

Archaeology Guidelines

Ohio Historic Preservation Office

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Ohio Historical Society
Columbus, Ohio
1994

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Franco Ruffini

Deputy State Historic Preservation Officer

Introduction

Purpose

These guidelines contain the standards and specifications by which the Ohio Historic Preservation Office reviews, evaluates, and comments on archaeological survey methods, results, recommendations, and reports, including, but not limited to, Section 106 of the National Historic Preservation Act, the Surface Mining Control and Reclamation Act (SMCRA), Sections 149.53 and 149.54 of the Ohio Revised Code, and Historic Preservation Fund subgrants. They supersede all other letters, memoranda, guidelines, standards, and specifications previously issued by the Ohio Historic Preservation Office on these matters. Generally, they are intended to ensure that the work and information generated from archaeological investigations are completed in accordance with the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* and the current state of the discipline.

The guidelines contained in this document presume that the archaeologist will prepare a full research design for locating and evaluating archaeological resources using the criteria for eligibility for listing in the National Register of Historic Places, the State Registry of Archaeological Landmarks, and the State Registry of Historic Landmarks. This research design should develop a geographic/temporal context based on the current literature, established historic contexts, the archaeologist's own research, or a combination of the above. This research design must be able to provide for the location of all significant archaeological sites (as defined by their eligibility for listing in the State Registries or the National Register).

Included as an Appendix are guidelines to be used in lieu of a research design prepared for a specific undertaking. If the archaeologist does not develop a research design, use of the guidelines in the appendix for a survey project should result in the identification of properties which would be potentially significant. Inclusion of these guidelines should not be seen as recommending their use as standard practice. They represent maximum effort for potentially

minimal results. The guiding principle for archaeology in Ohio is the development of a comprehensive research program resulting in a product meeting professional standards. The guidelines in the appendix are intended to be used only when the archaeologist cannot provide data that would conclusively warrant less or more stringent directions and their use will not necessarily provide the best product.

These guidelines are intended to encourage innovation and experimentation in the development and implementation of a research design. As time and staffing levels permit, it is recommended that the research designs be approved in draft by the Ohio Historic Preservation Office prior to implementation. This may reduce the need for revisions involving requests for further work. The Ohio Historic Preservation Office staff may request revisions in the research design that require more field work or that may require less. It is a goal of the Ohio Historic Preservation Office to keep cultural resource surveys cost effective and this pre-approval process should be useful toward this end, particularly in situations where the archaeologist has questions regarding research design and/or methodology.

The nature of archaeological resources is such that expectations are generally modified by experience gained from fieldwork and analyses. It also should be recognized that archaeology, as a scientific discipline, is always changing, and that there is an inherent uncertainty involved in archaeological investigations. Continued coordination with the Ohio Historic Preservation Office is required as the very nature of archaeology precludes rigid mechanical approaches to the identification, evaluation, or protection of archaeological resources.

Philosophy of Documenting Archaeological Resources

Many historic properties are archaeological in nature. The Ohio Historic Preservation Office has adapted the definition of an archaeological resource from 36 CFR Part 79 (see page 42).

The Ohio Historic Preservation Office requires the use of the Ohio Archaeological Inventory (OAI) form or equivalent form acceptable to the Ohio Historic Preservation Office to record archaeological resources. The OAI form is used to record the material remains (artifacts and features) and to document the places (sites) in which they are found to the extent that the relationships among these elements can be recognized and described. The OAI form is used to

document such resources in a manner that enables comparison, both written and electronic, of the data contained therein and between archaeological resources. There are several ways to delineate the resources. The method chosen must be justified by the investigator in the research design.

Isolated finds may be treated differently than sites. First, it must be clearly demonstrated in the project report that such occurrences are, in fact, isolated finds. Once established, they may be recorded on an isolated find form (available from the Ohio Historic Preservation Office) with information to include the nature of the isolated find and its location. Multiple isolated finds from a single project may be recorded on a single form. The fact that an archaeological investigation resulted in the recovery of only a few flakes or a single tool does not preclude the necessity of completing an OAI form. With the exception of documented isolated finds, if an archaeological resource exists, it must be recorded on an OAI form.

Resources such as historic cemeteries, buildings, and other structures, including their ruins, may require the preparation of OAI forms. The determining factor is whether or not the resources contain information of archaeological interest (see page 43).

Other particular resources may require the preparation of Ohio Historic Inventory (OHI) forms (see Ohio Historic Inventory Manual) or Ohio Historic Bridge Inventory (OHBI) forms. These forms may be useful in documenting destroyed or damaged buildings, or structures of architectural and/or historic interest when there is sufficient documentation (i.e., photographs, architectural drawings, insurance maps, etc.) to complete the minimum level of information requested on such forms. The level, value, or significance of that information is not at issue until the National Register of Historic Places Criteria of Evaluation are applied, which is done after the resources are recognized and recorded.

Human Remains and Associated Burial Objects

Human remains and associated burial objects may be encountered during investigations that fall under the review authority of the Ohio Historic Preservation Office. Depending on the circumstances, i.e., location on federal, state, other type of public land, or private property and/or the policies of the agency with jurisdiction, various laws and regulations may be applicable, e.g., the Native American Graves Protection and Repatriation Act (NAGPRA). Early

consultation with the Ohio Historic Preservation Office and other relevant groups and agencies is recommended to ensure full compliance with appropriate regulations.

In general, adherence to the following principles is recommended:

- The preferred treatment for human remains and associated burial objects is in situ preservation.
- Human remains and associated burial objects should always be treated respectfully.
- When necessary, human remains and associated burial objects should be disinterred completely and in accordance with proper archaeological methods.
- Human remains and associated burial objects may have scientific, cultural, and/or religious values which should be considered in their treatment. Their treatment should be considered on a case-by-case basis with all potential treatments (avoidance, disinterment, study, curation, and/or reburial) recognized as options.
- Consultation with specific descendants and/or the appropriate, culturally affiliated groups regarding the treatment of human remains and associated burial objects should be undertaken.

It should be noted that the recovery and disposition of certain classes of artifacts i.e., funerary objects, sacred objects, and items of cultural patrimony, are a subject to regulation pursuant to NAGPRA under certain circumstances.

Section 106 Review

The National Historic Preservation Act (NHPA) of 1966, as amended, was enacted because of public concern that many of our nation's historic properties were not receiving adequate attention when the federal government sponsored public works projects. In the early 1960s, federal historic preservation law applied only to a handful of nationally significant historic properties, and Congress recognized that new historic preservation legislation was needed protect the many other historic properties that were being affected by federal activities.

Section 106 of the NHPA requires that every federal agency take into account how each of its undertakings affects historic properties. An agency must also afford the Advisory Council on Historic Preservation (ACHP) an opportunity to comment on the agency's project. Federal regulations specify the process by which an agency affords the ACHP an opportunity to comment on the agency's proposed undertaking. The ACHP's regulations, "Protection of Historic Properties," appear in the *U.S. Code of Federal Regulations* as 36 CFR Part 800. The federal agency involved in the proposed undertaking is responsible for initiating and completing the Section 106 review process, and it works with the State Historic Preservation Office and the ACHP to do so. In Ohio, the State Historic Preservation Officer is the Chief of the Historic Preservation Division (also known as the Ohio Historic Preservation Office) of the Ohio Historical Society.

A federal undertaking can be any of a broad range of projects, activities, and programs including construction, rehabilitation and repair projects, demolition, licensing, permitting, loaning, loan guarantee, grants, and federal property transfer. Whenever one of these activities may have an effect on an historic property, the sponsoring agency is obligated to seek the ACHP's comments. For purposes of Section 106, any property listed in or eligible for listing in the National Register of Historic Places (NRHP) is considered historic.

The Ohio Historic Preservation Office coordinates state participation in the implementation of the NHPA and is a key participant in the Section 106 review process. The role of the Ohio Historic Preservation Office is to consult with and assist the federal agency in identifying historic properties, assessing effects upon them, and considering alternatives to avoid or mitigate those effects. The Ohio Historic Preservation Office reflects the interests of the state and its citizens in the preservation of their heritage and helps the sponsoring agency identify those persons interested in a federal undertaking and its effects upon historic properties. For further information on the Section 106 review process, please consult *The National Historic Preservation Act: Section 106 Regulations and Information*, available from the Ohio Historic Preservation Office.

Section One

The Review Process

A. The Review Process

The Ohio Historic Preservation Office has divided the review process into two parallel tracks: review for effect on historic buildings, structures, and objects, and review for effect on prehistoric and historic archaeological resources. The remainder of these guidelines describes the procedures involved in the archaeological review.

If undertaken during an archaeological survey, the survey and inventory of historic, architectural, engineering, and cultural resources should be done in accordance with applicable standards, such as the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* and *How to Complete the Ohio Historic Inventory*.

The first step in the review process is the submission of project documentation to the Ohio Historic Preservation Office. Complete documentation includes:

- Cover letter.
- Name of agency (Federal/State) or organization and type of assistance.
The name of the project owner or his architect/engineer where applicable.
- Project Location: the location and boundaries of the project area should be indicated on a U.S. Geological Survey (USGS) 7.5 minute topographic map or a map of sufficient scale that will allow the Ohio Historic Preservation Office staff to locate the project boundaries on a USGS 7.5 minute map. In addition, street address and street maps are required for projects in urban areas.
- Project Description: the nature and extent of the undertaking; size of project (in acres); the extent and nature of ground disturbance anticipated; the previous and current land use; the known historic and archaeological resources within the project area and its vicinity, with

references for information given. This is a precursor to, not a substitute for, an archaeological assessment.

When complete documentation has been received, the archaeological review proceeds with the archival examination of the project area to determine if known archaeological sites are recorded within or near the project area. Archaeological resources are recorded in the OAI files maintained by the Ohio Historic Preservation Office at the Ohio Historical Center in Columbus. The files are the official repository of archaeological resource information and currently contain information on over 20,000 archaeological resources. Similar files for more than 65,000 historic buildings, structures, and objects are maintained by the Ohio Historic Preservation Office in the OHI files. Comparison of project maps with map information in the OAI and OHI files enables the Ohio Historic Preservation Office to determine the presence or absence of recorded sites within the project area. Other sources consulted may include the National Register files, the Determination of Eligibility (DOE) files, the Historic American Buildings Survey, and the Historic American Engineering Record, among others.

The absence of known sites in or near the project area does not imply the real absence of sites. In order to evaluate the potential effect of an action on archaeological resources, the possibility of significant unknown sites being located within the project area must be considered. The review includes a consideration of patterns of known site distribution and models of prehistoric and historic settlement derived from previous archaeological surveys, settlement pattern studies, and local or regional histories, among other types of scholarly investigation.

B. Ohio Historic Preservation Office Response

Other factors considered in the review process include previous survey or excavation within or near the project area and the nature and extent of previous land use and ground disturbance that would affect the preservation of archaeological sites. Agricultural use alone does not eliminate the need for further consideration. Areas which have been extensively graded or altered (through contemporary surface mining, construction, etc.) may sometimes be eliminated from further consideration. Note, however, that historic mining areas and other types of historic land disturbances may have gained significance in their own right.

The review of project documentation usually results in one of four responses defining the archaeological sensitivity of the area by the Ohio Historic Preservation Office to the agency or applicant:

- No recorded sites occur within the project area and none are expected.
- No recorded sites exist in the project area but the area has not been adequately surveyed and there is a reasonable probability that sites exist. The reasonable probability is determined by a consideration of the factors outlined above.
- Recorded sites occur within the project area and other unrecorded sites may exist.
- Recorded sites occur within the project area and it is unlikely that additional sites exist.

In addition to evaluating the archaeological sensitivity and the presence or absence of previously recorded resources within the project area, the Ohio Historic Preservation Office will render an opinion on the necessity of performing an archaeological survey. The phases of an archaeological survey are discussed below.

If sufficient information is available on both the presence of archaeological resources and the nature and extent of the project, the Ohio Historic Preservation Office will render an opinion on the probable effect of the project on archaeological resources in the project area. It is possible for resources to exist within the project area, but for the project to be designed in such a way that there would be No Effect or No Adverse Effect on the resources. Responses from the Ohio Historic Preservation Office to the agency involved will include both information on the presence or likelihood of sites, and an opinion on potential effect.

C. Required Action

If, in the opinion of the Ohio Historic Preservation Office, there are no sites and none are expected or there will be no effect, no further investigation will be recommended. It should be stressed, however, that should evidence for archaeological resources be revealed during construction or be provided after the project commences, the Ohio Historic Preservation Office must be informed

immediately and consulted as to the appropriate action. Federal law has established procedures for the treatment of properties discovered during the implementation of the undertaking [36 CFR Part 800.11(d)(1)].

When it is determined that previously recorded or unrecorded archaeological resources may exist in the area of project impact, the Ohio Historic Preservation Office will recommend that a survey be undertaken. While the agency is responsible for identifying all cultural resources within the project area, these guidelines address only the identification, evaluation, and data recovery of archaeological resources. A phased approach is used in Ohio; the phases correspond to the required tasks of identification, evaluation, and data recovery, where appropriate. The general purpose of each phase is described in the following section. More detailed guidelines appear in Section Two, starting on page 23.

1. Phase I: Survey

The Phase I survey is intended to provide a description of the archaeological resources within the project area. (Because, in general, little is known about the archaeological sites which may be encountered in an area, all archaeological sites should be recorded on OAI forms.) The methodology of a research design for a Phase I survey must, therefore, be adequate to make it highly probable that all sites will be detected. Sites may be identified through a combination of documentary research, informant interviews, surface reconnaissance, and subsurface testing. Any or all of these techniques may be used in a particular survey. The Phase I survey should result in the discovery of unrecorded sites and the confirmation of the existence and location of previously recorded sites in the project area. The goal of a Phase I survey is to identify and record on OAI forms both prehistoric and historic archaeological resources within the project area.

The results of the Phase I survey are to be incorporated in a report meeting the minimum standards and specifications of the Ohio Historic Preservation Office (see Report Standards, starting on page 25). The report serves as the basis for comment by the Ohio Historic Preservation Office on the adequacy of the Phase I survey and the need for additional work. Each site identified during Phase I survey should be given comprehensive and detailed documentation individually and separately from other sites. If no

archaeological resources are discovered and the report reflects an adequate consideration of the potential for archaeological resources, the Ohio Historic Preservation Office will recommend that no further investigations are needed.

2. Phase II: Evaluative Testing

A Phase II investigation is designed to sample the archaeological resources identified during the Phase I survey and allow a decision to be made about significance, defined as eligibility of the site for listing in the National Register of Historic Places and/or the State Registries. A Phase II investigation will involve an intensive study of individual sites through techniques designed to reveal information on stratification, the presence of features, paleoenvironment, artifact inventory, chronology, and site boundaries, among others, as defined in the research plan. The goal of the investigation is to provide evidence sufficient to relate the site to others in the local area, region, state, or nation. Site significance should be evaluated by reference to relevant criteria (National Register, State Registries, etc.), and such factors as establishing the place of the site in settlement patterns and/or by making reference to any available historic context summaries and research topics. The results of the Phase II study are documented and summarized in a report reviewed by the Ohio Historic Preservation Office. A statement as to the author's opinion of the resources' eligibility must be included in the report.

The Ohio Historic Preservation Office's comments on the Phase II report will include an evaluation of the adequacy of the report in terms of the standards and specifications for Phase II reports (see Report Standards starting on page 25) and the discussion of site significance. The Ohio Historic Preservation Office response will also include an opinion regarding eligibility and the need for additional consideration of the resources. If sites are determined not eligible on the basis of the Phase II results, the Ohio Historic Preservation Office will comment that no further field investigations will be needed. If archaeological resources are determined to be eligible, the Ohio Historic Preservation Office will recommend either that the significant sites be avoided by project activities or that, if an effect is unavoidable, the scientific information contained in the site be recovered by data recovery (Phase III) excavations.

If significant resources located within the project area will be affected by the project, and this effect cannot be avoided, the Ohio Historic Preservation Office will determine that the project will have an adverse effect on these resources. In some cases this can be mitigated through the completion of an approved data recovery plan (Phase III). A determination by the Ohio Historic Preservation Office of no adverse effect through data recovery would be appropriate when the information that is contained within the archaeological site is the primary reason for significance, and that the recovery of that data would not detract from its significance. Some archaeological sites, such as some containing human remains, derive a major portion of their significance from location, setting, context, or other values that would be lost or damaged by a data recovery program. For such exceptional sites the Ohio Historic Preservation Office may not consider a no adverse effect determination based on a data recovery plan. Preservation in place is usually the preferred option when the site would not be subject to even greater danger when left in place.

3. Phase III: Data Recovery

Phase III investigations are intended to mitigate the adverse effects to significant sites through data recovery. Data recovery investigations generally involve large-scale excavation of archaeological material from a site. Because of the variety of environmental settings and site types, Phase III investigations must be designed on a case-by-case basis in consultation with the Ohio Historic Preservation Office. The sample outline for a Phase III data recovery project on pages 87-88 provides the basic components of a Phase III investigation, but individual investigations will be designed to recover information related to the significance of the site, that is, the investigations will be problem oriented and designed to answer specific questions.

The results of Phase III studies are incorporated in a report which is reviewed by the Ohio Historic Preservation Office. Although the content and focus of Phase III reports may vary, it is expected that they will address specific problems outlined in historic contexts. The justification for the requirements placed on federal agencies by the NHPA is the protection of significant scientific information. Phase III investigations must focus on the research problems which make the site significant.

Completion of Phase III studies and approval of the report will, in most cases, satisfy the agency's responsibilities regarding archaeological resources. The Ohio Historic Preservation Office will respond to a complete and adequate Phase III report with an opinion that the project will have no adverse effect. In some cases, the no adverse effect finding may be given prior to Phase III studies, conditioned upon the submission of a complete Phase III report.

It must be emphasized that the agency or applicant remains responsible for the consideration of archaeological resources discovered during construction. Accidental discoveries need to be reported immediately to the Ohio Historic Preservation Office (and the Secretary of the Interior, according to 36 CER Part 800.11(d)(1), when applicable) and steps must be taken by the agency or applicant to prevent any further damage to these resources until an appropriate strategy for investigating, evaluating, and protecting them has been developed in coordination with the Ohio Historic Preservation Office.

Section Two

Research Designs for Investigations

A research design is an organizational device that identifies objectives of a study and the procedures that can be adopted to achieve the objectives successfully. In archaeology, a research design typically includes an explanation of the problem(s) addressed by the research, a formulation of the hypotheses to be tested, definitions of artifact and ecofacts appropriate to the problem, the selection of methods and techniques of data collection and analysis, the choice of a sampling design which governs the distribution and intensity of coverage, and a specification of how project results are to be evaluated in reference to the problem. In the present context, it is important for the research design to define what is potentially significant. This potential significance is outlined by addressing informational needs within specific contexts and property types, and/or within the geographic/temporal framework. The information necessary to evaluate a resource's potential eligibility should be drawn from, but not be limited to the following.

- Research questions relevant to the geographic area and temporal period.
- Types of historic properties that have (or are likely to have) addressed research questions.
- Probability assessments of the types of properties existing within a project areas (new types may have to be added).
- Methodologies proposed to locate properties. This would include a discussion as to size and relative distribution based on type. The methodology should address what standards are being used and why. For example, if it is established that sites of less than 5 meters in extent may exist in the project area and that they may address one or more research questions, an interval of greater than 4 meters would have to be adequately explained. This is not to say that sampling intervals of 5 meters or greater would not be acceptable in some instances. However, the research design would have to show clearly

why these resources less than 5 meter in extent, which might not be discovered, would be acceptable losses.

- Overviews, summaries, or syntheses of what has been done, which discusses the sampling intervals, depths, size, and overall spacing. This section should also include if and how the methodology was modified and for what reasons. The research questions may have to be revised in light of methodological constraints or alterations. Observations in the field may also necessitate modifications. Deeply buried deposits or historic disturbances often will require an alteration of a sampling strategy prepared prior to a field visit.
- Identification criteria. If a potentially significant property is located, will some limited evaluative testing take place and what form will this take? The research design should also provide information on how boundaries will be addressed at the evaluative level.

A good research design develops a series of goals and the methodology for reaching them. The design would show how to do an evaluation of the resources in the project area and would be tailored to the expected resources. If the archaeologist does not have the information necessary to develop a research design specific to the task at hand, the guidelines outlined in the appendix (page 53) should be used. But even the use of these guidelines would require a report meeting the requirements in Section Three (page 25).

Section Three

Report Standards

A. Report Format

The following format is required for all public archaeology projects under the Ohio Historic Preservation Office's review authority, including reports prepared under the guidelines in the appendix, and is recommended for others. It is based on the standards recommended for archaeological reports for federal projects as outlined in the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation*.

The report is designed to provide a systematic body of data for future evaluation and research. The report format is not designed to exclude categories of information not listed, nor to offer a rigid format. It represents a minimum level of documentation, and may be modified in consultation with Ohio Historic Preservation Office to accommodate the special circumstances of particular projects and project phases. A complete report submission includes:

- A copy of each final report.
- Photographs, maps, etc., on high-quality (preferably acid-free) paper. Blue-line drawings or equivalents should not be included in final reports.
- Images of a quality equal to black and white photographs.
- Howard Permalife bond paper, or equivalent. High rag content bond is acceptable.
- A dry-process (Xerox or equivalent) photocopy.

B. Report Outlines

Phase I

A. Title Page

1. Title of the report, including project name, township, and county.
2. Author(s), principal investigator, address, and telephone numbers.
3. Client for whom report is prepared, address, and telephone number.
4. Lead public agency (e.g., Ohio Department of Transportation, Federal Communications Commission, Housing and Urban Development), if applicable.
5. Date of report.

B. Abstract

1. Summary of location, scope of work, methods, findings, and recommendations.
2. Statement of the size of area surveyed and size of project area.
3. A list of inventory forms completed as part of the project is to be included in the report. A photocopy of the first page of each form may be substituted for the list. Original inventory forms are to be submitted to the Ohio Historic Preservation Office separately.

C. Table of Contents — topical headings with corresponding page numbers. Authors of sections must be indicated if different from principal authors.

D. Lists of figures, plates, maps, and tables with corresponding page numbers.

E. Graphics

1. Quality maps and illustrations are required. Scale and north arrow must be included on maps and photos.
2. Diagnostic artifacts recovered or observed must be illustrated with a scale.

F. Introduction

1. Discuss thoroughly the purpose and circumstances of the contracted services including location of project, description of the proposed project, project administration, organization, constraints, and acknowledgements.

G. Research Design (see Section Two on page 23)

1. Provide a statement of the problem (including kinds of properties looked for), basic assumptions, activities, and techniques, including strategies and methods required for problem solution and hypothesis testing, and a specification of the relevant data and how they will be utilized for an adequate understanding of the resource. The information in numbers 2-4, immediately following, must be included. Any variations or modifications made to the research design during the survey should be noted.

2. Field Visits

- a) Prehistoric: Document project environment and extent of previous disturbance.
- b) Historic/Urban: Record presence of above-ground remains and existing buildings, structures, and objects.

3. Background Research

a) Prehistoric

- (1) Documentary research on environment must include local physiography, geomorphology, soils, hydrology, flora, fauna, climate, and geology.
- (2) Provide a review of relevant culture histories, previous research including chronology, settlement and subsistence patterns, site types, and any other available data which may be important for determining what types of cultural resources are likely to be present, how these may be recognized, and which methods will be effective in their location, identification, and evaluation.

(3) Identify known archaeological resources utilizing the Ohio Archaeological Inventory, Ohio Historic Inventory, National Register of Historic Places, State Registries, prior surveys, manuscripts, maps, historical documents, and other sources.

(4) Record interviews with informants providing names and date of interview, as well as illustrations of any representative material remains.

b) Historic

In addition to a) above, provide:

(1) Information regarding the transformation of the landscape since European settlement and settlement history.

(2) Relevant information contained in the Ohio Historical Society and local historical society files.

(3) Research including general or specific secondary histories, previous survey reports, historic property registers, historic maps, atlases, photographs, and primary documents such as deeds, tax assessments, etc., as applicable.

c) Urban—Same as a) and b), above.

4. Field Methods and Techniques

a) Describe and justify data collecting techniques, sampling, and artifact retrieval procedures. If probability zones are established, they should be illustrated on a project map.

b) Describe environmental (weather and surface) conditions during survey and their effects on survey results.

c) Record the procedures and results of field survey to include:

1) Prehistoric

Include dates of fieldwork, list of personnel, and their duties (Professional qualifications for all key personnel, including field supervisors, must be included in an appendix, or placed on file with the Ohio Historic Preservation Office and referenced in the report), results of walkover of entire project area, results of surface survey, and.

- (a) State percent of ground visibility and how it was determined.
- (b) Indicate methods utilized to determine density and extent (horizontal and vertical) and integrity of recovered materials.
- (c) Provide profiles from selected test units
- (d) Provide graphic and written summary descriptions of all surface collection stations. Descriptions should include spacing and number of transects.
- (e) Provide mapping showing the location and size of test units (provide graphic and written description with appropriate scale).
- (f) Discuss types of levels excavated (natural, cultural or arbitrary) and justification for techniques.
- (g) State test unit interval. Describe natural and/or cultural stratigraphic levels, features, and / or material remains encountered within each test unit.

2) Historic/Urban

Use all precepts stated in the above for Prehistoric criteria plus:

- (a) Measurement references to historic features in feet/inches.
- (b) Completed forms for isolated historic artifacts.

H. Analysis

1. Specify counts of materials recovered (by number or weight as appropriate) and their provenience. Descriptions of materials should include, type of material; metric attributes; other alterations, such as heat alteration, edge damage, weathering; etc.
2. List cultural/chronological type names (e.g., Brewerton corner notched) and material type (e.g., Upper Mercer Chert), when possible.
3. Specify and tabulate by type historic ceramics (paste, ware, manufacturer, and date); metal (manufacturing technique and date); glass (color and type).
4. Tabulate faunal or floral material by taxon and number, if possible.
5. Summarize human remains by individuals for location, deposition, position, orientation, depth, stature, sex, age at death, etc., as appropriate.
6. Site forms: A list of Ohio Archaeological Inventory, Ohio Historic Inventory, Ohio Historic Bridge Inventory, and Ohio Historic Landscapes Survey forms must be included or a photocopy of the first page of each form.

I. Curation

1. All artifacts, samples, specimens, field notes, journals, log books, field forms, analysis, maps, drawings, photographic slides and negatives, and project correspondence should be deposited in a facility which meets the standards outlined in Section Five (starting on page 39). Provide a specific statement of the present location and, if different, of the facility which will serve as the permanent curation location. Append to the report a letter of agreement for permanent curation signed by an authorized representative of the approved curatorial facility. Open-ended agreements are acceptable subject to verification by the Ohio Historic Preservation Office. It is the responsibility of the archaeologist to obtain permission for permanent curation prior to the initiation of fieldwork.

J. Eligibility Assessment

1. When sufficient data are available, each site is to be evaluated in terms of its eligibility for listing on the National Register of Historic Places, the State Registry of Archaeological Landmarks, and the State Registry of Historic Landmarks, as applicable. The investigator must state the justification for considering the eligibility of any resource. In all such considerations the federal guidelines for completing National Register of Historic Places forms, (36 CER Part 60), should be applied in assessing archaeological properties located within the area of the proposed project's potential effects. All such assessments shall include site by site evaluation of data potential, recommendations for recovering such data, and statements of the probable significance of such data in terms of National Register of Historic Places criteria or State Registries criteria, as appropriate.

K. Conclusions

1. The concluding section should present a management summary including a brief discussion of the following:
 - a) Scope of project
 - b) Location of project
 - c) Methods employed
 - d) Findings
 - e) Evaluation of findings including.
 - (1) the significance of each site in terms of its scientific (archaeological), historical and/or cultural value (If the examination did not offer an opportunity to gain data sufficient to arrive at a satisfactory conclusion, offer recommendations for further research).
 - (2) primary impact
 - (3) secondary impact (if known)

(4) analysis of research design, methodology, and expectations versus actual results

f) Possible mitigation measures

L. References cited:

Follow *American Antiquity* style guidelines.

M. Required appendices

1. Provide a scope of service and other project documentation.
2. Include vitae of all key project personnel or reference location at Ohio Historic Preservation Office.

Phase II

A. Title page (see Phase I requirements on page 26)

B. Abstract (see Phase I requirements)

C. Table of Contents (see Phase I requirements)

D. Lists of Figures, Plates, Tables, Maps (see Phase I requirements)

E. Introduction (see Phase I requirements on page 27)

F. Research Design

1. Background Research—Summarize previous investigations, and tabulations of Phase I artifact and feature information to include:
 - a) A description of regional/local settlement pattern(s)
 - b) summary of types of data expected from investigation
 - c) For historic/urban, in addition to the above, a history of ownership, occupation, land use, and development
2. Field Methods and Techniques
 - a) Describe and justify the methods used to determine the archaeological resources' potential and integrity

b) Testing

Address each of these goals:

- (1) Boundary definition of sites
- (2) Identification of features (representative drawing and photographs should accompany report)
- (3) Artifact distribution
- (4) Dating
- (5) Identification of stratified deposits
- (6) Botanical/ fauna I information potential

H. Analysis

1. Tabulate all artifacts by type, provenience, level and feature, along with quantitative descriptions of artifacts as specified for Phase I.
2. Categorize artifacts for comparison.
3. Provide the results of cross-mending and distributional plotting, when appropriate, to assess site structure.
4. When present, provide results of flotation.
5. Include the results of radiocarbon samples, when available.

Register Eligibility

1. Provide an assessment of site eligibility with appropriate references to the criteria for the National Register of Historic Places (36 CFR Part 60), the State Registry of Archaeological Landmarks and the State Registry of Historic Landmarks, as applicable.

J. Assessment of Project Impact

1. Discuss impact of project on archaeological resources using graphics when appropriate.
2. Suggest mitigation alternatives.

- K. Conclusions (see Phase I requirements)
- L. References cited (see Phase I requirements)
- M. Appendices (see Phase I requirements)

Phase III

All applicable sections of the report outlines for Phase I and Phase II reports, pages 26 and 32, should be included in a final report. In addition, while the content and focus of Phase III reports may vary, they should address the research questions identified in the data recovery plan (cf. Phase III, A Sample Outline for a Data Recovery Project, page 87).

In some cases it may be appropriate to reference earlier reports for the information necessary. The Ohio Historic Preservation Office should be consulted prior to making such references.

C. Criteria for Ohio Historic Preservation Office Review of Archaeological Reports

Reports must satisfactorily address the questions below in order to be accepted by the Ohio Historic Preservation Office.

- Are the methods and techniques of the investigation adequately justified and described? Are the objectives of the investigation clearly stated?
- Is the research design coherent? Are the methods and results appropriate to the purposes and goal?
- Have previous related investigations been considered and incorporated into the work?
- Has the present investigation been related to the broader theoretical, methodological, and descriptive concerns in anthropology, archaeology, and history and/or concerns listed in established historic contexts?
- Are all sites adequately described and mapped?

- Are artifact inventories, photographs, drawings, and descriptions presented?
- Are artifacts described according to appropriate categories and nomenclature and labeled with inventory numbers?
- Are sites recorded using standard Ohio Historic Preservation Office codes and numbers?
- Are artifacts, sites, features, and their distribution interpreted in terms of human cultural behavior?
- Are sites placed in their environmental and cultural (historical) context?
- Are statistical manipulations and special techniques correctly applied and described?
- Is the significance of sites adequately justified by reference to appropriate significance criteria, previous research, the type and quantity of data derivable, and the relevance of these data to broad anthropological/archaeological problems?
- Is the project fully described so the potential for impact is known and/or discussed?
- Are locations of shovel tests and other sampling units clearly described and mapped?
- Are there recommendations to minimize or avoid impacts? Do these recommendations accurately reflect the impact on that which makes the resources significant?
- Is the potential National Register and/or State Registries eligibility of all sites considered?
- Are maps, photographs, and drawings appropriate, clear, and adequately labeled and numbered?
- Is the list of references and persons consulted complete?
- Is the disposition of artifacts clearly described? Are provisions for storage and curation adequate?

- Have site forms been referenced and provided separately? Numbers assigned to site forms must be included in the body of the report.
- Are any special conditions or biases that may have affected the survey results identified and discussed?
- Has the appropriate report format (Phase I, II, III) been followed?

Section Four

Personnel Qualifications

These guidelines are to be used in evaluating the qualifications of individuals directing, supervising, and/or conducting archaeological investigations under the review authority of the Ohio Historic Preservation Office. Typically this includes archaeological work undertaken in compliance with federal, state, or local laws and regulations as well as projects funded with grants administered by the Ohio Historic Preservation Office. The guidelines are designed to ensure that project personnel have the training appropriate to the tasks they are undertaking.

Note that while the four categories identified below reflect the pyramidal, hierarchical personnel structure normally associated with large, complex projects, on small projects the project director, the field director, the field supervisor, and the crew can be a single individual.

1. **Project Director:** Individual(s) with overall responsibility for an archaeological investigation. This includes developing a research design and methodology commensurate with its objectives. The project director must meet the personnel qualifications for archaeology in the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* and/or be certified by a professional archaeological association, such as the Society of Professional Archaeologists.
2. **Field Director:** Individual(s) with responsibility for the execution of the research design and methodology in the field. The field director must meet the *Secretary of the Interior's Standards and Guidelines* or be certified by the Society of Professional Archaeologists in field archaeology, or be certified by a professional archaeological association. In lieu of the above, proficiency as a field director will be evaluated on a case-by-case basis, taking into account the individual's education, prior field experience, and reports and publications.

The project director or the field director must be in the field whenever fieldwork is being conducted.

3. **Field Supervisor:** Individual who oversees work in the field under the direction of the project director and/or the field director. The field supervisor must have a degree in anthropology, history, or a closely related field or equivalent experience, at least four months of supervised archaeological fieldwork, and six months of additional fieldwork.

Typically this person supervises a field crew, but may act as field crew as well. In order to ensure adequate supervision the ratio of field crew to field supervisor must not exceed 5 to 1.

4. **Field Crew:** Given the level of supervision outlined here, maximum flexibility is permissible in the selection of field workers. This approach accommodates a wide variety of applications ranging from projects with paid professional staff to projects in which volunteers may participate. The key is adequate supervision and accountability.

Section Five

Curation Standards and Guidelines

A. Standards

Standard I: Collections from archaeological resources of archaeological interest must receive curation in a repository.

Guidelines:

1. The classes of material remains which should be curated can be determined from the research problems contained in pertinent research designs or historic contexts for archaeological resources.
2. At least a representative sample of each class of material remains and all associated records should be curated. The disposition of non-curated material remains from archaeological investigations should be documented in accordance with standards and guidelines such as those adopted by the American Association of Museums.
3. A collection should be deposited in a repository located as close as possible to the collection's point of origin.

Standard II: Collections to be curated must be accompanied by documentation stating that the property owners from whose properties the collections were taken have relinquished ownership or have consented to the curation arrangements.

Guidelines:

1. Archaeologists have a responsibility to work with property owners and repositories during all stages of archaeological investigations to obtain the necessary agreements for curating collections.
2. Copies of agreements should be included in reports of archaeological investigations.

Standard III: Collections must be analyzed, processed, cataloged and curated in a timely manner.

Guidelines:

1. Archaeologists and other researchers should analyze, process, and catalog collections from archaeological investigations without delay. The level of analysis should be dictated by the research design. Processing and cataloging should be done according to the requirements of the repositories agreeing to curate the collections.
2. Following analysis, processing, and cataloging, collections should be deposited in repositories without delay.

Standard IV: Repositories being considered for curation of collections must have adequate and secure curation capabilities. They will have the following characteristics: adequate space, facilities, and qualified professional personnel for the analysis, conservation, curation, storage, and maintenance of collections.

Guidelines:

1. The exact nature of what will be adequate controlled space and facilities will vary depending on the volume and the kinds of collections to be curated.

An acceptable repository should have, at minimum, a laboratory where specimens can be cleaned, labeled, preserved, conserved, studied, and stored. The repository should have a secure storage facility and record-keeping systems that ensure orderly maintenance of the collections, and their protection from environmental degradation.

2. Associated records should be stored in environmentally controlled, secure, and fire resistant archives. Preferably, a second set of associated records should be stored in another location.
3. Professional staff should be available to care for the particular materials being curated, to maintain a comprehensive catalog, and to identify potential problems in access, handling, or preservation of collections.
4. The repositories legally designated as curation locations should have organizational rules, bylaws, or other regulations providing for

monitoring of these facilities. They should have standards and guidelines for the disposition of their assets upon dissolution which meet or exceed those recommended by the American Association of Museums.

Standard V: Repositories must allow access to collections within a reasonable time when requested for research or other legitimate purposes.

Guidelines:

1. Researchers or others with legitimate interests in collections may be charged reasonable fees so that repositories can recover costs incurred in providing access to and use of collections.
2. Evaluation of the qualifications of researchers should be guided by the professional qualifications in Section Four starting on page 37. Students should be sponsored by a person meeting those qualifications.
3. Evaluation of other legitimate purposes, such as access to sacred objects for religious purposes, should be made in consultation with appropriate representatives of the interested parties, including those requesting access, the owners of the collections, and state or local officials.
4. When repositories do not permit material remains to be readily accessible because handling would be physically damaging to them, researchers and others with legitimate interests should request that repositories find alternative methods for examination or other uses.

Standard VI: Curation needs must be considered at all stages of archaeological investigations, including planning, survey, analysis, processing, cataloging, and conservation.

Guidelines:

1. Contractors and agencies should consider the need to curate collections in the development of any identification, evaluation, and treatment plans. This should include information on the availability, capability, and requirements of repositories which may be utilized by the contractors or agencies.
2. Agencies should ensure that contractors and subcontractors have adequately provided for the curation of material remains including appropriate stipulations in contracts and by determining whether

collections have been appropriately deposited following contract completion.

3. Archaeologists should inform their employer of any special needs that material remains to be collected might have and arrange for curation in appropriate repositories. For example, if it is likely that perishable material remains such as bone, seeds, basketry, or cloth might be collected, special curatorial arrangements such as climate-controlled storage will be necessary. Almost all material remains removed from submerged sites require special attention such as controlled drying and chemical preservation; many need stabilization of metal oxidation as well.
4. Agencies, contractors and subcontractors should become familiar with the requirements of repositories to be used for collections, and ensure that professionals curate the collections. For example, some repositories require that material remains to be deposited are cataloged in a particular way or are stored in containers of a particular size or type. It is safer and more efficient to plan to meet these requirements before or during archaeological investigations rather than to recatalog or repack material remains prior to delivery to a repository.

Standard VII: In situations where collections are to be curated in repositories other than acceptable curation facilities owned, controlled, or operated by the individuals, institutions, or agencies responsible for the recovery of the collections, there must be a legally binding contract between the legal agents of the parties responsible for the transfer.

Guidelines:

1. Where collections are to be curated in repositories other than acceptable curation facilities, such arrangements should only be temporary. Individuals, institutions, or agencies responsible for the recovery of collections should continue to search for an acceptable repository following completion of the archaeological investigations.

B. Definitions (adapted from 36 CFR Part 79)

Archaeological resource means any surface, subsurface, or submerged location which contains material remains of prehistoric or historic human life or activities

that are of archaeological interest and the depositional environment in which they were interred or accumulated.

Archaeological interest means capable of providing scientific or humanistic understandings of past human behavior, culture change, cultural adaptation, and related topics through the application of scientific or scholarly techniques such as, but not limited to, controlled observation, contextual measurement, controlled collection, analysis, interpretation, and explanation.

Material remains means physical evidence of prehistoric or historic human habitation, occupation, use, or activity. Classes of material remains, and illustrative examples include, but are not limited to:

- Whole or fragmentary pieces of prehistoric or historic structures and features such as houses, mills, piers, fortifications, raceways, mounds, and earthworks.
- Whole or fragmentary prehistoric or historic artifacts of human manufacture and natural objects used by humans such as tools, weapons, porcelain, basketry, rock crystals, feathers, and pigments.
- Prehistoric or historic by-products, waste products or debris resulting from manufacture or use of human-made or natural materials such as slag, dumps, cores, and debitage.
- Prehistoric or historic organic material such as vegetable and animal remains and coprolites.
- Prehistoric or historic human remains such as bone, teeth, mummified flesh, burials, and cremations.
- Whole or fragmentary pieces of petroglyphs, pictographs, intaglios, and other works of artistic or symbolic representation.
- Whole or fragmentary pieces of shipwrecks such as pieces of a ship's hull, rigging, armaments, apparel, tackle, contents, and cargo.
- Depositional environment in which the products and by-products of human activity and the plants and animals with which they interact are encased.
- Environmental specimens such as pollen, soil, burnt clay, and tree core samples.

Collection means material remains recovered from prehistoric or historic archaeological resources as well as associated records documenting the resources.

Associated records means any records that were generated or copied during the course of archaeological work to document prehistoric or historic archaeological resources. Some records such as field notes, profile drawings, artifact inventories, or oral histories may be originals that were generated as a result of the archaeological fieldwork, analysis, and report preparation while others such as deeds, survey plats, historical maps, or diaries may be copies of original public or archival documents that were studied and duplicated as a result of historical research in connection with the work. Classes of associated records (and illustrative examples) include, but are not limited to:

- Records relating to survey, testing, excavation, recording, and analysis of archaeological resources such as site forms, field notes, drawings, maps, photographs, slides and negatives, films, video and audio cassette tapes, oral histories, artifact inventories, laboratory reports, computer cards, tapes, disks, diskettes and printouts, antiquities permits, reports, and accession, catalog, and inventory records.
- Records relating to the identification of archaeological resources using remote sensing data such as aerial and satellite photographs and images, magnetometers, side scan sonar, subbottom profilers, radar, and fathometers.
- Copies of public records relating to the archaeological resources such as deeds, survey plats, military and census records, birth, marriage, and death certificates, immigration and naturalization papers, tax forms, and reports.
- Copies of archival records relating to the archaeological resources such as historical maps, drawings and photographs, manuscripts, architectural and landscape plans, diaries, ledgers, catalogs, and receipts.

Curation means the management and care of collections according to common, professional museum practices, including, but not limited to:

- Inventorying, accessioning, labeling, and cataloging collections.

- Identifying, evaluating, and documenting collections.
- Storing and maintaining collections under appropriate environmental conditions and physically secure controls.
- Periodically inspecting collections and taking any necessary actions as may be necessary to preserve them.
- Providing access to and facilities for studying collections.
- Cleaning, stabilizing and conserving collections.

Religious or sacred object means archaeologically recovered material remains that have been historically, habitually, or exclusively used in religious or spiritual activities.

Repository means a facility such as a museum, archaeological center, laboratory, or storage facility managed by a university, museum, or other educational or scientific institution, or state or local government agency, that can provide professional, systematic, and accountable curation and preservation on a long-term basis, and can provide access to archaeological collections and attendant records. Repositories should have staff or consultants who meet pertinent professional qualifications and whose expertise is appropriate to the nature and content of the collection.

Section Six

Glossary

Accidental Discoveries. Resources discovered during implementation of an undertaking. See procedures outlined in 36 CFR Part 800.11(b).

Adverse Effect. The finding of a Section 106 review in which it is determined that the proposed federal action will adversely affect historic properties.

Advisory Council on Historic Preservation (ACHP). The Advisory Council on Historic Preservation was established under Section 201 of the National Historic Preservation Act of 1966.

Code of Federal Regulations (CFR). A series published by the federal government which contains codification of the general and permanent rules published by agencies of the federal government.

Controlled Surface Collection. An investigative technique designed to provide a representative sample of the material remains exposed on the surface of an archaeological site.

Environmental Impact Statement (EIS). A report providing a level of documentation required under provisions of the National Environmental Policy Act of 1969 (42 U.S.C. 4321-4347). Under the Act, agencies of the federal government shall, in consultation with the Council on Environmental Quality, compile a detailed statement concerning environmental impacts of major federal actions significantly affecting the quality of the human environment.

Executive Order 11593. Directs Federal agencies to inventory and nominate to the National Register of Historic Places cultural properties under their jurisdiction or control. Executive Order 11593 requires Federal agencies to seek and to consider comment from the federal Advisory Council on Historic Preservation before implementing any proposed action affecting properties eligible for listing on the National Register. See also 36 CFR Part 800.

Executive Order 12372. This document establishes procedures for the cooperative implementation of proposed federal assistance programs, federal

requirements for plans, and direct federal development projects, through consultation which accommodates the concerns of the state and local elected officials. Replaces OMB Circular A-95.

Federal Assistance. The term Federal Assistance, (or Federal Financial Assistance, Federal Assistance Programs, or Federally Assisted Program) means programs that provide federal assistance through grant or contractual agreements, and includes technical assistance programs or programs providing assistance in the form of loans, loan guarantees, or insurance.

Federal Ownership or Control. Federal ownership or control for federal nominations to the National Register of Historic Places means property for which a federal agency holds fee simple title and other properties over which the federal government has jurisdiction, including those on the Outer Continental Shelf.

Federal Preservation Officer. The official designated by the head of each federal agency responsible for coordinating that agency's activities under the National Historic Preservation Act, as amended, and Executive Order 11593.

Historic Context. A mechanism created for planning purposes that organizes information about historic properties based on a shared theme, specific time period, and geographical area.

Historic Property. A district, site, building, structure, or object included on, or eligible for inclusion on, the National Register of Historic Places, the State Registry for Archaeological Landmarks, or the State Registry for Historic Landmarks. The term eligible for inclusion in the National Register includes both properties formally determined as such by the Secretary of the Interior and all other properties that meet the criteria for listing in the National Register.

Intensive Level Survey. Systematic, detailed field (and archival) inspection of an area designed to identify fully architectural, archaeological, and historic properties, and calculated to produce a level of documentation sufficient, without any further data, to evaluate their National Register eligibility or to evaluate them against predetermined criteria of significance within specific historic contexts.

Mitigation. Any action which reduces or eliminates adverse effects which would

result from a proposed action. Mitigation may include project redesign or relocation, data recovery and documentation, etc. (See 36 CFR Part 800).

National Historic Preservation Act of 1966, as amended (P.L. 102-575). An act of Congress which expanded the National Register of Historic Places and authorized a program of matching grants-in-aid to assist states and the National Trust for Historic Preservation in carrying out historic preservation activities.

National Register of Historic Places (NRHP). The national list of districts, sites, buildings structures, and objects significant in American history, architecture, archaeology, engineering, or culture. It is maintained by the Secretary of the Interior under authority of Section 101(a)(1)(A) of the National Historic Preservation Act, as amended.

National Register of Historic Places Criteria for Evaluation. The criteria used by the Ohio Historic Preservation Office and the National Park Service to evaluate the eligibility of properties for listing on the National Register of Historic Places. The criteria are:

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

- A. that are associated with events that have made a significant contribution to the broad patterns of our history; or
- B. that are associated with the lives of persons significant in our past; or
- C. that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. that have yielded, or may be likely to yield, information important in prehistory or history.

Native American Graves Protection and Repatriation Act (NAGPRA). A federal statute that requires federal agencies and museums that receive federal

funds to consult with Indian tribes, Native Alaskan entities and Native Hawaiian organizations regarding the proper care and deposition of Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony.

No Adverse Effect. The finding of a Section 106 review in which it is determined that the proposed Federal project will not adversely affect historic properties located within the impact area of the project (see 36 CFR Part 800.9).

No Effect on Properties. The finding of a Section 106 review in which it is determined that there is no effect on historic properties that are or may be located within the impact area of the proposed project (see 36 CFR Part 800.9).

No Properties in Impact Area. The finding of a Section 106 review that no properties meeting National Register eligibility criteria (or already listed on the National Register) are located within the impact area of the proposed project (see 36 CFR Part 800.9).

Ohio Archaeological Council (OAC). A non-profit organization of professionally competent archaeologists which provides aid and advice to all citizens and state and federal agencies; serves as a clearinghouse for archaeological and cultural/historical data pertinent to the aboriginal peoples and early pioneers of Ohio; promotes conservation and preservation of archaeological sites and records; disseminates information on Ohio archaeology to the public; and addresses major problems related to the archaeology of Ohio.

Ohio Archaeological Inventory (OAI). An ongoing, statewide survey of archaeological sites. The OAI is maintained by the Ohio Historic Preservation Office.

Ohio Historic Bridge Inventory (OHBI). An ongoing, statewide survey of bridges stored in separate files with the Ohio Historic Inventory.

Ohio Historic Inventory (OHI). An ongoing, statewide survey of buildings, structures, and sites of architectural and historical significance. The OHI is maintained by the Ohio Historic Preservation Office.

Ohio Historic Landscapes Inventory. An ongoing statewide survey of historic designed landscapes stored in separate files with the Ohio Historic Inventory.

Ohio Historic Preservation Office (OHPO). A division of the Ohio Historical Society, also known as the Historic Preservation Division, which carries out mandated functions of the National Historic Preservation Act for the state.

Persons Interested/Interested Party. In a Section 106 review, those organizations and individuals that are concerned with the effects of a federal undertaking on historic properties.

Reconnaissance Level Survey. 1) Small-scale archival or field research, designed to provide a general impression of an area's architectural, archaeological, and historical properties and their values, but not calculated to produce a level of documentation sufficient to nominate a property to the National Register or determine its eligibility for listing. 2) An examination of all or part of an area accomplished in sufficient detail to make generalizations about the types and distributions of historic properties that may be present.

Research Design. A statement of proposed identification, documentation, investigation, or other treatment of a historic property that identifies the project's goals, methods, and techniques, expected results, and the relationship of the expected results to other proposed activities or treatments.

Secretary's Standards and Guidelines. (48FR44716-44742) The *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* provide technical information about archaeological and historic preservation activities and methods. The *Standards and Guidelines* are prepared under the authority of Section 101 (f), (g), and (h), and Section 110 of the National Historic Preservation Act of 1966, as amended. The subjects covered in the *Standards and Guidelines* include: preservation planning, identification, evaluation, registration, historic research and documentation, architectural and engineering documentation, archaeological investigation, historic preservation projects, and preservation terminology.

Section 106. The section of the National Historic Preservation Act of 1966 that states: *The head of any Federal agency having direct or indirect jurisdiction over a proposed Federal or federally assisted undertaking in any State and the head of any Federal department or independent agency having authority to license any undertaking shall, prior to the approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license, as the case may be, take into account the effect of the*

undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register. The head of any such Federal agency shall afford the Advisory Council on Historic Preservation (established under Title II of this Act) a reasonable opportunity to comment with regard to such undertaking.

State Historic Preservation Officer (SHPO). The official appointed or designated pursuant to Section 101 (b)(1) of the National Historic Preservation Act to administer the state historic preservation program or a representative designated to act for the State Historic Preservation Officer.

State Registry of Archaeological Landmarks. A list of significant archaeological properties in Ohio maintained by the Ohio Historical Society pursuant to Section 149.51 of the Ohio Revised Code. **State Registry of Historic Landmarks.** A list of significant historic properties in Ohio maintained by the Ohio Historical Society pursuant to Section 149.55 of the Ohio Revised Code.

Surface Mining Control and Reclamation Act of 1977 (SMCRA). A federal statute that establishes mining and reclamation standards for coal operators with surface coal mining operations or with surface effectment from underground coal mining operations. The standards provide for the creation of State programs to permit surface coal mining operations (including surface effectment from underground coal mining operations) and to assure that adequate procedures are undertaken to reclaim surface areas as contemporaneously as possible with the surface coal mining operations. In Ohio, the State program, which was approved in 1985, is administered by the Ohio Department of Natural Resources, Division of Reclamation. The Act establishes the Office of Surface Mining within the U.S. Department of Interior as the federal agency charged with carrying out the provisions of the Act and with overseeing the State programs.

Undertaking. Any project, activity, or program that can result in changes in the character or use of historic properties, if any such historic properties are located in the area of potential effects. The project, activity, or program must be under direct or indirect jurisdiction of a federal agency or licensed or assisted by a federal agency. Undertakings include new and continuing projects, activities, or programs and any of their elements not previously considered under Section 106.

Appendix

The following guidelines are set forth to ensure a consistent and uniform approach to the treatment of archaeological properties in the absence of an explicit research design for a specific project. The Ohio Historic Preservation Office has consulted with other states, non-Ohio Historic Preservation Office archaeologists, the Ohio Archaeological Council, and has referred to the archaeological literature, federal guidelines, and other states' standards in developing these guidelines.

The guidelines have been developed for three distinct situations: prehistoric, historic (non-urban), and urban contexts. These situations are not mutually exclusive and certain investigations may combine two or more approaches. Moreover, most of the general procedures outlined below will be included in any investigation and will be appropriate in considering historic or prehistoric archaeological sites. The following sections, therefore, are organized by general procedures. Reports generated using this appendix must meet the requirements outlined above in Section Three of the *Archaeology Guidelines*.

These guidelines have not been designed for archaeological investigations of submerged archaeological resources, i.e., shipwrecks and inundated terrestrial archaeological resources. Archaeological investigations of Lake Erie submerged lands that involve the collection of artifacts require a permit from the Ohio Department of Natural Resources (ODNR). ODNR consults with the Ohio Historical Society prior to the issuance of such permits pursuant to Section 1506.32 of the Ohio Revised Code.

When human remains are discovered, the principles outlined in the introduction to the *Archaeology Guidelines* should be followed.

Phase I

A. Field Visit

A field visit should provide the investigator with information on topography,

the extent of prior disturbance, and indicators of the presence or absence of archaeological resources. An initial field visit should be scheduled for all investigations. The results of the field visit should be combined with background documentary research to develop a research design. The initial field visit should also be used by the archaeologist to become familiar with field conditions and types and densities of cultural resources present.

1. Prehistoric

The field visit should include consideration of the local topography and environment that would have affected the formation and preservation of archaeological sites. Although some of this information is available from maps of topography, soils and geology and from documents, there is no substitute for an examination of the local field conditions. The extent of level areas, minor physiographic features (slight rises, depressions, slopes) which might have influenced land use, modern vegetation patterns, the extent of alluvial and colluvial deposition and erosion, and the presence of other significant environmental features (rock outcrops, springs, etc.) should all be noted during the field visit.

The other important category of information available from a field visit is that of prior ground disturbance. An attempt should be made to ascertain and document the nature and extent of previous disturbance(s). Documentation should take the form of photographs, maps, representative test unit profiles, and/or construction records. If disturbance has seriously affected the preservation of archaeological sites or influenced the extent or the intensity of investigations, the Ohio Historic Preservation Office must be provided with sufficient documentation to allow concurrence with the investigator's conclusions.

In evaluating the effect of disturbance and small-scale environmental conditions, the nature of prehistoric settlement and site formation processes must be considered. Archaeological resources, for example, may be preserved beneath recent disturbance. Likewise, wet or marshy areas may be of modern origin.

2. Historic

In addition to the considerations outlined above for prehistoric archaeological

resources, the field visit should note conditions influencing or indicating historic archaeological resource formation and preservation. Perhaps the most obvious is the presence of above ground remains and features, such as foundations and topographic or vegetational anomalies indicating wells, privies, or property boundaries. The location of existing buildings, structures, and objects will guide the search for archaeological features, as well as the presence of property boundaries and roads. Thus, the field visit can provide information not otherwise obtainable.

3. Urban

A field visit is necessary to evaluate the possibility of prior destruction of archaeological resources, the visual evidence for potential archaeological deposits and to make a photographic and written record of existing conditions. In the urban environment, visual evidence for archaeological deposits is often lacking, especially in an open situation such as a large parking lot or modern highway. In such cases no amount of surface inspection will detect the presence or absence of archaeological deposits. However, if the project area currently contains buildings, structures, and/or objects, it is sometimes possible to predict the likelihood of the survival of archaeological resources by an assessment of basement depths, for example.

B. Background Research

This segment of the study is an essential precondition for effective field work and interpretation of the results. Background research should include, but not be limited to, documentary research on the environment and culture history using maps, previous survey results, and local or regional syntheses, and interviews with persons knowledgeable about archaeological resources in the local area.

1. Prehistoric

Prior to the initiation of fieldwork, it is useful to distinguish zones of relatively greater or lesser probability in order to make necessary and appropriate adjustments in the scope and intensity of planned fieldwork. It is essential to establish beforehand a reasoned and documented basis for differentiating probability zones in portions of the study area. Archaeological probability refers to the potential that a specified zone contains archaeological resources, a corollary of the concept that human behavior is patterned. The determination

of probability or archaeological potential must involve a consideration of the factors influencing the formation of all types of archaeological resources. A zone cannot be designated low probability for all types of resources simply because a single resource type, such as Late Woodland villages, would not be expected.

In general, the responsibility of the investigator, in background research, is to develop expectations as to the probability of archaeological resources occurring within the project area and the probable distribution and significance of these archaeological resources. If the project is located in a part of the state where survey data are available and where cultural chronology and settlement patterns have been well-defined, these expectations will be derived from a consideration of the known regional settlement patterns and the local conditions. However, in the report, the investigator is responsible for referring to appropriate regional studies and documenting the local conditions.

In areas where survey data are lacking and little is known of regional settlement patterns, the development of predictive models of archaeological resource location may be appropriate. These models need not be elaborate for small projects and may involve the application and testing of models developed for other regions. However, designation of probability zones without any justification or the uncritical and untested application of predictive models developed for other regions is not an acceptable scientific procedure.

To place the investigations within a fuller context and to examine the ecological and cultural historical parameters affecting the choice of archaeological resource location, background investigations of various sorts must be conducted during Phase I. Some background information should address and critically evaluate environmental characteristics that are pertinent to a definition of cultural chronology and prehistoric settlement patterns, pertinent to establishing relevant cultural ecology, and pertinent to devising predictive models for the location of archaeological resources. Some background environmental information is useful simply to orient the reader of the Phase I report to the project area. Since information on modern environmental conditions may be important for understanding the prehistoric

environment, the Phase I survey should, at a minimum, assemble pertinent data on the following aspects of the project area:

- Geomorphology
- Fauna
- Flora
- Soils
- Climate
- Hydrology
- Geology

Phase I reports should integrate and interpret these data and use them to identify areas in which archaeological resources are likely to be present and those in which they are less likely to be present. These expectations should be explicitly stated and defended by reference to the above categories of information and to local or regional models of settlement.

Phase I background investigation also involves a broad-based review of manuscripts, maps, aerial photographs, historical documents, field notes, prior survey reports, and other material relative to the project area that may assist in the identification of archaeological resources.

The literature search should include an examination of relevant culture histories and previous archaeological and historical research to allow the development of explicit predictions regarding the location of sites in the project area. The geographical area from which background information should be drawn will vary according to project size and the availability of comparative data. Where information on the specific project area or environs is not available, predictions about site locations should be developed from regional settlement patterns, investigations of similar environments outside the local area, or other environmental data.

The goal of this phase of the background investigations is not the production of culture histories per se, but to provide a summary of previously established archaeological resource distributions which can, in turn, be used to predict the likely distribution of archaeological resources within the project area. The range of information used for this summary will vary with the history of archaeological investigations in the area. If the area has been subjected to extensive archaeological investigations, a valley-wide or county-wide synthesis may be adequate. For poorly studied areas, counties or even the entire physiographic region may need to be assessed to synthesize prehistoric and historic settlement pattern expectations. The results of this phase of the

background research should be included in the report as documentation and justification for site location predictions in the project area.

Another component of the background investigation includes interviews with informants. There are persons (such as professional archaeologists, local residents, members of local chapters of the Archaeological Society of Ohio, and local or county historical societies) who may be familiar with the project area and with the locations of recorded and unrecorded archaeological and historical sites. Known locations provided by informants should be recorded, collections examined and documented (photographs, drawings of representative artifacts, summary statistics, etc. are all appropriate), and the names and addresses of informants recorded.

2. Historic

In addition to the general sources of information outlined above for prehistoric resources, investigators should consult sources of environmental and historical information which may direct them to the locations of historic archaeological sites. Background research should include a consideration of the following categories of information:

- the transformation of the landscape since European settlement - this might include maps prepared by early settlers and surveyors, atlases (Sanborn, etc.), county histories, early editions of the U.S. Geological Survey topographic maps, and early photographic records, courthouse plats, etc.
- settlement history - this might come from regional and local histories, maps, and informants. Both primary and secondary sources may be informative.
- survey files of the Ohio Historic Preservation Office and local historical organizations on the results of previous historic structure inventories.

The minimum level of documentary research for a Phase I archaeological investigation in the historic environment includes the examination of the following:

- applicable historical and archaeological survey or excavation report.

- applicable federal, state, and local historic property registers or inventories.
- historic maps, atlases (especially the Sanborn or other insurance maps), photographs, and other primary sources as appropriate to achieve the overall objective of identification of significant cultural resources in the project area and an assessment of their condition of preservation.
- in some cases, additional primary documents such as deeds, tax assessments, insurance surveys, census data, road docket, city directories, or other public and/or private records. In general, however, detailed research into such records beyond a level necessary to fulfill the Phase I objective of resource identification and preliminary assessment of the condition of resource preservation is not required at the Phase I level. Additional or more detailed historical documentation may, however, be required in successive work phases.

3. Urban

In addition to the information sources outlined above for prehistoric and historic contexts (beginning on page 55), the following considerations may apply to urban situations where documentary research is an extremely important technique in the identification of urban archaeological sites.

Documentary research must be performed as early in the project planning phase as possible and well in advance of construction. At a minimum, this research should obtain the following information:

- the pre-urban natural environment, focusing on its relationship to prehistoric and early historic (contact or post-contact) peoples;
- information on the development of the project area over time, from its pre-urban horizons through to its urban florescence, typically during the twentieth century. The scope of the Phase I research should incorporate discussions of broad social, economic, architectural, technological, ethnic, and other historical and cultural trends in the project area, specifically as these relate to the possibility that significant subsurface archaeological resources are or are not likely to be preserved. For example, the effect of municipal services such as water, sewer, and trash disposal should be considered.

- the effects of the urbanization process on the project area. In particular, this phase of investigation should assess the possibility that earlier construction destroyed or has disturbed archaeological resources through grading, blasting, excavation for cellars, subways, sewers, etc. The information should discuss the extent to which earlier construction techniques and projects affected the potential preservation of buried archaeological resources. Earlier sewers, etc., may themselves be historic archaeological resources (i.e., wooden sewers or water pipes or the very early use of pottery pipes) and must be documented in the report.

The minimum level of documentary research for a Phase I archaeological investigation is the same as for historic resources outlined on pages 58-59.

It should be noted that in some cases the documentary research will indicate that archaeological resources are or were once present in the project area. It may be possible to demonstrate by documentary research into previous land uses that such archaeological resources are no longer likely to be preserved. In cases where the documentary record is found to be sufficiently complete, specific, and unambiguous in its demonstration of the destruction of potential archaeological resources, a report detailing this finding may allow the Ohio Historic Preservation Office to conclude that no further field work is necessary.

C. Field Investigation

Field investigation will be done after the field visit and background research to either confirm or invalidate the expectations developed during those steps. The field methodology should reflect informed decisions based on familiarity with the relevant background information. There are no standard techniques which may be mechanically applied in all situations. All methodologies should be derived from and justified by the situation and the background information of the area. The procedures outlined here are a suggested minimum. Alternatives are acceptable if justified in the Phase I report. In developing alternatives, the goal of Phase I fieldwork is the identification of all archaeological sites within the project area.

1. Prehistoric

Fieldwork according to the following minimum standards is expected for Phase I projects.

- a) Investigators should conduct a thorough ground surface inspection or walkover of the entire project area, including a thorough examination of areas where the ground slopes for the presence of rockshelters, rock ledges, or caves that may contain archaeological resources.
- b) In areas where adequate ground surface visibility is already available (for example, in a plowed field) investigators should employ an empirical criterion derived from environmental science to determine the percentage of nonvegetated ground surface that is open to direct inspection. Such areas should be systematically inspected at intervals of 5-10 meters. If archaeological resources are visible at ground surface, a controlled surface collection of these resources should then be made. Use of a grid or piece plotting may be employed. One must be able to define provenience for each object to the level of the sampling framework, i.e., 3-4 meters along a transect.
- c) In project areas of less than 15 degrees slope where adequate ground surface visibility is not readily available (less than 50% several methods may be employed in the attempt to identify archaeological sites.
 - (1) Shallow (less than 15 cm) plowing and disking of formerly plowed fields may be used to improve ground surface visibility, limited to the depth to which a plow has gone before. Prior to plowing a pasture or fallow field, subsurface testing must be employed to determine the extent and depth of any plowzone. A stratigraphic profile must be included in the report. After plowing, disking, and washing follow the procedures outlined in b) above.
 - (2) Hand excavation of .5 m x .5 m or equivalent units may be employed where plowing, disking and washing are not feasible and must be employed in areas with an undisturbed topsoil. Unit interval (the distance that separates two adjacent units) should be 15 meters or less. All shovel units, whether in low or high probability areas, should be excavated in natural stratigraphic

levels or 10 cm levels within natural levels. The use of hand or powered soil augering devices in place of shoveled units is acceptable, if stratigraphic control is maintained and if the volume of all auger tests in a given interval equal a 25 cm squared test unit.

All soil from each natural level in each unit must be screened through ¼ inch mesh hardware cloth to test for the presence of archaeological resources. Troweling through the removed soil is not an acceptable alternative to screening. Each shoveled unit must be excavated to levels in which no archaeological materials could occur or to bedrock, or in the case of deep soil profiles, to at least 50 cm depth below ground surface. If sterile soil or bedrock has not been reached at a depth of 50 cm, procedures for deep testing (see (4) below) should be followed.

- (3) In each portion of the project area where complex, stratified soil profiles are defined (i.e., where more than a simple plow zone/topsoil and underlying subsoil exist), a minimum of four additional .25 m x .25 m shoveled units or one 1 m x 1 m test unit at no greater than 30 m intervals must be hand excavated to sterile soil in natural strata and in 10 cm levels within natural strata, and the soil screened through ¼ inch hardware cloth. The objective of this additional effort in stratified areas or potentially stratified areas is to define the stratigraphy and to establish whether or not archaeological sites are present. This additional testing should cease once this goal has been met.
- (4) Deep testing is required in areas where archaeologically sensitive surfaces may have been covered by buried soil horizons. A geomorphologist should be consulted in the identification of buried soil horizons. Testing methodologies should be developed in cooperation with the Ohio Historic Preservation Office. The interval for testing in deeply stratified contexts is the equivalent of a 1 m x 1 m unit (screened) for each 30 m interval. Deep testing should continue through pre-Wisconsin soils, or until soils associated with pre- 14,000 B.P. are identified unless the project impact is narrowly confined and the depth of impact restricted, in which case testing should continue 0.5-1 m below the depth of impact. Deep testing units can incorporate units excavated using

power augering or backhoe trenches. One hundred sixty auger tests per 30 m, (auger diameter of 3.5 inches) is the equivalent of one 1 m x 1 m unit (for 4 inch diameter auger = 127 auger tests; for 8 inch diameter auger = 32 auger units).

Backhoe trenches should be excavated perpendicularly to stream channels or in areas which are likely to be the site of buried archaeological sites. In areas that are likely to contain deeply buried archaeological deposits, testing should continue to pre--Wisconsin surfaces during the Phase I survey even if a site is first defined at ground surface or in any of the later deposits. In such cases, care should be exercised to minimize the effects of such testing on sites encountered prior to reaching pre-Wisconsin strata. This includes all alluvial areas. If a surface find confirms the presence of archaeological resources prior to deep testing, the deep testing could be included in the Phase II work. However, if no surface archaeological resource exists and the presence of alluvium is found, Phase I must include deep testing.

Additional geomorphological or soil studies may be appropriate where particularly complex or unusual conditions of soil deposition exist. If in doubt the Ohio Historic Preservation Office should be consulted.

All deep tests should be conducted in a manner consistent with the U.S. Department of Labor's Occupational Safety and Health Administration's Standards for Excavating Trenches.

2. Historic

The details of investigation for historic archaeological resources will be determined by the results of the background research and by expectations developed in regard to probable resource types in the project area. In addition to the techniques outlined for prehistoric archaeological resources, and in some cases in place of some of them, specific techniques designed to locate historic resources are appropriate. The distinctive characteristics of historic resources should be taken into consideration as well as the generally greater availability of independent documentation for their presence and nature.

Systematic inspection of plowed fields and subsurface testing at regular intervals will generally be sufficient to locate historic resources. In the absence of information to suggest a more appropriate subsurface testing interval, an interval of 5 m should be used. Mechanical stripping is not recommended in locating historic archaeological resources except in extraordinary cases and in consultation with the Ohio Historic Preservation Office. It may be useful to open units larger than the standard .5 m x .5 m shovel test unit or systematic augering might provide information on presence or absence of historic resources. Whenever historic resources are discussed or reference is made to features within a historic site, measurement references must be in feet/inches as the standard document references will be in feet/inches.

Isolated historic artifact finds should be treated in the same manner as prehistoric resources. However, prior to calling any historic artifact an isolated find, a record search should be conducted to determine if previous historic occupation was known in the area.

3. Urban

Archaeological investigation in urban situations will be undertaken where the field visit, informant interviews, and documentary research suggest that archaeological resources are present or are likely to be present. Phase I field testing is also required if insufficient documentary data exist to permit a valid assessment of the archaeological resource potential of the project area.

The purpose of testing during a Phase I survey is to determine the presence or absence of resources, their location and depth, and to provide information on the testing strategy required for a Phase II survey. Where the project area is accessible, testing is expected. Guidance on subsurface testing in urban areas is contained in the following section on Phase II survey (page 66).

If the results of the field visit, informant interviews, documentary research, and field testing (where appropriate) indicate that archaeological resources exist or are likely to exist in the project area, but such resources are so deeply buried that the proposed project will not intrude upon them, or if they are in a portion of the project area that will not be disturbed, the report should clearly document that this is the case.

If the results of the field visit, informant interviews, documentary research, and testing indicate that archaeological resources exist or are likely to exist in

the project area, and that the proposed project will disturb or destroy them, then a Phase II archaeological investigation will be recommended. The development of a Phase II testing program should be undertaken in consultation with the Ohio Historic Preservation Office.

D. Analysis

Artifacts recovered during Phase I testing should be treated according to current standards of archaeological documentation. A summary of metric attributes should be provided, as appropriate. Basic identification and tabulation of artifacts should be the primary concerns of analysis, rather than more specific problem-oriented analysis. Radiocarbon dating, for instance, will not normally be a goal of Phase I analysis, nor will the analysis of minimum number of individuals or vessels.

In general, artifacts should be classified by material (lithic, ceramic, metal, etc.) and functional type (e.g., projectile point, nail, flake) and tabulated by count and percentage. Whenever possible, cultural/chronological types (e.g., Brewerton corner-notched point, Fayette Thick, Levanna Cord-on-Cord, etc.) and named material types for lithic artifacts (Upper Mercer flint, Flint Ridge chalcedony) should be specified. When in doubt, under specify, for an unambiguous general label is preferable to an unsupported or questionable specific label. The goal of Phase I testing is to document the existence of archaeological resources and provide some guidance to Phase II investigations.

For historic archaeological resources, in addition to above ground classes of material items, analysis should specify and tabulate ceramics by type (paste, ware, manufacturer, if known); metal by type and manufacturing technique, if known; date, if known, or by mean date or chronological parameter, and what techniques and artifacts were used to establish the date; and glass by color and type. Other materials should be tabulated by type and number. Abundant and generally non-diagnostic materials (e.g., slag) may be indicated as present or absent. Identifiable faunal or floral remains should be tabulated by taxon and number.

Human remains should be analyzed and descriptions presented of basic human osteology and content, (i.e., the types and numbers of bones present, the estimated number of individuals, and estimates of stature, sex, age at death,

along with the location, deposition, position, orientation, depth, etc., by individual). As noted in the introduction to the *Archaeology Guidelines*, the removal and subsequent treatment of human remains will usually require consultation with the Ohio Historic Preservation Office.

Phase II

A. Background Research

1. Prehistoric

The purpose of background research in Phase II investigations is to define the potential eligibility of the archaeological resources for listing in the National Register of Historic Places. This will normally involve:

- a) a summary of the results of previous investigations. This should include tabulation of Phase I artifact and feature information.
- b) the definition of the local and/or regional settlement patterns of which the archaeological resource under study was a part. Regional surveys, cultural resource management surveys, previous archaeological investigations in the region or of similar resources may be relevant to this task. The investigator should demonstrate a thorough grasp of the relevant literature.
- c) a discussion of geomorphology, soils, local climate, and biota as they relate to archaeological resource formation and preservation processes, and local or regional settlement systems.
- d) a summary of the types of data that the archaeological resource is expected to exhibit, on the basis of a consideration of analogous archaeological resources and previous information from the archaeological resource under study.

2. Historic

Supplementary documentary research beyond that conducted at the Phase I level is necessary to place the project area and its archaeological resources or classes of resources into their proper historical and cultural contexts. This allows a more comprehensive understanding of the significance of the archaeological resources and their eligibility for the National Register of Historic Places. This phase of documentary research is more intensive and

specific than that conducted at the Phase I level and should address the following considerations:

- a) a more in-depth understanding of the historic character of the project area including the history of property ownership, occupation, land-use, and development. As an example, if the area was primarily industrial in character, the industrial and technological history of the project area should be documented. If the project area was largely residential, more detailed information on, for example, its socio-economic and ethnic character should be assembled.
- b) specific documentary data on archaeological resources to be examined by field testing (see Phase II, Field Investigation, Historic on page 79) are particularly important in this phase. This is necessary so that the empirical data derived from the archaeological testing can be interpreted more fully and in historical context.
- c) documentation of significant persons or events associated with the project area or sites in the project area should be undertaken. This will allow a more informed evaluation of the project area in light of the National Register criteria.

Phase II documentary research outlined above must be conducted prior to any field testing so that archaeological data will not be evaluated and interpreted in a vacuum and so that basic decisions may be made as to field strategy and appropriate techniques.

The minimum level of documentary research for a Phase II archaeological investigation includes primary and secondary documents not previously consulted at the Phase I level. They should be examined and assessed for the project-relevant information they contain. Typical classes of documents that should be consulted include deeds, tax assessments, insurance surveys, census data, road docket, city directories, maps and atlases, city plots, building permits, lithographs, photographs, and other public and private records as may be available for achieving the goals of the Phase II investigation. The National Register Bulletin, *Researching a Historic Property*, provides further guidance.

3. Urban

Additional and intensive background research will usually be necessary to define the significance, extent, and distribution of the artifact concentrations and features identified in the Phase I study. Since Phase I field testing in urban situations will normally be very limited, background research is a particularly crucial component of urban Phase II studies in defining the nature and the significance of the expected site. It is particularly important in urban situations that a major portion of the documentary research must be completed prior to fieldwork, since the results of this research will guide Phase II methodology and determine the appropriate techniques and testing locations. Particular attention should be given to the history of city services such as water, sewer, and trash collection as they affect the nature of archaeological resources. These historic resources are also part of the archaeological record and must be included in the report, as appropriate. Investigators should consult the reports of earlier archaeological investigations, ordinances and resolutions, health department records, utility company records, and other municipal records and maps. The differences between public policy and actual practice should be recognized in predicting the existence of archaeological resources.

B. Field Investigation

Field investigation in Phase II studies should be oriented toward the recovery of information critical to the determination of eligibility, research potential, and integrity. Specific methods and techniques will, therefore, be developed on the basis of the results of background research. Evaluation of significance is the goal of Phase II investigations using, as appropriate, the following objectives:

- Boundary definition is a necessary goal, both to allow a complete evaluation of significance and to allow an evaluation of project effects. In order to establish site boundaries, an appropriate archaeological site evaluation strategy must be identified. For projects which provide a transect of a portion of a site (e.g., pipeline or sewer line rights-of-way) the extent of the site within the right-of-way must be defined. It is often necessary to define the extent of the whole site, including the portions outside the project area. Whenever possible, project planners should consider the possibility of extending investigations outside project impact areas to allow a more accurate definition of site

boundaries and a more complete characterization of the site. For projects encompassing one or more archaeological sites, the boundaries of the site(s) within the project area must be determined. Methods appropriate to prehistoric and historic period sites are detailed below.

- Determining the presence and nature of archaeological features is a goal of Phase II studies. Although the presence of features is not necessary or sufficient to establish National Register eligibility, features are often important sources of scientific information and must be considered as factors in the determination of National Register eligibility. In considering the importance of features, the precise nature of the information they may produce must be established.
- Although detailed studies of artifact distribution and activity areas are appropriate to Phase III data recovery investigations, the potential of a site to yield such information should be considered at the Phase II level. Thus, Phase II field investigations should establish surface artifact distributions and the relation of surface artifact distributions to subsurface features and artifacts. This can best be done by a more intensive application of methods used in Phase I studies.
- Phase II investigation should aim for the recovery of chronologically diagnostic artifacts, the recovery of datable radiocarbon samples, and the recording of geomorphological data which may provide approximate chronological limits to the occupation of the site. The Ohio Historic Preservation Office encourages the collection and dating of carbon samples in Phase II and Phase III investigations, both for the purpose of determining the National Register eligibility of the site and for the broader goal of building regional chronologies.
- Because of the importance of stratified sites in defining regional or local chronologies, culture histories, and cultural system interrelationships, the identification of stratified deposits should be a primary goal of Phase II studies. Although datable stratified

deposits at a prehistoric site in Ohio are important, they are not always necessary in determining a site eligible for listing on the National Register.

- Botanical and faunal material can yield important information on environment, diet, and subsistence practices. The potential of the site to yield such samples should be evaluated by the systematic collection and examination of soil samples. The development of a valid sampling design should be part of all Phase II methodologies.
- Analysis and comparisons of human remains provide much information about many aspects of prehistoric and historic cultures, including, but not limited to, social behavior, demography, history, disease etiology and consequences, and diet. Human remains discovered during Phase II investigations should be treated in a respectful and dignified manner as outlined in the Introduction to the *Archaeology Guidelines*. Standards of data collection and reporting, such as those developed by the Paleopathology Association, should be used.

1) Prehistoric

- a) **Boundary Definition.** When possible, and when the investigator has ascertained that the topsoil has been plowed, the site area should be examined in an intensive walkover after plowing, disking, and washing, if necessary, to produce adequate visibility. Boundaries may be defined by the observed surface distribution of artifacts, keeping in mind that the observed distribution of durable items (lithics, fire cracked rock, sherds, etc.) on the surface is not always, maybe only rarely, congruent with the variety of activities making up a domestic, ritual, extracting, or staging area location.

Where surface visibility is restricted by vegetation, the placement of additional subsurface units is an acceptable alternative. The subsurface testing strategy should incorporate the results of Phase I testing and employ additional tests to define the site boundaries to within 5 m. A suggested strategy is to place tests at larger intervals (15 m or less) in a grid or radial arrangement

expanding from the previously defined site area until artifact counts indicate the approximate limits of the site. Additional tests at 5 m intervals or less should then define the site boundaries.

Alternative strategies may be appropriate in certain cases. Such strategies are welcomed if explicitly justified and discussed prior to initiation with the Ohio Historic Preservation Office. Portions of the boundary definition may be combined with procedures to address other Phase II concerns (e.g., location of features, stratigraphy, and artifact distribution).

- b) **Artifact Distribution.** The choice of methods to define artifact distribution will, in part, depend on local conditions and the character of the site. While alternative methods are welcomed, if justified, the common basic techniques and standards include one or more of the following:
- (1) Intensive surface collection usually involves a combination of a walkover of the site area at small intervals (5 m or less) and intensive collection of a systematic sample. Intensive surface collection must also include plotting the artifacts found. These procedures rely on adequate surface visibility. Replowing is appropriate only if it can be ascertained that the topsoil has been disturbed by plowing or other action. Where the potential for an undisturbed topsoil exists, other sampling procedures should be used (see Stratified Random Sampling and Systematic or Intentional Sampling on pages 72-74).
 - (2) An intensive walkover and piece-plotting of surface artifacts (exact provenience) is another technique. Artifact locations should be plotted on maps (using transit and tape) and the artifacts collected and stored by provenience unit (tied to a permanent datum and grid system).
 - (3) Another technique is the systematic collection of artifact samples. Collection is generally either from provenience units no smaller than 2 m x 2 m in a regular grid system. This may be a particularly appropriate procedure for large sites.

- c) **Feature Identification.** The relative importance of features to the determination of site significance will vary from site to site. The presence of features is not always essential or sufficient to define a site as eligible for National Register listing. The investigator must consider and explicitly define the importance of features to a determination of significance. This decision will guide the choice of methods and techniques. Again, several techniques exist to discover and characterize features. The use of one or more of these techniques will depend on several considerations: site area, stratification, topography, environmental features, Phase I survey results, and other sources of information (collector information, accidental natural exposures of in situ features, etc.).

All sources of possible information on the presence and location of features must be considered in selecting a testing procedure. If no such information exists and no implications may be drawn from topography and environmental features, a random sampling procedure may be appropriate to reliably demonstrate the probability of the presence or absence of features. Where such information exists, expectations as to the number and density of features should be used to plan the testing procedure. Systematic or intentional testing may be appropriate.

- 1) **Stratified Random Sampling.** Where no indicators exist as to the probable number or location of features, the investigator must make an attempt to define statistically the adequacy of testing and the probability of feature occurrence. A number of studies evaluating the efficacy of sampling strategies can be found in the literature.

Several points about stratified random sampling must be emphasized:

- (a) This approach is appropriate only where the setting of the site and previous results provide no indication as to the presence or location of features.
- (b) If features are encountered during this sampling procedure the question of their presence or absence has been answered and a

mean and standard deviation for the frequency of features may be calculated. It is, therefore, not necessary to complete the defined number of tests in order to define the probability of features being present in the site. If no features are encountered, the possibility remains that one or more features may exist within the universe sampled.

- (c) The selection of an appropriate confidence level and definition of a “few” features in order to determine an appropriate sample size should be made with the probable significance of the site in mind. Thus, several factors may influence the sample size: site size (area); the date and cultural affiliation of the artifact assemblage and the presumed date and significance of the site in the regional settlement system; and available information on comparable sites. The advice of Ohio Historic Preservation Office staff should be sought if any questions arise.
 - (d) In general, Phase II testing should not disturb the site more than is necessary to determine National Register or other eligibility. Since this sampling approach tests a greater percentage of the area of small sites than of larger sites, it is appropriate to select a sample size smaller than 20% of the total site area.
 - (e) This approach assumes no particular test unit size and, in fact, is independent of unit size. Any test of a size that permits the identification of features may be used. In general, test units should be at least 1 m x 1 m to allow the identification of features.
 - (f) This approach will also provide a means of obtaining a representative artifact sample and representative stratigraphic profiles. Test units should be excavated, therefore, by strata and with all soils screened through ¼ inch mesh.
- 2) **Systematic or Intentional Sampling.** Systematic or intentional testing schemes should be designed on the basis of available information regarding features. The purpose of this testing is to obtain a representative sample of features and information regarding their distribution within the site. Sample size will be determined by

known or expected feature distributions based on available information. Relevant factors will, therefore, include: site area, topography and environmental features, soils, expected feature size and distribution, disturbance, etc.

Test unit size should be selected with the above factors in mind, but units must be at least of a size to permit positive identification of features (1 m x 1 m minimum). Test unit placement or intervals in a systematic sample will be determined on the basis of the above factors and sample size.

In general, sample size and sampling strategy must be justified in terms of the available information on features. Sample size must be determined by an explicit testing design including a consideration of the factors listed above. A sample size should be chosen which will result in the testing of each defined sub-area within the site and which will yield quantitative statements on feature occurrence.

- 3) **Mechanical Topsoil Removal.** Where it can be demonstrated that topsoil has been disturbed (by plowing or other means), the mechanical removal of topsoil to expose features may be appropriate. This technique should only be used following the systematic collection of an artifact sample, and where the information derived from material contained in the plow zone is insufficient to establish a site's significance.

This, like the procedures described above, is a sampling procedure and should be explicitly justified in terms of the available data. A systematic, intentional, or random sampling design may be used (see (a) and (b) above), but the chosen design must be justified and produce statistical results. The number, size, and placement of mechanically stripped test units will be determined by the appropriate sampling design. Mechanical stripping of the topsoil must be followed by hand-excavation with shovel, hoe, trowel, etc., to clean the subsoil surface and expose features. Mechanical stripping should stop when sufficient information is obtained to warrant a recommendation that a site is significant.

As noted above, since sampling for archaeological features by mechanical topsoil stripping does not produce a controlled artifact collection, this procedure must always be used in conjunction with and following the systematic collection of artifacts by other means. In plowed fields with adequate visibility, intensive surface collection (see Artifact Distribution on page 71) may be used. Where vegetation obscures the surface, and plowing, disking, and washing is not possible or not convenient, intensive testing may be substituted. The observed distribution of artifacts will be a factor in determining the distribution of test units. Mechanical topsoil removal on historic sites is discussed in the section on Historic Feature Identification on pages 81-82.

- 4) **Remote and Indirect Sensing Techniques.** Resistivity, magnetometers, sonar and radar scans, chemical tests, and other remote or indirect sensing techniques have been refined and used with considerable success in certain cases. The success of these techniques however, is highly dependent on several factors: bedrock and soil conditions, feature size and composition, the depth of features, as well as the skill and sophistication of the user. Although remote sensing techniques may prove, in certain instances, an efficient means to obtain information on feature distribution, cost and efficiency must be weighed against the reliability and completeness of the results. Remote sensing techniques do not allow for the characterization of features and must, therefore, be combined with a program of selective excavation or exposure of features. They complement rather than replace subsurface testing. Certain conditions — bedrock at or near the ground surface, consistently or periodically high water tables, soils with hard pans, fragipans, gravel concentrations, and high iron contents — may preclude the use of these techniques.

The effective use of remote sensing techniques requires adequate provenience controls. When employed, these techniques must be used with an established grid system, preferably with small intervals between grid points (intervals of 1 m may be necessary for certain techniques). Investigators are to consult with both the Ohio Historic

Preservation Office staff and specialists in these techniques prior to their use.

- 5) **Feature Characterization.** To ensure comparability of results, certain procedures are to be applied in the treatment of archaeological features encountered in Phase II testing:
 - (a) Prior to excavation, features are to be troweled and cleaned to expose them completely, mapped in plan view, and photographed.
 - (b) Features are to be sectioned and profiled by hand to reveal contours and stratigraphy. Profile drawings and photographs should be made.
 - (c) If stratified fill is apparent or suspected, the feature is to be excavated in natural stratigraphic levels or appropriate arbitrary levels (10 cm or less), with plan drawings and photographs, as appropriate.
 - (d) A sample of fill not less than 3 liters in volume is to be recovered from each feature for flotation (see below) or from each discrete level within a feature. The Ohio Historic Preservation Office recommends that 25-50% of the fill from each feature be collected for later sampling, flotation, and analysis (100%, if less than 3 liters).
 - (e) A control sample of fill, not less than 3 liters in volume, is to be recovered from off-site. The information on location and results of analysis must be included in the report.
 - (f) All features are to be assigned unique and consistent feature numbers.
 - (g) All artifacts recovered from features are to be bagged and labeled by provenience unit and feature number.
- 6) **Stratigraphy.** Stratified archaeological deposits are crucial to the definition of regional chronologies and cultural relationships. Documenting the potential for stratified deposits at a site will be a primary concern in Phase II testing. This will frequently occur in

conjunction with other procedures (e.g., those designed primarily to sample artifact distribution or locate features). In many cases, the potential for stratified deposits will have been established during Phase I testing, in which case Phase II procedures will simply confirm that potential and document the extent of such deposits. Regardless of the details, Phase II studies must enable the investigator to make definitive statements regarding the presence and extent of stratified deposits and to discuss the relationship of stratification to National Register eligibility.

The investigation of stratigraphy should involve a consideration of both the potential for stratified deposits — a characterization of the geomorphology of the site — and the field results documenting this potential. Supplemental geomorphological investigations may, therefore, be an important part of Phase II testing, especially where there are indications of alluvial, colluvial, or aeolian soil deposition, or in rockshelters with substantial soil deposition.

In any case, field testing should include sampling of the soil through Holocene levels to document the presence or absence of stratified deposits throughout the site. The number and placement of such tests will depend on the pedological characterization of the site (i.e., the pattern of soil deposition, erosion, and development). Field results may be obtained from columns excavated while testing for features and artifacts, but must convincingly document the presence or absence of stratified deposits and their distribution across the site.

- 7) **Dating.** The dating of archaeological components at a site is an essential condition for evaluating site significance. In most cases, the artifact assemblage resulting from surface collection and test excavations will contain some temporally or culturally diagnostic artifacts and permit at least a preliminary dating of the site or some of its components.

Dating on the basis of diagnostic artifacts is often not precise. There is considerable uncertainty regarding the precise dates of many artifact styles commonly considered time markers. Certain

artifact types considered diagnostic of a particular period may, in fact, have been made and used through several culture historical periods. Artifacts may be assigned to a certain class incorrectly. Diagnostic artifacts may be found in general surface collections or in questionable association with cultural features. These problems and others beset the use of artifacts as time markers.

Perhaps the most glaring problem is the absence of diagnostic artifacts from sites which might otherwise be considered significant. Sites with abundant features, faunal and botanical remains, or human skeletal remains may have few or no diagnostic remains.

The Ohio Historic Preservation Office recommends that diagnostic artifact dating and stratigraphic relationships be confirmed or cross-checked with some absolute dating technique. Where diagnostic artifacts are absent but the site is otherwise potentially significant, it is essential that an effort be made to date the site absolutely.

The most common, most reliable, and least expensive absolute dating technique, and the one most appropriate to the environmental and archaeological conditions of Ohio, is radiocarbon dating. Phase II investigations should include plans for the collection of carbon samples from features encountered, regardless of which samples or how many are to be processed. Radiocarbon dating should certainly be pursued in investigations during which no diagnostic artifacts are discovered or in which the sample of diagnostics is small or derives from questionable contexts. The Ohio Historic Preservation Office encourages radiocarbon dating for the purpose of evaluating the sites tested and for establishing regional chronologies. Experimentation with alternative absolute dating techniques, such as thermoluminescence, hydration of glasses or cherts, and archaeomagnetism techniques is encouraged.

- 8) **Botanical/Faunal Specimens.** The potential of an archaeological site to offer data on environment, subsistence, and diet is largely dependent on recovery and analysis of samples of animal and plant species contemporary with and used by its human occupants. The identification of this potential will, therefore, be one of the primary concerns of Phase II studies. Unless the site is stratified, the collection

of samples from general contexts (i.e., not from definable features) will not be productive. Therefore, attention should be focused at most sites on the retrieval of faunal and botanical remains from features through screening ($\frac{1}{4}$ inch mesh or finer) and flotation. The flotation technique has been extensively discussed in the literature and will not be described here. Any of the several standard techniques and types of apparatus are acceptable, if consistently applied and fully described in the report.

At stratified sites, potentially significant information may be gained from the analysis of carefully excavated and provenienced columns. Flotation of the soils from such columns should be planned for stratified sites, in addition to the flotation of feature contents. In general, such columns should be at least 30 cm x 30 cm in cross-section to provide sufficient volumes of soil for flotation, and may be taken in conjunction with soils samples for pedological or geomorphological analysis.

Analysis of flotation samples during Phase II investigations is oriented toward the demonstration and definition of research potential as a condition of National Register eligibility. The analysis, therefore, will not be exhaustive or detailed, beyond the level necessary to define research questions which might be addressed by data from the site. Sorting of specimens to the generic or specific level and counts of specimens should permit the development of research questions. Such analysis may require the services of a specialist or the careful use of an adequate type collection.

- 9) **Human Remains.** Analysis of human remains during Phase II investigations is oriented toward the demonstration and definition of research potential as a condition of National Register and/or State Registries eligibility. The analysis, therefore, will not be exhaustive or detailed, beyond the level necessary to define research questions which might be addressed by the human remains and other associated artifacts found as a result of the investigations. Basic human osteological analysis should permit the development of research questions. Such analysis often requires the services of specialists. Note that the principles outlined in the Introduction of the *Archaeology Guidelines* apply.

2. Historic

- a) **Boundary Definition.** In addition to the techniques which were described for prehistoric sites above, factors peculiar to historic sites may necessitate modified procedures. Background documentary research may indicate probable boundaries for these sites and tie them to visible natural or artificial features. Even in the absence of documentary information such features may suggest limits to historic sites.

The problem of boundary definition in the historic situation is the defining of the relevant archaeological unit, the site. The boundaries of historic archaeological resources often coincide with the features of the landscape, i.e., historic property lines, streets, political or traditional boundaries, etc. Consequently, documentary research and analysis of landscape features are of major importance in determining the limits of historic archaeological resources. With limits defined prior to field investigations, fieldwork designed to define boundaries is usually unnecessary or is limited to documenting the presence or absence of features within the defined limits of the site and may occur in conjunction with fieldwork for other purposes.

- b) **Artifact Distribution.** Although all the techniques previously described for prehistoric sites may be applied to historic period sites, it is to be expected that documentary evidence on the size and internal organization of historic sites will guide the artifact collection strategy.

The treatment of surface sheet deposits of historic period artifacts will be guided by the available background information and the possibility of associating these deposits with a particular activity or dating them to a particular period of interest.

Use of mechanical stripping on historic sites should be undertaken only after a detailed sampling plan approved by the Ohio Historic Preservation Office has been developed and implemented. Since many of the research questions that are associated with historic sites deal with the use of all the artifacts, such as minimum vessel count and status inference, those artifacts contained in the topsoil/plowzone strata must be considered. Mechanical topsoil removal on historic sites

must include a means of recovery of the information contained within that topsoil/plowzone layer. This strategy must be developed in consultation with the Ohio Historic Preservation Office and must be site-specific based on the results of the locational and document research already completed.

- c) **Feature Identification.** All the techniques described for prehistoric sites may be applied to historic sites. However, the availability of information for historic sites on feature type and distribution will generally suggest a systematic or intentional sampling strategy. The larger size and more substantial nature of many historic period features (e.g., foundations, wells, privies) make the use of remote sensing techniques in conjunction with selective subsurface testing appropriate in many cases. There are, however, limitations to the use of these techniques, as noted above. Environmental conditions, as well as the expected nature of features, must be carefully considered in deciding whether to employ these techniques.

- (1) **Feature Characterization.** The typically more substantial character of most historic site features, the standardization of many later artifact and feature types, and the availability of documentary evidence will influence the treatment of historic site features. Documentation through photographs and drawings (plan and profile views) at each stage of exposure, cleaning, and excavation is essential. Various historic site features (foundations for example) will require an approach to excavation modified from that described for prehistoric sites. Whenever possible, however, the general approach used for prehistoric sites should be applied to historic site features. That is, expose the feature, first in plan, then in profile where possible; identify the stratification and excavate the feature by natural strata, if present, or arbitrary strata, if stratification is suspected; then collect (by strata) a sample of soil for flotation and analysis. The sample size for flotation should be at least 3 liters (or 100%), although the soil sample collected may be less than 25-50%, if the context and comparative data suggest that a large sample would be redundant or unproductive. Within stratified features this sample must be taken from each strata.

Sealed features that may contain large quantities of artifacts, such as deep privy or well shafts, may not require complete excavation at the Phase II level. The emphasis in this phase should be on the recording and evaluating of such features. The assumption is that many such features will contain large quantities of artifacts, some of which may provide significant information if excavated. As there is no practical way to test the entire depth of a well or privy shaft, at the Phase II level of investigation it may be appropriate to excavate them down to the beginning of (into but not through) archaeologically significant levels.

- (2) **Stratigraphy.** The general approach suggested for prehistoric sites, outlined above, applies to historic sites as well.
- (3) **Dating.** The accurate and precise dating of historic period components is usually an essential aspect of evaluating site significance. Sites should be dated using ceramics, glass, and other datable classes of artifacts as well as using historic records. And, radiocarbon dating may be employed for early historic sites. Each of the principal components of a historic site should be dated.
- (4) **Botanical/Faunal Specimens.** See discussion of botanical and faunal specimens under Phase II field investigations for prehistoric sites on page 78.
- (5) **Human Remains.** See discussion of human remains under Phase II field investigations for prehistoric sites on page 79.

3. Urban

Phase II work in the urban setting should be undertaken to define and evaluate preserved archaeological components, to assess the research potential (e.g., stratification, artifact content, environmental data), and to determine integrity.

- a) **Boundary Definition.** The problems encountered in defining the boundaries of an archaeological resource in an urban situation are similar to those described for historic situations. The site in question may be a single-event feature, a property, or a city block. The spatial limits of urban archaeological deposits are not usually defined by the same parameters that set the boundaries of non-urban sites. The

boundaries of urban archaeological resources (except prehistoric or historic period Indian sites within currently urban settings) often coincide with established physical features of the urban landscape such as historic property lines, streets defining a block, and political or traditional boundaries that define a neighborhood.

- b) **Field Investigation.** Constraints imposed by urban conditions and the results of documentary research will be important factors in the development of the research design appropriate to individual projects. The same goals outlined for prehistoric sites apply to urban sites, but the techniques used will vary. The minimum level of fieldwork necessary for a Phase II investigation in the urban environment includes the following:
- (1) An adequate sample size and valid testing strategy that take into account the full nature and extent of the anticipated resources must be developed in consultation with the Ohio Historic Preservation Office.
 - (2) The sample will be primarily non-random. That is, the location and size of test units will be based on available documentary evidence and current site conditions.
 - (3) The objective should be to delineate the presence and distribution of architectural evidence, site stratification, and features, and the ability of this evidence to provide significant information when interpreted in conjunction with documentary evidence.
 - (4) Sealed features that may contain large quantities of artifacts, such as privy or well shafts, do not require complete excavation at the Phase II level. The emphasis in this phase should be on the recording and evaluating of such features. The assumption is that many such features will contain large quantities of artifacts, some of which may provide significant information, others of which may not. As there is no practical way to test the entire depth of a well or privy shaft, at the Phase II level of investigation it may be appropriate to excavate to the beginning of (into but not through) archaeologically significant levels.

- (5) The use of mechanized equipment such as backhoes, graders, front-end loaders, pneumatic drills and the like, may be desirable for efficient exposure of archaeological sites or portions of sites, where extensive fill can be documented. The significance of the fill itself must be determined as part of the Phase II investigation. Emphasis should be placed upon the reasonable and judicious use of mechanized equipment as a practical aid in conducting timely and cost-effective archaeology in the urban environment. This equipment is a complement to, not a substitute for, more traditional archaeological field methodologies. The choice of when to employ mechanical or hand excavation techniques in urban archaeological settings must be carefully considered so as to optimize the achievement of the overall goals and purpose of the testing program. The proposed work plan should provide justification for the field methods selected.
 - (6) Careful examination of hand or machine excavated soil matrices should always be undertaken.
 - (7) Drawings and photographs should document each step of the excavation procedure. A representative selection of these should be planned for use in the final report.
 - (8) Safety precautions should be taken at all times. Nothing in these guidelines is intended to require unsafe working conditions.
- c) **Special Circumstances in Urban Settings.** If the proposed project is a Section 106 undertaking and it is likely to disturb significant resources which have not been identified, a conditional determination of No Adverse Effect may be made providing that:
- (1) the agency, applicant, or developer agrees to sponsor a professionally conducted and planned pre-construction testing program developed in consultation with the Ohio Historic Preservation Office.
 - (2) should significant resources be identified, the agency, applicant, or developer agrees, in consultation with the Ohio Historic Preservation Office, to sponsor a professionally conducted archaeological data recovery program, coordinated with site

clearing, demolition, or construction. The data recovery program must follow the standards of the *Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation* issued pursuant to the National Historic Preservation Act, and the guidelines of the Advisory Council on Historic Preservation contained in *Treatment of Archeological Properties: A Handbook*.

- (3) the agreement must be contained in writing in an exchange of letters or a Memorandum of Agreement with the involved agency, the Ohio Historic Preservation Office, and for federal projects, the Advisory Council on Historic Preservation. The agreement must contain a procedure to be followed should the Ohio Historic Preservation Office and the involved agency not be able to agree on the significance or treatment of any resources identified; and
- (4) the archaeological work is based on a planned detailed written research design developed in consultation with the Ohio Historic Preservation Office and the Advisory Council on Historic Preservation.

In fact, archaeological investigations under the provisions noted above may not develop as distinct or discrete phases of work with a normal reporting and review period. Rather, they may require constant feedback from the field investigations and close coordination with the Ohio Historic Preservation Office. The nature of the program, in fact, may require rapid decisions on the part of the sponsor and the Ohio Historic Preservation Office, with the significance of the emerging data allowing for either an increase in the work effort or a decrease of the program if few significant archaeological resources are present. A finding that no property eligible for inclusion in the National Register will be affected by the project may lead to the termination of the program of fieldwork. If, on the other hand, field testing strategies are either increased or substantially altered, the project has, in essence, entered into the Phase III data recovery phase.

- d) **Monitoring.** While in some cases legal responsibilities for the preservation of archaeological resources can be accomplished through a carefully planned survey with a contingent data recovery program during construction, monitoring, as usually conducted, is never acceptable. Monitoring is usually defined as the stationing of an

observer to identify archaeological resources revealed during construction as a substitute for a planned survey program. This type of monitoring does not meet agencies' legally-mandated responsibilities to identify all significant resources, to consider the effect of their projects on them, and to provide the Ohio Historic Preservation Office and the Advisory Council an opportunity to comment. Such monitoring frequently leads to the unnecessary loss of significant resources, increased administrative conflict, expensive construction delays, and greater data recovery costs.

C. Analysis

Analysis for Phase II studies should specifically address the potential of the site to yield significant information. In general, more extensive analysis than that performed at the Phase I level will be necessary. Both the types of information potentially available from the site and the methods appropriate to their recovery must be defined. The precise nature of the analysis required will thus be determined on the basis of the character of the site and its research potential. However, certain standard minimal types of analyses may be defined:

- The tabulation of all artifacts and ecofacts by type and by provenience unit, stratum or arbitrary level, and feature.
- The categorization of artifacts and ecofacts in a manner that allows for comparisons with other sites and collections. For stone tools this includes, at a minimum, classification by functional/technological/morphological type and raw material. For ceramics classification should reflect type/ware and temper. For floral and faunal specimens an attempt should be made to classify by taxon (genus or species) and structural part or form (e.g., long bone, scapula, scales, nut, etc.)
- Appropriate techniques should be used to assess site structure.
- When available, flotation, phytolith, and constant volume samples should be analyzed to define research questions and potential eligibility.

- Carbon samples should be analyzed if this technique will appreciably improve the reliability of site chronology or help to define site research potential.
- If Phase II testing results in a recommendation for Phase III investigations, specific research questions and justification must be presented in the Phase II report.

Phase III

A Sample Outline for a Data Recovery Project

When an archaeological site that is listed on or eligible for the National Register of Historic Places and/or the State Registries will be adversely affected by a federal undertaking, mitigation of effects through data recovery may be necessary. In general, data recovery involves relatively large-scale excavations, detailed laboratory analysis, and the production of reports containing significant archaeological findings. Previous Phase I and II studies may indicate some of the types of information to be sought, however sponsors and consultants should seek to identify and recover other categories of information as well. It is essential that Phase III research designs be developed in consultation with the Ohio Historic Preservation Office and reviewed by the Advisory Council on Historic Preservation.

A sample outline for a Phase III project is as follows:

- A. Goal: To recover the significant data contained within a site through archaeological excavation as a mitigation alternative prior to the total or partial destruction of a site by the undertaking.
- B. Procedures to Achieve Goal
 1. Maximize data retrieval through the use of an explicit research design.
 2. Determine intra-site and inter-site variability in artifact content, feature types, settlement patterns, etc.
 3. Disseminate recovered information through reports, publications, lectures, exhibits, and/or tours for the public and professional community.

C. Background Research Activities

1. Formulate hypotheses to be tested.
2. Define suitable excavation strategies with assistance from pertinent participating agencies, such as the Ohio Historic Preservation Office, National Park Service, Advisory Council, etc.
3. Summarize previous work.
4. Analyze collections from site.
5. Use as many of the literature and documentary resources enumerated under Background Research (pages 55 and 66) as are relevant.

D. Field Procedures

1. Conduct systematic excavation resulting in recovery of a representative and comprehensive sample of the site. For certain projects, an intensive sample of less than 100% of the site or that portion of the site in the right-of-way may be acceptable.
2. Excavation may be limited to the project right-of-way. For certain projects, inclusion of an excavated sample of areas outside of the project right-of-way may be recommended.
3. Some of the methods described under Field Investigation (pages 60 and 68) may also be applicable.
4. Use state-of-the-art methods necessary to maximize data collection regarding stratigraphy, features, artifacts, etc.

E. Artifact Analysis

1. The procedures described under Analysis on pages 65 and 86 are applicable.
2. Employ appropriate procedures for special artifact analysis and dating techniques, such as radiocarbon and thermoluminescence, residue analysis, artifact composition analysis, etc.
3. Test hypotheses and report results in an appropriate scientific manner.
4. Describe significance of information to understanding of Ohio archaeology.

- F. Report Standards (cf. Section Three of the *Archaeology Guidelines*, page 25).
- G. Dissemination of research results to the public through popular publications, slide shows, videotapes, exhibits, etc.



Ohio Historic Preservation Office
