identified in this phase, extensive development of specific contexts is generally not warranted except in urban settings. If sites identified in the literature search are thought to occur within or immediately adjacent to the APE, then more extensive discussion of the context is warranted.

Results of Investigations and Interpretations: Describe the findings of the pedestrian survey, soil coring, remote sensing, and any subsurface testing. Document the physiography of the APE and cultural landscape features; delineate aboveground remains, surface finds, and known sites; and describe the soil stratigraphy, artifacts, and features found if subsurface testing is undertaken. Indicate whether previously identified sites appear to be intact. Include an artifact catalogue in the appendix. Connect features identified in the field to the history of the project area and any identified context described in the literature search. Note locations unlikely to contain archaeological sites, for example excessive slopes. Carefully delineate areas of disturbance and document the reasons for these findings. Cite the sources that provide this information.

Recommendations: Identify archaeologically sensitive areas, providing a clear reason for recommendations, for example site density in the area, known sites within and adjacent to the APE, visible remains, and favorable environmental parameters. If further Phase IB survey is recommended, then carefully delineate the areas and approaches to survey. Discuss areas, for example foundations or trash deposits, that may require a different approach from the 8-meter interval testing. Note where there is a potential for deeply buried sites and recommend the testing approach. If no further survey is recommended in some portions of the project area, delineate the areas on the project map and summarize the reason for the absence of sensitivity.

Bibliography: Place all references including oral interviews with person's name, place of residence, and date of interview; map references; and manuscript collections with repository in the bibliography. Provide citations with page numbers, where possible, to statements in the text.

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[6]The integration of data gathered from written, pictorial, and verbal sources with specific site information may be done in the following manner. General and specific background information may be placed in the cultural context, keying it to any potential or identified site described under the investigation section. The investigations section would then incorporate references to relevant portions of this specific and contextual data to interpret them and the findings in the field and during analysis. The different kinds of data are carefully distinguished by referencing their source. While archaeologists are often concerned about intermingling field and written/verbal data, if these data are not analyzed as complementary data, then what results is a statement from the archaeologist and one from the historian/ethnohistorian. These statements are also brought together in the conclusion and/or interpretation sections.

Illustrations: See report format above.

Appendices: If any units were excavated that produced artifacts or the pedestrian survey recovered artifacts, include a catalogue in the appendix. Also include minimum or revised archaeological inventory forms.

C. Phase IB Report

Method Statement: Describe the repositories visited and the types of resources examined for the development of site-specific information and the examination of related contexts and site types. For testing at historical archaeological sites or deeply buried sites, note any deviations from the Phase IB, 8-meter testing approach and explain the goal of this testing. Adequate testing of historic sites often requires the use of judgmentally placed units to understand, for example, the extent of foundation walls and the relationship of foundation walls to the surrounding stratigraphy, the content of depressions, and the location of trash deposits in relationship to a building. Recall that testing outside the APE to approximate site boundaries need not follow the 4 m interval. In these instances, state what method was utilized. If the site appears to be extensive, for example those that ring Lake Massabesic, then indicate that and state how far outside the APE testing did extend.

Environmental Contexts: Include a statement about the past and present environmental context primarily drawn from the Phase IA report in the Phase IB report. Focus additional research on the periods encompassing the cultural remains identified during testing.

Cultural Context: Provide property and site-specific information gathered about the project area both in Phase IA and IB, that relates to identified visible and buried resources. Based on the preliminary identifications of cultural associations, functions, periods, and ownership for historic sites, begin to develop statements above the related historical contexts and site types. Always clearly tie the contexts to the property and sites under investigation. For all sites, incorporate into the discussion known sites and collections in the area that have parallel affiliations to the resources under study. This approach will assist in understanding the potential significance of such a site, in developing a testing strategy for those tested in phase II, and in interpreting exposed features and artifact remains.

Results of Field Investigations: The description of the results of Phase IB field testing usually states the way in which testing varied across the APE, provides an overview of the location of negative and positive units and their contents, and indicates the manner in which these finds relate to visible natural and cultural surface features. Discuss deviations from the 8 m-interval testing and excavation by 10 cm levels within natural or cultural strata, for example, deep testing or the use of a backhoe to remove recent fill from the interior of a foundation. Note the use of the 4 m arrays at positive finds to establish the existence of sites and estimate site boundaries. Describe the results of any supplementary testing, for example remote sensing.

Organize the in-depth discussion of the field investigation by resource concentration or component and then by unit. For each unit or combination of units, characterize the typical and any unexpected soil stratigraphy, their associated artifacts, features, and associated standing resources. Discuss in a preliminary fashion the significant horizontal or vertical variations in artifact function and date and the ways these deposits relate to features or building remains at the site. Provide the average depth of testing. If sterile soil is not reached, indicate why. Begin to link strata horizontally across test units through

characterization of strata and artifact contents.

At historic sites, relate buried architectural remains to their associated strata and provide artifact content. Provide descriptions of associated aboveground resources resulting from the architectural and landscape assessments as well as buried foundation walls where sufficient areas are exposed. Focus on resources associated with a historic archaeological site. Supplement the descriptions with photographs of the building and the setting as discussed under IV.C. If unassociated buildings greater than fifty years and with some integrity stand within or adjacent to the project area and are not being assessed by an architectural historian, notify the NHDOT. The cooperating archaeologist and architectural historian working for NHDOT in the project area are requested to share information and provide guidance in less familiar professional areas.

The Phase IB report provides an approximate definition of site boundaries. Indicate where and to what extent historic and Native American sites extend beyond the limits of the project, conveying the approximate site boundary. Where historic sites extend beyond the project area, provide a description and mapping of exposed features of the site. Also indicate the approximate vertical extent of the site in the APE as a distance below surface depth. The NHDOT will need this boundary information for avoidance by alternatives and the approximate size of the site to document the amount remaining for future preservation.

The artifact catalogue presents information sequentially by test unit and strata and level. If sufficient artifacts exist, display the analysis of artifacts categories and provenience for each potential site area. Summarize the distribution of significant artifact types on site/project maps by areas of artifact concentrations, for example by feature or unit.

The conclusions for the field investigation section review the area of positive finds and potential sites, provide approximate horizontal and, if possible, vertical boundaries of these areas, the types of features, summary characterization of the artifacts, artifact scatters, and associated aboveground remains and standing resources to interpret the findings. The result of these analyses begin to identify the number and horizontal and vertical distribution of site components, the cultural/historical associations and time frame through the analysis of diagnostic artifacts, and the site type or function. The Phase IB investigations also eliminate portions of the APE from future testing through negative evidence and identification of significant disturbance.

Summary and Recommendations: Clearly indicate whether Phase II testing is necessary, providing the reasons for further investigations based on the results of the Phase IB investigation. Provide clear direction for necessary research and delineate the archaeological testing strategy and area and approach to artifact analysis to determine more precisely the vertical and horizontal site extent in the APE, site components, cultural associations, functions, and significance. When Phase IB investigations locate archaeological deposits that the project may be designed to avoid and significance determination may not be pursued, clearly delineate the placement of construction fencing to protect the site near its boundary adjacent to the project and recommend other treatments to protect the site.

Illustrations: See Section V.A. For Phase II reports, also prepare a map of APE depicting artifact concentrations by artifact type and/or totals to support interpretations if the extent of findings warrant such a map. In addition to the site catalogue, prepare tables summarizing the distributions of significant artifact types to support the analysis. Photographs of the APE include views of the area undergoing archaeological testing and the photographs of related aboveground resources including buildings,

structures, foundations, landscaping elements, visible trash deposits, etc. Also provide views of profiles of units, profiles and plans views of features, and representative artifacts to support interpretations. In photographic captions, always include the direction of the view and a description of its location and the subject the photograph is trying to illustrate. Also incorporate copies of historic maps, photographs, and other historic illustrations and analyze them in the text. On historic maps, include a north arrow and the scale if known, identify the area of interest, and prepare a caption with citation including date if known and the importance of the illustration to the study. For the other historic illustrations, state in the caption the citation and date of the photograph, the location and direction of view, and a description of the view and the reason for its inclusion in the report.

D. Phase II Report

The Phase II report presents detailed site data sufficient to evaluate the significance of the site under investigation. For each section of the report, incorporate the relevant research and findings of Phase I that relate to the site under investigation into the Phase II report. The study needs to stand on its own as a single document.

Method Statement: Indicate which contexts and site types are being further developed to address site significance. Describe the repositories visited and the types of resources examined to gain these data, site-specific information, and comparative research needed to identify parallel sites for both interpretation and for assessment of site significance. Address any analytical techniques used to summarize these data. Provide the overall approach to field investigations and the goals of this testing including the use of the Harris Matrix and other modifications in the testing and recording strategies: the number and size of units; the testing strategy employed in their placement; description of the strata and average depth of testing; the square meters tested as opposed to the square meters of the site both for the total site and within the project area; the method of testing the features with the number excavated and the number preserved and mapped in plan; the approach to analysis of artifacts and integration of this information into site interpretation; the use of any special analyses; and the location of temporary and permanent data curation.

Environmental Context: As in the earlier phases, include a statement about the past and present environmental context, focusing on the aspects of the physical environment significant to the periods, cultural associations, and functions of the identified site.

Cultural Context: Continue to develop the Native American and historic contexts that provide the necessary thematic overview, time frame, and spatial extent to understand the role of the site(s) in the broader local or regional historical/cultural framework. Also delineate the existing understanding of the resource type that the site represents and the ways in which the type and potentially the site relates to and illuminates the context. This approach assists the understanding of the range of characteristics of the site type and the definition of the relationship of this site type to other, comparable sites that represent it as well as related site types in the locale or region associated with the same context. Based on similar, excavated sites and for historic sites that include standing properties, examine the manner in which this resource functioned within its larger framework. This understanding is an important component of the evaluation of site significance.

Thus, for the Phase II report, develop the context(s) and site types related to the Native American and

historic sites under investigation and provide the site-specific, background information, clearly tying this information to the archaeological deposits and related aboveground remains/structures at historic sites.

Results of Field Investigations: Provide a detailed description of the findings of field investigations organized by functionally/temporally related features and any associated building/landscape remains. Incorporate data from the site recorded in the Phase IB report to convey a comprehensive understanding of the site.

During Phase II, the site undergoes a broader, horizontal investigation. For each identified relate cluster of artifact concentrations and features or each component of the site under investigation, characterize the typical stratigraphy, incorporating a detailed description of the associated artifacts and sampled features. Illustrate the stratigraphy in unit profile drawings and provide plans and section drawings of excavated features. Trace the strata horizontally across the site as testing permits. Interrelate the strata and features and any building remains vertically and horizontally within site components. As in Phase IB, provide a summary of significant artifact densities by, for example, material and technology, functional class, or stylistic type for each site component in tables and/or on site maps as well as describing them in the text. Provide information from special analyses such as carbon dates and results of floral and faunal analyses. Through an analysis of each site component, discuss cultural affiliation, dates of occupation, and site function. Establish the horizontal and vertical boundaries of the site within the project area, supporting the discussion through the distribution analysis presented above.

At historic sites or components, provide complete descriptions of associated building/landscape remains, incorporating information from Phase I. Illustrate the relationship in plan view. Interrelate the strata and features with standing building and their remains vertically and horizontally within site components. Integrate the historical data in interpretive statements about each discrete unit/component of the site, characterizing it, if possible, temporally, functionally, and through ownership. Also, discuss the specific history of the site as a whole as it is known with episodes of building, replacement, demolition, filling, and dumping.

Comparative Site Analysis: Summarizing from the context section, relate the site to its context(s) and characterize its site type to discuss comparable sites and their integrity, if known, and provide the basis on which to evaluate the site's significance. Present sufficient background information from comparable Native American or historic sites to establish site significance in the next section. From data available in the NHDHR site files, site reports, and other research, include in the discussion site location, environmental setting, approximate size, cultural associations, periods of occupation, a brief description of relevant features and artifacts, and site integrity. Provide site location on USGS maps. This comparative study indicates the relationship of the subject site in its larger cultural system or the pattern of activity, the significance of the context and site type, their representation in the state, and comparative site integrity. The comparative analysis, which offers a broader view of the property type, helps to isolate and provide a more detailed understanding of the important characteristics of subject property and the research questions its investigation would address.

Statement of Site Significance (Determination of Eligibility [DOE]): The Phase II report provides an evaluation of site significance, which is prepared as a stand-alone document within the report. Submit an unbound copy of the statement with the reports to NHDOT (see VII.F). The statement concisely summarizes the methods and findings of the research, notes significant characteristics of the environmental setting, concisely describes associated cultural context(s) and site type(s), discusses the level of site integrity and its comparison to similar sites noted in the contextual discussion, provides a

statement of site eligibility for the National Register, and substantiates the level of significance, whether at the local, state, or national level based on the comparative analysis. The discussion of National Register criteria, which is commonly criterion D or significance for the information that the site contains, includes carefully framed research questions. Site preservation-in-place occurs when the site is of such importance that it is preserved for future research or it gains eligibility for its associative values under criterion A.

For this section, develop explicit research questions that adequately address the data-potential of the site through a Phase III data recovery. Provide a detailed discussion and substantiate these statements with known data from this site and the site comparison provided above. Additionally, provide the approach to research, field investigations, and data analyses that would permit the recovery of sufficient data to address these questions. Comparative site research not only supports the significance of the site by establishing its comparative integrity but is often an important component of Phase III investigations because the comparative studies enhance the understanding of a synchronic cultural pattern or change in that pattern by the examination of a larger universe.

Summary and Recommendations (Treatment): Summarize the findings in part so that they assist the description of potential direct and indirect project impacts to National Register eligible sites and to those sites that require supplemental investigations. Provide clear recommendations for future site treatment and support these statements.

Regulation 36 CFR 800.5 considers the destruction of archaeological sites by project impacts to be an adverse effect even when mitigated by data recovery. If an archaeological site is significant primarily for its research value that will be served by its recovery through controlled excavation prior to the proposed project, the Phase II report must provide sufficient data beyond that needed to establish site significance to prepare a research design that contains the significant research questions as noted above; to identify the additional research needs to understand the site, its context, and its site type; to conduct comparative studies; to develop a specific strategy for excavation to retrieve this data and a plan for data analysis with recommendations for appropriate consultants for identification of, for example flora and faunal remains, Carbon 14 dating, and special artifact analyses and research; identify needs for additional environmental studies and analyses; and an explanation of curation needs. For historic archaeological investigations with aboveground remains, present the approach and method to the completion of studies of the historic landscape, standing buildings and structures, architectural remains, and relationship between these elements and the archaeological deposits, stating the needs for additional expertise. The Phase II report also provides suggestions to use these resources for public education and to disseminate research results to the academic community. Unless otherwise stated, a fully developed research design and data recovery plan will be negotiated by the NHDOT and accepted by the NHDHR as a separate contract after acceptance of the Phase II report by the NHDHR (see Section VII.B). This section of the report will also address the potential for the location of Native American burials, associated or unassociated funerary objects, sacred objects, and items of cultural patrimony as defined by the Native American Graves and Protection and Repatriation Act (25 U.S.C. 3001).

The Advisory Council for Historic Preservation published *A Recommended Approach for Consultation on Recovery of Significant Information from Archeological Sites* in 1999 (6/17) that sets forth principals to guide the treatment of significant sites. Because archaeological and historical resources are nonrenewable, preservation-in-place is usually the preferred alternative when avoidance is possible. The Advisory Council guidance also states that excavation is not the appropriate treatment for all significant sites. Appropriate treatment depends on the research significance and the presence of similar sites in the

area that would provide parallel information. It also may be acceptable to expend research funds on a site possessing parallel or superior data values at another location or to bank the research funds and permit the destruction of the subject site in some circumstances. Such an approach may provide additional research and analysis time and other benefits while allowing the agency to meet its project schedule. A site may also possess value for public interpretation. This value may be enhanced or mitigated by temporary public exhibits and on-site interpretation. In its guidance, the Advisory Council also notes that some sites may possess important associative values to living Native Americans, ethnic groups, and local communities and their descendants and merit preservation-in-place. Such sites have traditional cultural, religious, or symbolic value to these groups and include burials.

When sites are retained intact, they should be treated as non-renewable resources that are managed for futures generations for the values they possess. The Advisory Council states that merely avoiding a site by shifting the project is not considered to be equivalent to site preservation. Protective measures during project construction includes, for example, design of a buffer between the project area and the site, temporary construction fencing, discussion of site location and treatment during pre-construction meetings with contractors and their subcontractors, monitoring site condition during construction, and, depending on the nature of the resource, limiting and monitoring vibration during construction. Later site protection may include special plantings, soil stabilization, and other landscaping efforts and long-term protection through conservation easements or continued ownership by the federal/state agency. For the most part, covering the site with fill and constructing the project over it does not meet this spirit of this stewardship. The site is no longer accessible either to the public or for archaeological research. The site's environmental characteristics are destroyed. Depending on the depth of the deposits, construction matting for temporary impact often does not adequately protect the site because the weigh and motion of the machinery may cause distortion of stratigraphy, and the removal of the matting impacts the soil layers beneath it.

E. Phase III Report

It is the purpose of data recovery to as fully characterize and analyze the data contained within the affected portion of the site as practicable through research questions. Since this investigation mitigates the loss of information at the site through project impacts, the report, in addition to addressing the research questions posed in the research design, describes, analyzes, and interprets all significant classes of recovered data including significant Native American and historic components and aboveground elements. It incorporates, builds upon, and/or summarize relevant data gathered from the first three phases. Phase III data recovery reports are relatively flexible in format and content so that the significant data at the site and related properties can be adequately investigated and presented. However, Phase III reports typically contain some standard components.

Introduction: In addition to the introductory material listed under the report format, clearly present the research goals of the data recovery and the intended and real contributions of the investigations. Indicate in which areas the investigations fell short of its goals and what unanticipated studies occurred.

Method Statement: The approach to and goals of archival research, oral interviews, and comparative research; excavation, recording of aboveground features, setting and other physical data; artifact analyses, special analyses, and the treatment and curation of recovered artifacts and information; and the efforts to convey the information to the public are delineated in the research design for data recovery and presented in the report under the method statement. The discussion of archival research procedures includes the

type of resources, their repositories, and the type of analyses performed on the data to incorporate these data into the study. At sites with regional ties and/or significance, research may lead to repositories outside state boundaries. Delineate field investigations applied to the recovery and recording of buried deposits, soil and carbon sampling, aboveground resources including the examination of visible remains, buildings, structures, and the associated landscapes, and comparative site analyses. Detail the procedures used to study data collected from the site including special analyses and the approach to the analysis of collections from comparable sites. Carefully explain any numerical analyses and state their goals. Describe any measures taken to conserve the artifact collections. Indicate the final disposition of the artifacts, and the date that they are placed in the repository. The discovery of unanticipated finds and their treatment as well as any other changes from the method proposed in the original research design and the reasons for those changes, which are verified with NHDOT and the NHDHR at the time of the investigation, are also presented.

Environmental Context: As in earlier reports, summarize the locational and environmental parameters and physical setting of the site, focusing on those that are significant to the period and cultural group under study and the analysis of the data recovered under the research design. Minimally discuss the following factors: geology, soils, hydrology, physiology/geomorphology, climate, flora, fauna, current setting, and more recent changes in the physical setting, including the environmental context for the period of site occupation.

Cultural Context: This section presents and analyses contextual and site type data that provide background and thematic information and address the significance of the site as well as the site specific research gained from all three phases of study. Fully develop the associated context(s) represented by the site for the time period(s) of occupation and applicable region, incorporating studies of the related site type(s). Related archaeological work and research and associated theoretical work from the region under study and research in other disciplines may facilitate the understanding of the cultural patterns represented by the site. This information is integrated with and commonly complements the data gained from the field investigations and the artifact analyses.

Results of Field Investigations: Mitigating the loss of information, the Phase III report documents all the investigations in Phase III and incorporates information from Phase I and II studies and previous work at the site where relevant. The research design and its questions and any amendments to the design will guide the type of data presented and its method of organization. The organization of the discussion will then depend on the significant unit of study at the site. It may range from horizontal artifact concentration clusters in pre-contact Native American studies to a focus on each buried and aboveground resource with its related features at a historic site. However it is organized, the basic data are present to permit their reanalysis at a future time. Present the field data in a clear, systematic, and thorough fashion, providing summary and interpretive tables.

To clarify the spatial organization of the site, this section of the report includes an overview of the site components and associated artifact and feature clusters and structural remains at the site; the site's stratigraphy; the number and type of units excavated; and a statement of total site size, the area of the site being impacted, and the percentage of the whole and impact areas being examined. Provide an overview of the preserved portions of the site as well.[7] For each analytical unit or component, provide detailed

[7] By Phase III investigations, the area under study for the site's context is dependent on the theme, time period, and site type. It can vary from the immediate locale, for example the adaptation of cultural patterns to specific environmental conditions and can expand to the drainage or a region of the state such as the seacoast or extend across the border to another state, for example for the examination of lithic materials or the settlement of the northern New England frontier in the late

descriptions of its stratigraphy and the vertical and horizontal distribution of features with their associated cultural materials and artifact clusters. Describe related aboveground standing buildings, structures, visible remains and associated landscapes elements. When analyzing the archaeological remains associated with historic sites, it is often helpful to integrate associated data gained from archival research as summary sections as long as the source of the information is clearly provided.

Artifact Analysis: Provide the results of the artifact analyses, systematically characterizing the artifact distribution across the site in each analytical/descriptive unit to clarify the site's cultural associations, functions, and periods of occupation. Present the detailed analyses of selected artifacts that address the research questions. Thus, characterize the artifact content of each feature in the context of its component. Include the results of relevant earlier analyses at the site, and present the data from the floral, fauna, radiocarbon, and chemical analyses. Note any biases created by the circumstances of the investigations that may affect distributional analyses. Report the results of the study of comparative artifact collections, relating this broader study of specific artifact types to the assemblage under investigation. Apply the results of these analyses to the interpretation of the research questions and goals of the investigation as expressed in the research design. Integrate this information into the overall interpretation of the site, refining the characterization of the site type and context. For historical archaeological studies, it is anticipated that the interpretations also draw on and are integrated with data about the specific site history and community and era to which the site/site components belong as well as to its context and site type. It is anticipated that such an approach will in many cases highlight the complementary nature of the multiple data sets. All tables including calculations and associated texts must be checked for accuracy and be correlate with the text and mapping. Place a detailed catalogue of artifacts from all phases of investigation at the site in an appendix.

Comparative Analysis: Comparative research provides strength and breadth to site interpretation and is an integral part of the Phase III study. For example, this study enhances the understanding of the significant similarities and differences within and between data sets, their functional associations, and their distributions across specific environmental and cultural factors. The Phase III report generally includes an examination of such sites within an appropriate region of comparison for the cultural group under study that possess comparable data to the site under study. Depending on the research questions, the comparative thread between the sites may include, for example, a shared site type or function; a body of artifacts including form, detailing, use, material, and manufacturing; common cultural period; and/or parallel building type or function. For historical archaeology, the universe of comparison may often include relevant standing buildings, structures, and landscapes as well as archaeological evidence. Associated archival information is apart of the comparative study. The report should include general information about the comparative sites such as location, environmental setting, size, period of occupation, overall function, characterization of features, and range of artifacts and other data such as faunal or plant materials as well as an analysis of the elements selected for comparison.

Site Interpretation: Integrate and interpret the data presented in the report. Address the research questions, indicating whether the results were anticipated and providing explanations for variations from the expected results. This discussion provides the periods of occupation, presents the different site components, and discusses site functions, placement of the site within its site type and context, and comparison of the site with sites sharing similar characteristics in the region. For historic sites, carefully integrate the information gained from archival research and interviews with data gained from the analysis

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of buried deposits and associated artifacts and aboveground components. The strength of historical archaeology lies in the ability to combine these data in a complementary manner. Presenting them separately, fails to gain access to the full interpretive value of the data sets. Importantly, this integrative process may uncover conflicting evidence, which is noted and may lead to additional questions for future research.

Summary and Recommendations: Summarize the goals of the study and research questions, the recovery effort and analysis, and provide the significant findings and interpretations in light of these questions. Review any section of the research design that could not be addressed and any other modifications in the study and state the reasons for the changes and the associated results. State the contributions of the study to the understanding of the relevant contexts, site types, theoretical issues, and related fields. Present recommendations for further investigations. Note the research potential of any remaining portions of the site. Also note the efforts to disseminate information recovered from the site to the public.

Explain in this section and clearly delineate on a project map the limits of construction. Identify which portions of the site underwent data recovery and no longer contain significant information, which portions were excavated but because of limited project needs in that area continue to contain significant data, and which areas were unaffected and did not undergo data recovery. For the later, indicate what level of investigations occurred outside the area of the data recovery, the level of integrity, and the nature of the site contents. In some instances, a vertical component of the site may not have been impacted by the project and was therefore not subjected to data recovery. Here, section drawings are needed to illustrate this circumstance. In this case, the report must clearly indicate at what level and horizontal extent site remains exist. Any subsequent project in the area may require the completion of data recovery in sensitive areas. Note these site conditions in a revised inventory form.

Illustrations: Include the illustrations listed in the report format above. Include locational maps as indicated and clearly represent the findings in a detailed site plan, plans of the features and artifact concentrations, and sections. Drawings illustrating significant features of artifact types are included. Photographs illustrate the site, its setting, individual features in section and plan, and representative artifacts. If related buildings are incorporated into the study, scale sketches of their plan as well as photographs assist the discussion of building form and function. In addition, include a project map and sections, if needed, following the specifications outlined in the above paragraph.

VI. Curation of Archaeological Materials and Associated Records

The Secretary of the *Interior's Standards for Archeological Documentation* (Documentation Methods/Analysis) state that "...analysis of the collected information is an integral part of the documentation activity, and should be planned in the research design." Further, according to these standards, "The curation of important archaeological specimens and records should be provided for in the development of any archeological program or project." They serve as part of the documentary record.

A. Cataloguing

The process of cataloguing artifacts includes proper cleaning and stabilization of the collection, their identification, assignment of a catalogue number to individual artifacts or groups of related artifacts from the same excavation context, and preparation of a detailed catalogue. Artifacts are numbered following

NHDHR cataloguing system, which is based on artifact provenience. The computerized record is included as an appendix to the report. See Appendix B for the current NHDHR cataloguing system for Native American artifacts. A separate system for the cataloguing of artifacts from historical archaeological sites awaits development. An example based on an Excel computer program developed by Independent Archaeological Consulting and utilized for NHDOT projects is provided in Appendix C. While the NHDHR does not require that this exact format is used, the categories of information should be similar and the system should be equivalent to or better than the systems presented in Appendices b and C.

The detailed artifact catalogue of Native American and historic artifacts in all phases records the artifact catalogue number, provenience identification including unit location and level and strata; count of artifacts or weight; size; material; object identification/type/general and specific functions; technology and techniques of manufacture/material processing; finishing and design elements; color, marks/labeling; origin; and date range of manufacture/filling. The record also notes the artifacts that were discarded in the field. All artifacts processed in the laboratory will be retained until the completion of the study and a plan for permanent curation of significant artifact classes is accepted by the NHDHR. The location of temporary storage and anticipated period of this disposition in a private facility as well as the assemblage's final placement should be stated in all reports. All NHDOT collections are currently deposited at the NHDHR curation facility on Airport Road in Concord.

B. Artifact Ownership

All artifacts recovered from private lands belong to the private property owner. The portion of the collection recovered while the project area is under private ownership is transmitted by NHDOT after the completion of analysis. The disposition is noted in the report and curation documents. For those recovered from federal lands or from lands purchased for federally-funded projects, collections must be cared for, managed, and curated according to guidelines specified in 36 CFR 800, the Secretary of the Interior's Standards and Guidelines for Archeological Documentation, the Archeological Resources Protection Act, and 36 CFR 79. All artifacts recovered under these circumstances for NHDOT projects are deposited with the NHDHR. This approach ensures that the collections remain in and benefit the state.

C. Submissions for Curation at NHDHR

NHDHR has established Curation Guidelines for the curation of collections generated by cultural resource management projects, which are followed for NHDOT projects. They state as follows.

> Regulations implementing Section 106 of the National Historic Preservation Act require that provisions be made for the curation of materials and records from archaeological compliance projects, either as part of the research design or in an agreement document. Material that is the property of the Federal Government must be curated in accordance with 36 CFR 79 standards, and materials from private lands should be curated under the same standards unless the owner of the material requires that it be returned.
>
> The New Hampshire Division of Historical Resources (NHDHR) maintains an archaeological curation and collection management facility at 99 Airport Road in Concord, NH. As determined by our Curation Task Force, this is currently the only facility in the state willing or able to receive new

collections generated by Section 106 compliance. Our [NHDHR] agency is authorized under the Heritage Collections Management Policy, as adopted by the state legislature, to accept collections generated by a function of government (which include Section 106 regulation) when no other more appropriate facility exists. With federal assistance through the Department of Transportation, our (NHDHR) staff and facilities have been upgraded to substantially comply with 36 CFR 79 standards.

Prior to acceptance of collections, consultants should contact Richard Boisvert, State Archaeologist, to discuss delivery and processing of project materials. In addition to reports and inventory forms already filed with the NHDHR, we (NHDHR) will require one complete set of all of the following materials that were used or produced by the project.

1. Field and laboratory documentation such as field notes, logs, recording forms, and analysis sheets that contain any significant information about the collection not included in the reports or inventory forms.

2. Field maps and any other maps containing information not included in the reports or inventory forms.

3. Photographic negatives, contact prints, slides and aerial photographs with any overlays used.

4. Computer data and analysis command files supplied in floppy disk.

5. Artifact catalogue sheets, final tabulations, and inventories that provide supporting documentation for project reports.

6. Any published or unpublished reports containing archaeological data not included in the final reports or inventory forms.

7. All documents relevant to the ownership of the collections, such as transfers of title for artifacts recovered on private land (this should be written transfer of title from the landowner to the State of New Hampshire). Originals of these records should be submitted whenever possible; when originals cannot be submitted, all copies must be completely legible.

Prior to disposition with the NHDHR, field materials must be cleaned, sorted by analytical or functional groupings with provenience, catalogued, and properly packaged for being added to the permanently stored archaeological collections. In cataloguing, objects should be numbered sequentially and organized in a logical manner by object type or material. Diagnostic objects should be marked with the site number and catalogue number. Where groups or lots of small objects of a similar type (such as lithic flakes) are recovered from a single provenience (unit level for example), they may be placed in a small bag with the catalogue number recorded on the data block that is placed in the bag but not written on the objects because of the small size.

For packaging, we (NHDHR) require zip-lock polyethylene bags of an appropriate size and thickness. A thickness of 2 to 4 mil is adequate for most materials. Bags that have white blocks printed on one side for labeling are preferred. The bags are to be labeled on the outside with indelible ink with the provenience data from the original field bags, and this information is also to be recorded on data

block cards which are printed on archival quality material such as a acid free paper, card stock or tyvek.™. These data block cards are to be placed inside each bag with the artifacts.

The zip-lock bags are to be placed in archival quality record storage boxes that meet the following specifications - heavy weight, made from acid free unbuffered 200 lb. corrugated cardboard with a ph. of 7.2 and dimensions of 10 X 15 X 12 inches (in no case should buffered boxes be substituted.) The bags of artifacts are to be segregated by material type to prevent damage, and fragile items need to be protected from damage by custom foam mounts or bubble pack. For economy of space, small artifact collections from several sites may be housed in one cardboard box.

Consultants are not required to add accession numbers to labels on artifacts. The NHDHR reserves the right for any future disposal of these collections in accordance with prevailing professional standards and to grant access to the materials and records for the purposes of study and educational programs.

Contact Richard Boisvert, telephone 603-271-6433, for any additional information you need and to arrange for delivery.

VII. Submittal Documents

A. Scope of Work

The NHDOT usually contracts for each project in one of three ways, resulting in three different formats for scopes of work. (1) For small transportation projects whose environmental studies are conducted and prepared in-house, the archaeological investigations for Phases IA through II are contracted under the statewide Service Agreement. Scopes of work under the Service Agreement include the following information: a brief description of the project focusing on those elements that may affect archaeological resources, inclusion of project numbers, a description of the study area or APE; a description of the research, field investigations, data analyses, and report and map preparation; scheduling of investigation, end-of-field letter, and completion of report; identification of the principal investigator and supervising archaeologist; and costs of the investigation presented by work tasks, which is further broken-down by personnel category for each task with hours, a per hour wage rate, and the amount. Include expenses that are not covered by the Service Agreement. (2) For large projects, design work and environmental studies are contracted with a principal engineering firm that then completes in-house or under subcontract the environmental work including the cultural resources studies. The archaeological contractor forms part of the team working with the principal when submitting the original proposal to secure the project and then submits cost proposal as part of the principal's package to perform the work. Although the venue is somewhat different, the content of the information in the scope submitted by the archaeological contractor includes the information listed under item 1. (3) Unless their cost is relatively low, Phase III data recovery studies are completed under a separate, competitive contract between the archaeological firm and the NHDOT. The services provided are based on the research design prepared for the project. The research design is contracted separately through the Service Agreement or through the principal engineering firm. It constitutes the core of the bid document for Phase III contracts.

B. Research Design for Phase III Data Recovery

The elements of the research design are delimited as follows.

1.Provide an explanation for the overall need of the project. Generally, NHDOT is requesting the research to mitigate the adverse effects of a project on archaeological resources. Indicate the project, its effects, the portions of the site being impacted both horizontally and vertically, and any portions being preserved for future research.

2.Provide a summary of previous research including the site location, relevant environmental contexts, previous site research with references to reports and related collections, and discussion of Phase I and Phase II site findings to date. Identify the site type, age, cultural associations, and site structure including the distribution and density of archaeological data horizontally and vertically. Characterize the artifact content and features within the framework of this structure, and discuss aboveground elements if present.

3. Provide a brief statement of the site significance. In it, discuss the associated cultural contexts and site types with references to and discussion of identified comparable sites. For historical archaeological sites, briefly summarize sufficient historical background to provide an understanding of the significance of the archaeological and architectural features. Indicate how site comparison would contribute to the understanding of the subject site and research questions.

4. Based on the data collected to date, develop several primary research questions that will enhance and extend the understanding of the role the subject site and similar sites in the contextual framework presented. The scope of the research design and its questions should parallel the level of significance of the site and the data which may be potentially adversely affected. The research questions must reflect the areas of property significance.

5. Identify the data requirements for each research question and the available data at the site and comparable sites to address the question. For historic sites, include research needs and for historic and Native American sites specify the comparative research needs. Provide justification for omitting investigations of any affected sections of the site, for example redundant information, disturbance, etc.

6. Carefully describe the methods by which the data to address each research question would be obtained in the field. Provide the method statements as discrete tasks that become a bid item. Make certain that the sampling strategy effectively retrieves the required data, takes into account the available time for field research and analysis, and is commensurate with the significance of the site. Clearly tie the explanation of the method and its sampling strategy to the questions being addressed.

7. Provide approaches to the analyses of the data identified for retrieval in light of the research questions and the range of artifacts present at the site and specify the plan for the curation of the artifact collection. Unanticipated Native American finds regulated by NAGPRA will undergo repatriation in accordance with those regulations. It is the duty of the federal agency rather than the contractor to ensure that concerns about the recovery of significant information have been addressed with Native American communities who may attach religious and cultural significance to the affected property.

8. Include a plan for public education about the site and dissemination of data to peers. Its completion is tied to the execution of the project under the Phase III contract.

Research designs are reviewed by NHDOT, NHDHR, and FHWA. The research design is incorporated into a Memorandum of Agreement (MOA) or programmatic agreement per Advisory Council Regulations 36 CFR 800.6(b)(iv). The MOA's are prepared by NHDOT for FHWA for those projects having an adverse effects on historical resources. This agency sends the project proposal and environmental statement without the MOA to the Advisory Council so that it may determine if it wishes to be a consulting party to the process. Whether or not the Council does, a copy of executed the MOA is forwarded to the Advisory Council. It is the responsibility of the federal agency to execute all aspects of the approved research design as part of the MOA and to inform involved parties of the progress toward its completion. The agency and NHDOT ensure that the final report resulting from data recovery is provided to NHDHR for review and comment and that it meets professional standards including the Department of the Interior's Format Standards for Final Reports of Data Recovery Programs (42 FR 5377-79).

C. Project Notification (Authorization)

For those projects completed under the Service Agreement, NHDOT sends a letter of authorization that briefly summarizes the project and the scope of the investigation being authorized, the type and general content of the submittals and their dates of completion, and notes the status of property ownership and owner notification. The statement of work in the authorization should summarize the consultant's understanding of the goals of the current investigation. Requested revisions will be completed within two weeks of receipt by the Principal Investigator unless different arrangements are made. When it does not, notify the Cultural Resources Manager of NHDOT. For archaeological contracts received through a prime consulting engineering firm, it is the firm's responsibility to notify the archaeological subconsultant of the receipt of the authorization and the terms of the agreement including the final scope of work. NHDOT completes an individual contract with archaeological firms for Phase III data recoveries as noted above under (Section VII.B).

D. End-of-Field Letter

The NHDOT usually requests an end-of-field letter to assist in project planning. This submission to NHDOT by the archaeological firm summarizes the objectives of the field investigations, approaches to testing, findings, preliminary interpretation of the data, and recommendations for additional efforts if needed. Letters for historic sites may need to include some basic historical data. An essential part of this submission is a set of draft maps. Depending on the level of survey, include the following data on the maps: the project and survey limits, areas of sensitivity for Phase IA and, for later phase, the location and type of testing, locations of archaeologically identified deposits, and the placement of related aboveground remains including building, structural, and landscape features. This map need not be finalized. It assists context sensitive design in the vicinity of the sensitive area(s). The full report then follows.

E. NHDHR Archaeological Inventory Form

All newly discovered sites are documented on a NHDHR archaeological inventory form. If investigations are at a Phase IA or IB level, the form is usually completed at the minimum level. With further testing in Phase II, the form is revised to complete all entries, including the statement of significance. When a site

is visible at the edge of the project area, complete a minimal inventory form and note its presence in the report and on design maps. This information is important for avoidance in design and later refinements, for example placement of drainage, equipment storage, or slope impacts that may not be identified until the final design process. If the site cannot be avoided, then necessary phased investigations will occur. If sites are relocated, revise the form at the appropriate level of the study to reflect its current status. Following the submittal of the inventory form, the NHDHR will provide a site number for new sites, which are referenced in the report. Send a copy of the completed site form with site number to NHDOT.

F. Determination of Eligibility (DOE)

Phase II investigations are conducted to establish the National Register eligibility of a subject site. The formal determination is contained in the statement of significance section of the resulting Phase II report (see Reporting Standards, Phase II, Statement of Significance). In addition to placing it in the report, prepare the DOE as a stand alone document since an unbound copy is also submitted to NHDOT. This statement includes a summary of the following: an introductory statement indicating the physical context of the site and its location; horizontal extent, site boundaries, and boundary justification; previous investigations at the site; a discussion of cultural association, time period, functions, and a summary of the context statement; a summary description of the identified site structure including characterization of its strata, of the features and their contents, of the artifact clustering, and of the distribution of artifact across the site; a summary of the artifact analysis; the resulting preliminary interpretation of the site; a discussion of comparable sites in the region to support the significance of the data preserved in the subject site; and a statement of significance. This statement usually discusses the site's significance under criterion D and includes the following: research questions that can be addressed through investigation of the site; the ways in which this information contributes to a broader understanding of the associated context and site type(s) in the region; a statement of site integrity; an analysis of the site's relationship to known sites in the region of the same cultural period; a discussion of the types of investigations necessary to retrieve and analyze the information; and a comparison of its research potential with other similar sites.

G. Environmental Impact Statements: Draft and Final

The sequencing of archaeological studies to coincide with other studies performed for environmental impact statements usually follows a standard schedule. However, this scheduling of investigations can vary depending on the size of the APE and complexity of the overall environmental study. The level of study at each stage of the EIS preparation and the submittals are outlined below.

Phase 1: Data Collection/Alternatives Screening: Conduct a literature search and limited contextual studies, document the physical context, and complete pedestrian surveys to define archaeologically sensitive areas (Phase IA research). For projects with multiple alternatives and a large APE, the physical investigations may occur in two parts. To gain familiarity with the landscape, a windshield survey and selected pedestrian surveys at highly sensitive areas and known sites may be completed at the beginning of a project. An initial Phase IA report is then submitted with preliminary constraints mapping. Complete a minimal inventory form for newly located sites and include forms for previously identified sites, updating them if conditions have altered. Produce an accompanying table identifying and describing each sensitivity area and a second table indicating which sites and sensitivity areas impacted by each alterative. Although the architectural historian computes acreage for properties adversely affected by the alternative, this information is not known for archaeological sites at the Phase IA level.

For the rationale report, prepare a brief description of the regulations that require cultural resources studies, a method statement, summary of findings, and recommendations for Phase IB studies. These materials will be reviewed by NHDOT and NHDHR. Participate in meeting(s) with the agency and NHDHR to review these findings and work scopes as design progresses and discuss with the agency constraints to project alternatives. Integrate comments from report reviews and these meetings into rationale report. Such communication may permit avoidance of known sites early in the preliminary design phase.

Phase 2: Phase IA Report: Information gained from the initial Phase I investigations is rarely adequate to accurately determine archaeological sensitivity. If alternatives and the APE are narrowed, conduct a pedestrian survey of the entire project area. Depending on the size of the project area, soil coring and a limited number of 50 cm X 50 cm test units to define areas of soil disturbance should occur at this time. Revise the initial Phase IA report accordingly, discussing the coverage of the area by pedestrian survey. Most report sections may require revision including the introduction, method, cultural context if new sites are found that do not relate to the current context, results of field investigations, and summary and recommendations. Revise the constraints mapping, locating known sites, identifying the method of survey, i.e. coverage by pedestrian survey and location of test units and soil cores, and indicating sensitive areas for each alternative. Complete additional minimal inventory form for newly located sites. Update the tables identifying and describing each sensitivity area and indicating which sites and sensitivity areas impacted by each alterative. Acres of impact cannot be defined at this level.

Prepare and send three copies of the draft Phase IA report to the principal engineering firm who provides two copies for review to NHDOT who in turn transmits a copy to NHDHR. Make corrections in final Phase IA report after receipt of comments and submit the final drafts to the principal who transmits them to NHDOT. It is anticipated that revisions are made within several weeks of their receipt. When transmitting the revised copies to the principle engineering firm, notify NHDOT of the transmittal. The number of final copies includes one each for principal, NHDOT, NHDHR, and the federal agencies and other state agency involved in the project. Also include two copies for Native American consultation.

Phase 3: Draft EIS: The archaeologist should prepare documents for DEIS. A 4(f) statement concerning archaeological resources cannot be made in the DEIS prepared for FHWA. The significance of archaeological resources is not established at this phase in the study except, perhaps, for previously identified archaeological resources. Unlike Section 106, the mitigation of 4(f) impacts to archaeological sites through data recovery is not considered an adverse impact, requiring the preparation of a 4(f) statement. State this fact in the document, provide a statement about the agency's commitment to completing archaeological investigations, and include an outline of the remaining phases of archaeological investigation. Indicate that archaeological resources may exist that possess such research significance that they should be preserved for future research or that gain significance through their associative value. Such sites should not be mitigated by data recovery but avoided and protected if feasible and prudent. For example, burial sites or sites with extensive, intact midden deposits are often among such resources. If such sites are identified when the draft is prepared, their impact would produce a 4(f). Meeting(s) with NHDOT may be necessary to review drafts of the DEIS. A typical outline for the archaeological sections of the DEIS which is also suitable for the final EIS follows:

Affected Environment (usually Chapter 3)
    Cultural Resources
        Introduction: Definition of the APE, time frame of the study, types of investigations

- Completed to date
- Regulatory Overview
  - Federal Requirements (include 36 CFR 800 statement about consulting parties)
  - State Requirements
- Evaluation of Property Significance: The National Register Criteria, Elements of Integrity, Area of Significance, and Historic Contexts/Site Types
- Archaeological Resources
  - Definitions
  - Methods of Study
  - Native American Archaeological Resources
    - Brief Contexts (specific to the project area and its vicinity for large EIS's)
    - Identified Properties and Associated Contexts
  - Historical Archaeological Resources
    - Brief Relevant Contexts based on Known Resources (specific to project area and its vicinity for large EIS's)
    - Identified Properties and their Associated Contexts
  - Conclusions: Discussion of Future Study Needs

Environmental Consequences (Chapter 4)

- Archaeological Resources
  - Impact Method
  - Examination of Impacts to Each Alternative and No-Build
  - Summary: Further Investigations and Potential Mitigation (notation about 4(f))

Section 4(f) Evaluation (Transportation Studies) (Chapter 5)

Unless archaeological investigations are completed through the Phase II significance determination prior to the Draft or Final EIS and a determination of eligibility is reached, archaeological resources are not addressed under this heading. Under most circumstances, include the statement that 4(f) impacts cannot be determined until the completion of Phase II.

Phase 4: Public Meetings: During the NEPA process, the agency is required to hold public meetings to present the project. These meetings may but often do not involve the cultural resource consultants. After acceptance of the DEIS by the agency, the draft is sent for comment to federal and state agencies that have a review role and/or general interest in the project, including local governments, consulting parties, and other concerned groups.

Phase 5: Intensive Investigations: Prior to the completion of the final EIS, the archaeological consultant may be requested to complete the walkover survey of the project area for large projects with a large APE or an intensive investigation of the preferred alternative, particularly if project scheduling is tight or project alternatives occupy approximately the same corridor. The method of investigation follows the procedures for a full Phase IA study as noted above or a Phase IB study respectively. If there is a considerable lag between the draft and final EIS, the contracting archaeologist may need to examine the identified sites and archaeologically sensitive areas to determine continued surface integrity and verify the proposed approach to further survey. At the Phase IB level, conduct subsurface testing at 8-meter intervals in sensitive areas that contain either the potential for Native American or historical archaeological sites. Test around positive finds with 4 m arrays to define site extent (follow IV.

Standards for Archaeological Field Investigations, B. Phase IB). Depending on the level of data extant for known sites, some testing at the Phase IB level may be necessary to better understand their extent, composition, and cultural affiliation. Complete or revise minimum archaeological inventory forms for each site. In the Phase IB report, provide and support recommendations concerning further investigations in Phase II. Submit the same number of draft and final copies that were provided for the Phase IA study noted above under Phase 2 of the EIS study.

Phase 6: Final EIS: If intensive testing is performed between the draft and final EIS, revise all chapters of the DEIS to reflect new information gathered for the preferred alternative including recommendations for additional studies in Phase II. The 4(f) chapter for transportation projects may be completed only if site significance is determined, which usually has not occurred prior to the FEIS.

VIII. Contingency Situations

A. Unanticipated Human Remains

Phased investigations are in part intended to determine the likelihood of unmarked human burials. Please see section IV.B for a brief discussion about the treatment of established cemeteries. Because of their size, burials are difficult to locate even when the area is tested at eight-meter intervals in Phase IB. If burials are or are believed to be present, the phased investigations permits careful consideration of the issue including sensitive scopes of work that investigate that likelihood, examination of project designs that avoid such areas, and discussions with the associated community and descendants.

The location of unanticipated human remains during construction is, as noted in section I.B, Legislative Mandate, treated under state law Title XIX, Chapter 227-c: Section 227:8a-g. As stated in this section, for NHDOT projects, cease work and immediate notify the NHDOT Cultural Resources Manager and the State Archaeologist at NHDHR so that the proper steps may be taken by these two agencies to determine proper procedures and identify the appropriate notification process. Cover and protect the burial. Investigations will not continue until verbal notification is provided by the NHDOT. This procedure must be followed. FHWA with NHDOT and NHDHR is responsible for notifying descendants or specific groups, not the investigating archaeologist. When the burial is Native American whether or not the group is federally recognized, RSA 227-C:8–d enjoins the State Archaeologist to immediately notify the leaders, officials, or spokesperson to determine the appropriate treatment of the burial (see also RSA 227-C:8-g). When the burial is not Native American, the State Archaeologist and often the NHDOT Bureau of Right of Way seek identification of descendants to determine wishes for disposition of the burial (see also RSA 227-C:8-e and 8-g). If skeletal analysis is deemed appropriate, this study may only be undertaken by a qualified analyst in consultation with the NHDHR and NHDOT (see RSA 227-C:8-f).

B. Unanticipated Archaeological Features and Artifacts

Regulations 36 CFR 800.13 (b) state that if historic properties are located after the conclusion of the Section 106 process as “post review discoveries,” for example those arising during construction, the federal agency official will make every reasonable effort to avoid, minimize, or mitigate the effect of the project on the properties. In such situations in which the NHDOT must recover archaeological remains in a short time period and they do not involve human remains, the identified features and artifact

concentrations will be recovered following the guideline for Phase III excavations as closely as possible. Construction monitoring of the affected area may follow this recovery if the type of archaeological deposit, landscape, vegetation, and project allow this approach to be effective.

C. Premature Project Termination

If the project is curtailed or shifted so that the area of concern is no longer affected, further field investigations are terminated after excavation units are completed and open areas of the site are backfilled. Placement of a permanent datum and careful mapping permits the site to be relocated and the grid to be recovered if future investigations at the site become necessary. The recovered materials are catalogued and analyzed to the degree necessary to permit a preliminary interpretation. Perishable samples are analyzed. A report for the appropriate phase under investigation documents the study and include a discussion of the status of the investigations when terminated, the current interpretations, and recommendations for the direction of future investigations.

D. Native American Coordination

For federally funded or permitted projects, federal agencies, such as the Federal Highway Administration and the Army Corps of Engineers, are responsible for the coordination of projects and related archaeological investigations with Native American groups. In most instances, the NHDOT acts as their agent and the NHDHR in its role as SHPO provides guidance and intergovernmental coordination. In state projects and for burials, this office provides the primary guidance. The NHDOT Bureau of Right-of-Way has established procedures for treatment of Euro-American burials. The principal investigator conducting the archaeological investigations for a project will not initiate coordination with Native American groups.

E. Confidential Treatment of Site Location

The understanding of the locational attributes of sites in the project area, of adjacent sites, and of sites associated by context is essential to the understanding of archaeological sensitivity in the project area and site significance. For this reason, locational information is included in report for each phased investigation. To protect this resource, each report will have limited distribution to the affected state and federal agencies, principal engineering firms contracting with the investigating archaeologist, and consulting Native American communities (see RSA 227-C:11). Small scale mapping of the location of the site is included on separate pages or separately bound volumes. When information about archaeological sites is provided to the public, the specific locational information about the site is deleted or depicted on small-scale maps to indicate a general location.

F. Weather-Related Issues

Given the fragile nature of archaeological deposits and the need to accurately record the characteristics of soils containing cultural material, archaeological excavation will not occur when soils are frozen. If intensive Phase IB and II investigations follow a concluded Phase IA assessment that examines the ground surface closely, then they may occur in areas covered with light snow prior to freezing. However, when the entire ground surface is under snow cover, it is not possible to conduct Phase IA assessments

relying on visual reconnaissance. While Phase II excavations may occur in areas protected by shelter in wet weather, significant periods of rain can also limit the testing of extensive areas. Under frozen or wet conditions it is not possible to maintain or read soil profiles. Such inappropriate conditions can alter the interpretation of archaeological deposits.

IX. Meetings

During the archaeological investigations, attendance at meetings with consulting engineers, if they are involved, and at Cultural Resources Meetings attended by NHDHR, FHWA, and the Army Corps and other meetings at NHDOT may be necessary, particularly for the larger projects completed under contract through an engineering firm or a Phase III investigation. Many of the smaller investigations completed under the Service Agreement do not require attendance at meeting. Meetings at NHDOT in the initial phases of investigation and during the preliminary design of the project occur to identify sensitive areas and known sites. They are often scheduled prior to report submittals to assist "context sensitive design" efforts, here usually site avoidance. After the submittal of the Phase IA report during the remainder of the phased investigations, additional meetings may occur to discuss and review investigation strategies and results with NHDOT and NHDHR.

X. Public Education

If the site contains significant data, Section 106 of the National Historic Preservation Act specifies that the sponsoring agency informs the public of its findings. This information often results from some Phase II and Phase III investigations. The degree of public outreach and the audience depends on the type and significance of the information resulting from the investigation. If sensitive locational information remains, this circumstance may limit on-site interpretation and the precision of locational and graphic information presented to the public. Typically, the principal investigator provides for appropriate dissemination of the results to the public and professional audiences in proposals for investigations, and it becomes part of the contract agreement. For Phase III investigations, this obligation for federal agencies will be explicitly stated in the Memorandum of Agreement or Programmatic Agreement. Outreach to the general public may be completed through on site visits and interpretation if the public safety is secured, landowner permission is provided, and the location of the site no longer contains sensitive information; lectures at local and/or regional institutions; exhibits and interpretative signs during and after the final investigation; and brochures that may also guide the reader to related resources in the area. Dissemination of information to professional audience should also occur in the form of, for example, lectures, publications, and on-site visits during statewide and regional meetings.

APPENDIX A

Form for Bibliography Database

Complete the following form with all report submissions (see Section V.A).

APPENDIX B

Guidelines for the Cataloguing of Native American Cultural Material

The enclosed guidelines include a copy of the artifact cataloguing system prepare by Lynn Clark for NHDHR and an updated list of codes (see Section IV.A).

APPENDIX C

Guidelines for the Cataloguing of Historical Cultural Material

The enclosed example of a catalogue entry form and sample artifact catalog database for historical archaeological deposits was prepared for an Excel computer program by Independent Archaeological Consulting. While the potential entries are not comprehensive, they include the elements most commonly utilized in New Hampshire. These three pages are followed by a portion of a completed catalog for site 27-Rk-324 in Newfields (see Section IV.A).

APPENDIX D

Historic Contexts Prepared by NHDHR

NHDHR has developed the following list of historic contexts for the state. It maintains files containing contextual data gathered through reports of investigations for archaeological and architectural investigations and other sources. The NHDHR inventory databases also assists in finding related studies completed in New Hampshire. Note that it is not the intent of this list to simply cite the context in the report of investigations, but to use it as a means to develop the context relevant to the phase of study, theme, period, and location under investigation.