## COUNCIL OF TEXAS ARCHEOLOGISTS
## GUIDELINES FOR PROFESSIONAL PERFORMANCE

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## 1. Preamble

The following guidelines deal with the planning and conduct of archeological investigations of cultural resources—including prehistoric, historic, and historic architectural sites--and associated research and analysis. Since high levels of archeological performance depend on preinvestigative planning, implementation of field studies, and reporting of scientific results and resource management decisions, a number of criteria should be considered in any study. Some of these criteria involve adherence to principles of professionalism, while others require completion of specific tasks prior to, during, and after archeological projects. While these guidelines are aimed primarily at professional and vocational archeologists, they are intended also to be of use to nonarcheologists and nonarcheological organizations, and to governmental bodies that evaluate and award contracts, in meeting their responsibility to treat wisely the state's archeological heritage. In this sense, then, these guidelines complement existing federal and state agency regulations and procedures relevant to performance standards. It is essential that contracting parties be familiar with all applicable federal, state, and local laws as well as agency regulations and procedures to ensure that the performance of both the agency and contractor is of high quality and in full compliance with all applicable laws.

## 2. Preinvestigation Standards and Procedures for Planning Data Recovery

Conduct of modern archeological research entails responsibilities to many entities: the public, the archeological profession, and private and governmental agencies. Archeologists today are coping with increasingly complex and sophisticated endeavors. We are faced with the difficulty of designing and implementing responsible projects within the constraints imposed by specific legal requirements. This difficulty is often compounded by the competitive nature and cost considerations of project proposals. The following guidelines have adopted the principal that it is in the public interest that cultural resource management projects require a well thought out research commitment to ensure the widest public dissemination of information. Research designs must strive to meet the objectives both of scholarly research and protection of nonrenewable cultural resources. Research designs must be explicit and

comprehensive plans for solving a variety of realistic problems of social and scientific interest. In addition they must assure the incorporation of professionally competent personnel and the widest possible range of current and appropriate theories, methods, techniques, and useful data. A well reasoned research design will help ensure that progress will be demonstrated in answering the stated research questions, but should be flexible enough to encourage creativity, innovation, and justifiable revisions. Ethical considerations of confidentiality and fair access to information must be considered. Finally, the role of effective peer review is emphasized as an important quality assurance mechanism.

## 2.1 Research Designs

Research designs prepared prior to implementation of a field study are essential to the success of scientific objectives, resource management decisionmaking, and project management. The Airlie House Report (McGimsey and Davis 1977:72-73) offers a brief but useful set of considerations pertaining to research designs. In addition, the following points must be considered during formulation of a research design.

**2.1.1** Research designs present the essential objectives of a project or study and the means by which those objectives will be attained. As such, the research design is an efficient means of communicating with resource managers and the professional community at large.

**2.1.2** The research design provides a logical basis for detailed project planning and assessment of resource significance.

**2.1.3** Research designs may contain a wide range of theoretical and methodological approaches. Similarly, research designs may address quite general research objectives, as well as more focused types of problem orientation. The following criteria must be met:

**2.1.3.1** Care must be taken to link the research design to existing topical and geographical bodies of data.

**2.1.3.2** The nature of the resources under investigation must be considered.

**2.1.3.3** The need to address a wide range of cultural and scientific resources must be considered.

**2.1.3.4** Applied research that addresses cultural resource management and impact-related issues should be recognized as necessary and incorporated into research designs whenever possible.

**2.1.3.5** The skills of the investigative personnel must be appropriate to the project goals and specifications in the research design. In many cases it may be desirable to include provisions for consultants with special expertise.

**2.1.4** Research designs should not be conceived as rigid, unchanging plans. Although research designs may place relatively greater emphasis on certain kinds of scientific questions and certain kinds of data collection, as circumstances warrant, the investigator is not relieved of responsibility to recognize ongoing research. Whether such alternative questions and data warrant changes in the ongoing investigation is a question that should be explicitly addressed and answered in the context of pertinent resource management objectives and research goals.

It is expected that research designs will be modified as projects develop. A conscious effort should be made to modify research designs to efficiently exploit new information. It is to be

expected that some research objectives will, for many reasons, prove less productive than anticipated, while other objectives will become more important than anticipated or perhaps materialize for the first time. The crucial objectives in the modification process are:

1. Demonstrated progress in solving stated problems, and
2. Successive modification of a research design on the basis of explicit, rational decisions intended to attain stated goals (see Performance Guidelines 4.1.5).

**2.1.5** State and regional historic preservation plans should be taken into account to the greatest degree possible; at the same time essential investigative flexibility and creativity should be preserved. This can be achieved by designing research around important scientific and preservation objectives.

**2.1.6** Serious consideration should be given to peer review of research designs prior to implementation, because research designs are a fundamentally important element in helping to assure the success of a project. Peer review can contribute to the development of research designs that are pertinent to the resources at hand, operationally feasible, and based on meaningful research and resource management objectives.

**2.1.7** Whenever possible, research designs should refer to and reflect pertinent successful research designs for geographic regions and topics. Guidelines on research design, such as the Airlie House report on cultural resource management, are also useful references in designing research. At the same time, however, it is important to remember that archeology and cultural resource management are rapidly evolving fields, and substantial creativity, rather than rote imitation, is called for in planning research.

## 2.2 Operationalizing Research Design

Proposals must make explicit how the research design will be implemented. They should consider the following:

**2.2.1** Personnel to be involved in the project should be identified and their primary duties outlined. The amount of time that will actually be spent on the project and tasks to be performed by principal personnel, including the Principal Investigator, should be specified.

**2.2.1.1** Participants in the project should be clearly identified as resident, full- or part-time employees of the entity offering a proposal or as consultants to be brought in specifically for the project.

**2.2.1.2** The proposal should indicate the following for all prospective consultants to be brought in for a task:
1. Whether the consultants have been notified that they are part of the proposal, and
2. The specific terms of their agreement with the entity preparing the proposal.
Participating consultants should never be named in a proposal without their prior agreement, and such agreement should be specific to the project being proposed.

**2.2.2** Detailed time estimates in terms of person-days, person-hours, or person-months tied to specific skill levels are appropriate and useful ways of structuring cost estimates for comparison. These should be included in documents intended for circulation, peer review, and reference. Specific figures on current salary levels or the dollar cost of consumable supplies such as gasoline are too dynamic to be of much use in such documents. The private and proprietary nature of salary figures also dictates the use of the more comparable figures outlined above.

**2.2.3** Plans for literature and background research must be outlined (see Performance Guidelines 3).

**2.2.4** Plans for gaining access to privately held land, if these lands constitute a large part of the project area, must be considered. No action should be taken on access to private lands before a contract or grant is awarded unless there is prior agency approval.

**2.2.5** Since artifacts and records are the permanent scientific and cultural data base of archeology, it is essential that these be preserved. The following points should be considered:

**2.2.5.1** Collection of artifacts in the field. The basis of the decision as to whether or not artifacts will be collected should be specified, and the disposition of artifacts that are collected and their documenting records should be indicated.

**2.2.5.2** Problems of the ownership of collections. Attention should be given to the questions of who will retain ownership and how ownership will be assigned.

**2.2.5.3** Curation arrangements for artifacts and records. Arrangements must be completed prior to field work. Curation costs are widely recognized as a legitimate project expense and should, whenever appropriate, be included in project budgets (see also Curation Guidelines).

**2.2.6** Provision for publication and distribution of reports is an essential part of project planning (see also Report Guidelines 1). Several factors deserve attention here:

**2.2.6.1** Project sponsors should understand that publications or other means of distributing project results are an integral responsibility of cultural resource managers and that they aid in archeological resource management. Routine adherence to this need by investigators will remove an undue competitive advantage to those who do not seek to distribute information in order to cut costs.

**2.2.6.2** The archeologist should emphasize to the project sponsor the public relations value of bringing archeological information to a wide public and professional audience; whenever possible, publication costs should be included in the project budget.

**2.2.6.3** Distribution lists should be carefully compiled to ensure maximum availability of information (see handbook on the distribution of cultural resource management reports). At more modest levels of funding, reports can be made available at reproduction cost. Lists of available reports can be circulated to prospective users.

**2.2.7** Distribution of information that is of public interest is another vital concern that should be considered during project planning. Too often, results of archeological work do not reach the public. Attention should be given to means of bringing information directly to public entities. These means may include popularized reports, films, public lectures to local historical and archeological groups, news releases to the media, development of displays or materials for museums, and other measures.

**2.2.8** Provisions should be made for communicating regulations, procedures, research objectives, and other vital information to project personnel and to the appropriate agencies.

**2.2.9** Plans should be made for coordinating project progress with all concerned entities. Plans should stipulate whether coordination will be achieved through scheduled meetings, reports, and/or visits.

**2.2.10** Proper credit must be given to the authors of reports, papers, articles, books, and other scholarly works used in a research plan or other project document.

**2.2.11** Compensation for potential damage to crops or other sources of landowner livelihood should be included in the project budget.

## 2.3 Professional Review of Proposals

While it is increasingly recognized that professional, or peer, review of investigative reports is an important mechanism for improving the quality of professional performance, public agencies and private companies should also give consideration to professional review of candidate proposals. It should be emphasized that it is clearly to the advantage of the funding entity--and whenever feasible, the prospective contractor--to get meaningful professional reviews. These reviews not only help in planning a successful project, but also provide a useful source of professional protection for both the agency or funding entity and the archeologist should controversies arise later about the adequacy of project planning and results. Funding reviews should not be a significant problem in most cases. In contract projects, where thousands of dollars are frequently allocated for professional services of various kinds, the cost of paying for a useful, timely review is a quite small fraction of total expenditures.

**2.3.1** All proposals merit critical review. However, special consideration must be given to those proposals for projects that, because of their size and/or nature, have the potential for adversely affecting significant cultural resources. Such projects may:
1. Involve expenditures of tens of thousands of dollars, or
2. Encompass areas that are known or justifiably believed to contain significant cultural resources.

**2.3.2** The most satisfactory reviews can be obtained from archeologists and historians who are qualified to comment on the topical and geographical issues at hand, and who have no vested interest in the entity preparing the research plan.

**2.3.2.1** Sufficient lead time should be allowed for having proposals reviewed. This point should be emphasized to entities wishing to have studies carried out.

**2.3.2.2** Reviewers should be impressed with the need to complete their work promptly. Since reviewers are expected to render a professional service in a timely manner, it is appropriate to pay for professional services rendered.

**2.3.3** Any member who accepts a peer review assignment is ethically precluded from bidding on the project. The reviewer is also specifically precluded from communicating any details of a specific proposal, or any comment thereon, to any third party other than the sponsor or, with the concurrence of the sponsor, the regulating agency.

## 2.4 Special Prefield Considerations

Prior to the beginning of field work, many matters must be attended to, including access to lands, housing for crew, logistical support, equipment, and supplies. Two important, but often overlooked, considerations are:

1. Coordination of all records, wherever previous work has been done in an area or at a site, in order to avoid duplication of any numbering system (see Curation Guidelines 2.4.10 and 3.2.5); and
2. Arrangements for confidentiality (see Report Guidelines 1).

The guiding objective is to bring information into the public domain.

**2.4.1** In some instances this objective may be in conflict with the project sponsor's need for confidentiality concerning the project. The archeologist should determine during preparation for field work if such factors are part of the anticipated work. If so, plans should be made to release information in a way that will not endanger legitimate interests.

**2.4.2** Access to data banks, site files, notes, and other forms of information also raises issues concerning confidentiality. Enlightened resource management, as well as scientific and scholarly advance, requires fair access to archeological information. This principle applies to both private and public institutions holding archeological information; to situations where individuals are undertaking traditional scholarly researches; and to situations where competitive bidding for contract projects is a factor.

## 3. Use of Existing Information

The eventual goal of cultural studies is to integrate information and to accumulate knowledge in order to explain human behavior. All phases of data recovery, from proposal preparation to analysis and report writing, benefit from effective use of existing information. Failure to incorporate in cultural resource studies all existing pertinent information may result in redundant or trivial research. An effort must be made to identify and evaluate all sources of pertinent information. Potentially useful information may come from a great variety of sources and will vary greatly in quality. Use of information derived from informants (regardless of the extent and form of the information) must respect the informant's right to privacy and must be properly referenced; all information derived from informants should be considered part of the project files. Ethical considerations involved in local history studies should be recorded in the project field records. Whenever possible, existing information should summarize current knowledge of cultural patterns and processes and should suggest avenues of future research. Information from all relevant disciplines should be integrated, where feasible, into all stages of a project. A literature and records review that is conducted as a separate project should meet these same general requirements.

### 3.1 Sources of Existing Information

**3.1.1** It must be recognized that sources of potentially valuable information are numerous and varied. For example, they can be published, written or oral, cultural or environmental, official documents or family records, collections of artifacts or observations about folkways.

**3.1.2** In addition to more traditional sources of information such as state and university repositories, specialists and locally knowledgeable persons should be consulted for their input in the design and execution of a project. Local historical societies, museums, libraries, and other local information sources should be investigated. Use of formal and informal oral history interviewing is encouraged in all stages of data recovery.

### 3.2 Identifying and Evaluating Sources of Information

**3.2.1** Documentary sources form an important part of the existing literature. The following points should be considered when using documentary sources during research in all phases of the project:

**3.2.1.1** Proper acknowledgements must be given to individuals authoring, as well as institutions holding, manuscript materials, field notes, etc., used in preparation of proposals and reports.

**3.2.1.2** Citations should be specific enough so that sources can be relocated easily. This will usually include the addition of information in the citation about the repository or private collection in which the information was located, as well as the particular collection within the repository in which the source was found.

**3.2.1.3** Bibliographies compiled for the project should be included in the project report. Bibliographies compiled for overviews should not only include specific locations to relocate materials, but should be annotated as well.

**3.2.1.4** When secondary historical or ethnohistorical sources are used, these should be identified and the limitations of those data discussed.

**3.2.2** Informants are often an invaluable source of local and regional information and should be included whenever possible along with more traditional sources of information in planning and executing a project. When using informants, the following points should be considered:

**3.2.2.1** When informants are used, this should be stated. An informant must be asked if he/she wishes to be identified. If so, appropriate documentation and reference must be provided when the informant's data are used.

**3.2.2.2** The procedures used to locate these persons should be stated.

**3.2.2.3** Tapes, handwritten notes, and other recordings of interviews must be considered part of the project files unless the informant has requested otherwise.

**3.2.2.4** No distinction should be made between casual conversations and formal interview situations when informant information is used. Permission to record and/or publish must be obtained in all cases, and in some cases it may be advisable to send draft copies of the transcript, synopsis, or excerpt to the informant(s).

**3.2.2.5** Since the use of informants in research may require special institutional review, release forms, or other legal considerations, it is the researcher's responsibility to ensure that these matters are addressed in the planning stage and properly implemented. (Numerous institutions in Texas have oral history programs and can provide advice and guidance in this area.)

**3.2.2.6** The ethical considerations involved in conducting local history studies should be carefully and thoughtfully addressed in all phases of the research. Ethical considerations and decisions should be recorded in the same manner as other research design decisions and field techniques.

**3.2.3** Existing collections constitute an important source of information, and they should be routinely used in background studies and in comparative analyses.

## 3.3 Uses of Existing Information

Whenever possible, existing information should be synthesized beyond the level of a generalized cultural-historical framework, such as Paleo-Indian, Archaic, Initial Historic Settlement, Spread of Historic Settlements, and so on. Rather, existing information should be used to summarize what is currently known about cultural patterns and processes, and to suggest opportunities to further our knowledge of these patterns and processes as they apply to the area of research.

**3.3.1** Information from such fields as botany, geology, zoology, soil study, wildlife management, geography, folklore, and other disciplines have a direct bearing on archeological and historical investigations and should be fully integrated into all stages of a project whenever feasible. In addition:

**3.3.1.1** Prior to going into the field, key staff (i.e., the PI and supervisors) should become familiar with natural factors and processes (such as modern land use, evolution of land forms, vegetation cover, etc.) that affect identification and interpretation of the archeological and historical contexts.

**3.3.1.2** When multiple cultural and environmental studies are being carried on in a project area, these investigations should be coordinated if at all possible. Minimally, there should be an exchange of information; ideally, reports should be cross-referenced and biotic collections shared.

**3.3.2** A literature and records review is frequently conducted as a separate activity to provide a preliminary inventory and assessment of the resources as well as an overview of a region or proposed project area (see Report Guidelines). Since these reviews fully constitute archeological/historical research projects and frequently set the stage for subsequent investigations, they should strive to:

**3.3.2.1** Identify all relevant information that makes it possible to relate the project area to meaningful cultural and environmental study units, as well as to cultural processes and temporal frameworks.

**3.3.2.2** Synthesize this information as discussed in Section 3.3 above.

## 4. Standards of Field Performance (Data Recovery)

The Principal Investigator has a responsibility to conduct field investigations in a manner that will add to the understanding of past cultures, develop better theories, methods, and techniques for interpreting the archeological record while causing minimal attrition of the Archeological Resource Base (SOPA). The Principal Investigator must meet the professional standards referred to below and has the ultimate responsibility for the overall quality of the project and for achieving the objectives of the research design. Deviations from those objectives must be justified. The Principal Investigator must assure that the data recovery effort is appropriate to the research questions and commensurate with the magnitude of anticipated attrition of archeological resources. Data recovery must be achieved in a manner that is compatible with accepted goals of archeological research and resource preservation; therefore, high standards of planning, data recovery methods, and responsible documentation must be strictly adhered to. It is the responsibility of the Principal Investigator to maintain these high standards, which include, but are not limited to, the following procedural matters: the availability, adequacy, performance, and safety of personnel; the availability of adequate and appropriate supplies and necessary equipment; data recovery techniques that are appropriate to the level and type of the project undertaken; detailed, intelligible documentation of all procedures; adequate bases and procedures for site evaluation; compliance with all permitting and legal requirements; and the promotion of the principle that preservation is preferable to mitigation through destructive data recovery.

## 4.1 Implementation of Data Recovery Projects

In implementing data recovery projects, the following general guidelines should be considered:

**4.1.1** The availability of adequate staff should be ensured. All projects will include:

**4.1.1.1** Administrative personnel who are responsible for fiscal control and services and general administration. In many projects these responsibilities would be combined with other responsibilities, usually those of Principal Investigator.

**4.1.1.2** A Principal Investigator who meets the professional criteria established by the Texas Antiquities Committee and who is responsible for implementing the research design and reporting the results. A PI must actively participate in each phase of the project, minimally spending 25% of contract time on each major phase as delineated in the contract agreement. For example, if the contract calls for 20 days of field work, the PI should minimally participate in the field for a total of 5 days.

**4.1.1.3** Supporting field, clerical, and laboratory personnel adequate in number and training to perform tasks required to complete the project as specified in the research design. In many cases, this will include consultants with expertise in disciplines relevant to specific projects.

On large projects additional staff may include:

**4.1.1.4** A Field Supervisor who meets the professional archeologist criteria defined by the Texas Antiquities Committee and who, under the supervision of the PI, is responsible for the day-to-day execution of the research design while in the field.

**4.1.1.5** Crew Chiefs, if different from Field Supervisor or PI, who have experience in the kind of work being performed and a demonstrated professional attitude.

**4.1.2** Personnel, including consultants, involved in all aspects of data recovery should understand the research goals and maintain close communications throughout the project.

**4.1.3** Adequate and appropriate supplies, field equipment such as vehicles, surveying instruments, cameras, tape recorders, maps, field guides, and other tools necessary for data recovery must be made available to project personnel.

**4.1.4** The project must comply with all appropriate legal provisions, including all necessary government permits and any agreements made with landowners or other persons.

**4.1.5** The developed plan of research should be followed, except to the extent that new data or unforeseen circumstances warrant its modification. Any significant modification in the research design should be reported to the sponsoring agency and, when appropriate, to the State Historic Preservation Officer (SHPO).

**4.1.6** Local values and mores should be respected, and project personnel should relate to these in a positive and professional manner.

**4.2 Reconnaissance and Survey**

Procedures for a reconnaissance or survey of a project, study area, or a site--be these relatively superficial and brief, intensive, predictive, or carefully controlled--must include the following:

**4.2.1** For safety reasons, a minimum field crew of two individuals is desirable; in any case, reasonable provisions for safety of field crew individuals must be made.

**4.2.2** All resources pertinent to the research design and, when practical, all sites encountered should be equally well recorded. For example, even in a specific problem-oriented survey (e.g., a Paleo-Indian study funded by the National Science Foundation), sites not pertinent to the research design should be systematically and carefully recorded whenever possible.

**4.2.3** All procedures used must be fully documented and detailed in field notes that are intelligible to others and reproducible. Ordinarily, field notes take the form of written records, drawings, and photographs. If magnetic tape is used, it should be transcribed daily and edited or, at the least, the information contained on the tape should be summarized and annotated in written form on a daily basis.

Minimally, field notes should include the following:

**4.2.3.1** Definition of what entails a site, what is minimal evidence, and why should be stated. Serious consideration should be given to isolated finds such as projectile points, mortar holes, pitted stones, flint flakes, and so forth.

**4.2.3.2** Frank discussion should be made of techniques used, the effectiveness as well as limitations of these techniques, problems of reliability, site visibility, projected impacts on sites, use of informants and private collections, and the like. Explicit details on how time was spent and personnel were allocated should be included in this discussion so that the intensity and areal coverage of the project can be meaningfully evaluated.

**4.2.3.3** Areas investigated should be delineated on the most accurate and detailed maps available, and when appropriate, on aerial photos. These delineations should be correlated with environmental features, conditions of visibility, and modern land use.

**4.2.3.4** Black and white as well as color photos should be made and should depict a wide range of sites and site settings as well as the diversity of the natural environment in the project or study area. Photographic logs that fully identify each picture (including the context and/or the circumstances under which it was taken; e.g., date, site, project) must be maintained.

**4.2.3.5** Collection of artifacts must be made in a systematic manner with minimal attrition to the site. The methods used must be documented in the field notes.

**4.2.3.6** If artifacts are not collected, there must be descriptions, drawings, and photographs that fully convey the range of variation and relative frequencies of observed specimens. Whenever possible, a scale or an object that conveys a scale should be included. Any selectivity exercised in recording artifacts must be noted and justified.

**4.2.3.7** Whenever practical, private collections obtained from or near the study area should be described and photographed. This should include collections of family photographs or records where appropriate, such as photographs of buildings that are no longer standing in the project area. Copies of family manuscripts should be obtained where appropriate, or at least described in the field notes and their location and present owner noted. It is desirable to contact local universities or the state archives about the existence of such collections and where they are curated.

**4.2.3.8** Project personnel must execute detailed and fully completed survey forms, individual site sketch maps, site plans that accurately show the location of subsurface tests, photo logs, specimen inventories, site plottings on an accurate and detailed map (usually a 7.5' USGS map), and a daily journal.

**4.2.3.9** Whenever possible and appropriate, each site survey form completed must provide the following information: site number and any other designations (name, temporary number, etc.), firm or institution's name and address, project name, county, elevation or range of elevation, work done by survey, description of site location, general description of site, observed cultural features, area of occupation (including basis for delineation), sketch map showing pertinent cultural and natural features, any concentration or variation within the area of occupation, depth of cultural deposit and how determined, major drainage, nearest water, associated soil type and minerals, site vegetation at time of observation, cultural material observed and/or collected, land owner's name and address, name and address of lessee or foreman, informant and address, previous investigations, UTM coordinates, map series, map name, map number, evaluation of research potential and why, recorder's name and affiliation, date photographs taken, disposition of notes and collections.

**4.2.3.10** In cases where standing structures or historic architectural remains are present, the above record should be expanded to include, when possible, observations concerning approximate date of construction, the reasoning for the date assigned, architectural styles, building materials, techniques of construction, structure function, and construction sequence.

**4.2.3.11** In addition to completion of a site survey form for standing structures or their remains, survey documentation should include a sketch floor plan drawn to scale (including interior features where possible) of the major structures remaining (e.g., house, barns). Site sketch maps should show roof lines and location of chimneys. Sketch maps and floor plans should follow a widely accepted format such as those of McKee (1970) or the ECI field manual (Baird and Shaddox 1981). Survey photographs of each whole or partial structure on a site should minimally include: at least two full-frame photographs clearly illustrating the relationship of all four elevations to each other; one full-frame photograph of each elevation pierced by a door or a window; and detail photographs of diagnostic architectural stylistic details. For examples of such details, see Blumenson (1981). In addition, photographs should be taken that illustrate the relationship of buildings, structures, and foundations or remains to each other and to the site as a whole. Photographs of standing structures and ruins must contain a scale, and the scale used must be specified in the photo notes. The scale must be placed on the same plane as the primary elevation or corner illustrated in the photograph.

**4.2.4** The documentation and evaluation of standing historic structures and engineering works shall be performed by an individual competent in architectural history and/or engineering documentation and, when appropriate, with experience in folk and vernacular architecture as well as academic building styles and periods.

**4.2.5** The basis for site evaluation must be explicit and must recognize the limitations of surface evidence. In areas where the criteria for site evaluation have not been well established, particular attention must be given to the criteria used in site evaluation (for example, submerged archeological sites or folk and vernacular architecture).

**4.2.6** Recommendations for any future action must clearly state to whom the recommendation is being made and the basis for the recommendation; be more specific than the National Register criteria and consider research potential and social value.

**4.2.6.1** Recommendations must equally well justify significance and nonsignificance. Where each site is not discussed individually, sites may be grouped, and the rationale for grouping, as well as justification of significance or nonsignificance, must be explicitly stated.

**4.2.6.2** Avoidance strategies that fully consider long-term project effects on cultural resources should be developed and strongly recommended in reports to the agencies involved.

**4.2.6.3** Mitigation recommendations should emphasize preservation over data recovery. Mitigation through data recovery should be undertaken as a last resort.

**4.2.6.4** Recommendations and assessments should consider impacts to the surrounding environment that may influence a site's integrity, aesthetics, or significance.

**4.2.6.5** In the case of standing structures or historic archeological sites, further "testing" is usually necessary after sites are identified during reconnaissance and survey. In order to determine site significance, such testing may include additional historical research on those sites that preliminary evaluation indicates may be potentially significant. This further research might include more in-depth physical documentation of the site, examination of primary source material, oral history interviews, and other historical research techniques as appropriate. Such further research should provide a sound basis for making and justifying evaluations of site significance and should lead to recommendations for the full-scale mitigation of adversely impacted significant sites. Mitigation, or complete documentation of a structure or complex prior to destruction or other adverse impact, differs from the further research described above in that it is usually comprehensive rather than selective.

**4.2.6.6** Historic structures that are assessed as being architecturally significant should be reported to the National Register Office of the THC regardless of whether or not they are National Register quality. If possible, historic site survey cards (available through the National Register Office) should be completed and returned to that office with a black and white photograph of the structure. If time does not allow the completion of such forms, copies of the pertinent site survey forms should be forwarded to the National Register Office.

**4.2.7** Project personnel should record, and where appropriate, collect data bearing on the relationships between cultural resources and the natural environment.

**4.2.8** Collections of natural resources (e.g., minerals, soils, and biota) should be systematic and well documented. In making such collections, investigators should be sensitive to environmental concerns.

**4.2.9** Techniques for recording rock art must be nondestructive and in no way contribute to further deterioration of the rock art.

**4.2.10** Testing during reconnaissance or survey must be fully documented and, when applicable, follow the procedures outlined below in Section 4.3.

**4.3 Subsurface Investigations**

Procedures for subsurface excavations must include the following:

**4.3.1** A scale site map should be made and normally should include topography, site features, and areas investigated. All site maps should be referable to permanent features, such as natural landmarks and USGS benchmarks.

**4.3.2** At least two permanent markers or some other satisfactory marking system should be placed at or very near the site. These should be easily relocated and clearly identified and described on the site map.

**4.3.3** Investigators should develop and maintain a system for identifying and recording artifact proveniences (both horizontal and vertical) which optimizes the research potential of the site.

**4.3.4** Whenever possible, controlled surface collections should be made and should be related to the provenience system used in the subsurface investigations.

**4.3.5** Data recovery techniques should be fully and accurately described in the field notes. Normally these field notes will include a daily journal, photo log, detailed descriptions of features, scale drawings of stratigraphic sections and significant artifact occurrences, excavation unit and level notes, and records of special collections (e.g., pollen and soil samples).

**4.3.6** Excavation safety. Subsurface investigations shall be conducted in compliance with applicable local, state, and/or federal excavation safety laws and engineering standards. Archeological contracts must include adequate budgets to ensure this compliance.

**4.3.7** Data recovery must be carried out in a manner that ensures that the maximum amount of historical, scientific, archeological, architectural, and educational information will be recovered and preserved.

**4.3.7.1** Under any circumstances, the amount of work done should be appropriate to the question(s) asked. For example, in assessing site significance, care should be taken to open large enough areas to ensure a useful statement of site content in that portion of the site available for investigation. Judicious use of power machinery can be a cost-efficient means of determining site size and internal structure.

**4.3.7.2** Efforts must be made to record cultural materials in place when these occur in undisturbed context. In the case of very fragile materials (for example, poorly preserved skeletal remains), it may be desirable to have a specialist study the material *in situ* .

**4.3.7.3** Normally, no larger than 1/4-inch mesh screen should be used to recover specimens dislodged by excavation; on many occasions it is advantageous to evaluate differential recovery techniques by using finer mesh screens and flotation.

**4.3.7.4** Special samples for soil, pollen, plant, coprolite, and phytolith analyses and for archeomagnetic, radiocarbon, tree-ring, and thermoluminescent dating should be collected, even if there are no immediate plans to analyze these samples. In making such collections, consideration must be given to the proper collecting techniques, laboratory preparation, and housing of the samples.

**4.3.7.5** Uncollected entities (such as cultural or environmental features from depositional strata, soil horizons, and the like) must be fully and accurately recorded by appropriate means.

**4.3.7.6** All artifacts and special samples collected must be carefully packaged in the field to ensure that no provenience information is lost and that there is no deterioration or damage before laboratory processing.

**4.3.7.7** Fragile specimens encountered may require special conservation measures. Techniques such as consolidation and jacketing can be effective in such cases.

**4.3.8** The concerns of ethnic and social groups, especially Native American Indians, must be addressed before human skeletal remains are excavated.

**4.3.9** Prior to backfilling, excavation units should be marked with a stable, nonbiodegradable material. Notes should be made on the type(s) of material used and where it is placed so that

future researchers can easily recognize previous excavations.

## 5. Standards of Data Analysis

It is the responsibility of the Principal Investigator to assure that each archeological project follows an analysis procedure consistent with and appropriate to the explicit objectives of the research design. If the Principal Investigator does not actually perform this analysis, he/she must carefully oversee all aspects of the analysis to ensure that it will be correctly performed by an adequate number of qualified personnel. Changes in stated research goals and redirection of analysis must be justified. Recovered data must be thoroughly analyzed, using the latest proven techniques of archeological enquiry. The results of the analysis must be synthesized and made available in a timely manner, to the public as well as the professional community. It is essential that all analyses be based on logical rigor and adequate supporting data. It is expected that all analyses and analytical results will be described in sufficient detail to allow for replication. It is the responsibility of the Principal Investigator to design and implement an analysis that avoids the weaknesses of being either too broad, general, and superficial or too narrow, particular, and trivial.

### 5.1 Preanalysis Considerations

The following points should be considered before analysis is begun:

**5.1.1** The availability of adequate personnel must be ensured.

**5.1.1.1** The Principal Investigator is ultimately responsible for the results of analysis; if the PI does not personally perform the work, he/she should carefully oversee all aspects of the analytical procedure.

**5.1.1.2** Analysis of the recovered data should be performed by an individual or individuals competent in the techniques of archeological analysis and familiar with the regional archeological data. For example, in the case of sites with architectural components, analysis of the field data should be performed by an individual (or individuals) competent in architectural history, and wherever possible, with knowledge of folk and vernacular architecture as well as in academic building styles and periods.

**5.1.1.3** Appropriately trained personnel should be available to conduct any special studies required by the research design.

**5.1.1.4** Laboratory personnel should be adequate in number and training to process all specimens, written records, and photographic materials in a timely manner and to make specimens ready and available for special studies.

**5.1.2** Facilities and equipment appropriate for all levels of the analysis must be ensured and made available to project personnel.

**5.1.3** The timely fulfillment of grant and contract obligations must be considered throughout the course of analysis. Analysis must commence as soon as possible after field work is completed.

**5.1.4** Specimens must be cleaned and preserved.

**5.1.4.1** Laboratory personnel should employ cleaning techniques that are appropriate to the materials being cleaned and should be aware of the potential for destruction of archeological data in the cleaning of some specimens (e.g., micro- and macro-plant fossils on stone tool

edges, edge polish, striations and butchering marks on bone, decorative elements on ceramics, etc.).

**5.1.4.2** Preservation of unstable or fragile materials should be undertaken in the field if possible; if treatment in the field is not possible, preservation should be performed immediately upon conclusion of fieldwork.

**5.1.5** Specimens must be catalogued.

**5.1.5.1** The manner and place of curation should be considered in the cataloguing process, as different repositories may have different requirements. In general, records and specimens should be housed along with those from previous investigations (see Curation Guidelines 3.1.1).

**5.1.5.2** All specimens that are large enough to be numbered should be marked in a permanent manner, unless they consist of material that cannot or should not be marked. All specimens left unnumbered should be placed in labeled containers and stored in a manner that preserves provenience.

**5.1.5.3** Care should be taken to mark specimens only in areas that will not affect attributes significant for analysis or display purposes.

**5.1.5.4** A complete specimen inventory should be maintained during the cataloguing process, and any field inventories should be cross-checked and updated. An accurate inventory should accompany specimens into curation.

**5.1.6** Field records must be maintained.

**5.1.6.1** Immediately upon returning from the field, project personnel should check all written records for consistency, clarity, and legibility. Records should be updated to reflect any changes in methodology employed in the field.

**5.1.6.2** Additional file or microfilm copies should be made of all written records, including field maps.

**5.1.6.3** Any data recorded on magnetic tape must be transcribed immediately upon completion of field work. Formal oral history interviews may be an exception because of their length; however, tapes of these interviews should be indexed before being placed in an archive.

**5.1.6.4** All photographic materials must be processed promptly upon completion of field work.

**5.1.6.5** If the resulting photographic record is inadequate, either due to loss of film in processing or original poor photography, an effort should be made to return to the field to correct such loss when feasible.

**5.1.6.6** The photographic record should include documentation of diagnostic specimens that are significant to the interpretation of the cultural resources.

**5.1.6.7** All photographic materials must be catalogued in a manner appropriate for curation.

**5.1.6.8** All photo logs must be cross-checked for consistency with the resulting photographic record. Catalogue numbers assigned to photographs should be recorded on the photo log and

any frames lost in processing or discarded should be accounted for on the photo log. Photos should be cross-referenced on both photo logs and site forms, and on all pertinent field and laboratory records.

**5.1.7** Some collections may require special treatment.

**5.1.7.1** Materials requiring special analysis (soil, pollen, floral, faunal, sources of carbon, flotation materials, etc.) must be processed immediately upon return from the field. Many of the collections may require special treatment to ensure their scientific value for future researchers.

**5.1.7.2** Laboratory notes must make clear the history of how special collections or specimens receiving special treatment were handled and should note if they were sent elsewhere for analysis (where, when, why, etc.).

**5.1.7.3** Normally, collections of specimens should be loaned only to institutions and not to individuals (see Curation Guidelines 2.1.4.3).

**5.1.7.4** Special collections or specimens that are to be sent elsewhere for analysis should be treated as loans for records purposes. When appropriate, these specimens and those subject to destructive analytical techniques should be fully documented (written descriptions, material identification, photographs, drawings).

## 5.2 Analysis

Any analysis must take into account a variety of research questions and techniques. The study may be oriented around a specific problem or be a comprehensive study of all data recovered. While both kinds of studies are important to archeological research, it must be recognized that researchers are often forced to be selective about the time and energy put into analysis. In establishing analytical priorities, the researcher should recognize the strengths as well as the weaknesses of any approach. Most importantly, the analysis should not be so broad and general that it will yield only limited results, nor should it be so narrowly focused that it will fail to consider and present data potentially important to other research objectives. With these problems in mind, it is obvious that attempting to offer "step-by-step" guidelines for analysis is not only impossible, but is also not in the best interest of research or archeology as a profession. The following guidelines, however, should be regarded as basic considerations in the conduct of any analysis.

**5.2.1** Analytical techniques should be formulated in a manner that is consistent with the objectives of the research design. While this matter should be addressed in the initial phases of the analysis, it should not preclude flexibility of approach to the data.

**5.2.2** In order to ensure continuity of research, the study should include data resulting from previous work in the project area or region.

**5.2.3** The analysis must employ methods that ensure clear and accurate descriptions of recovered materials as well as the techniques used in their analysis. In all cases the researcher must justify any exclusions of data or materials from analysis.

**5.2.4** A concise, tabular record of all specimens and their provenience should be prepared during the course of the analysis.

**5.2.5** In cases where multiple analyses are being performed by several individuals, efforts must be made to ensure the timely completion and complementary nature of the results.

**5.2.6** All analyses should be based on logical rigor and adequate data, should have an underlying rationale, and should be replicable. As an example, in a statistical analysis:

**5.2.6.1** The logic behind statistical approaches must be based on acceptable statistical formulae. Care should be taken to warrant the use of statistics.

**5.2.6.2** All statistical manipulations must be based on a quantitatively adequate data base.

**5.2.6.3** The source of any computerized statistical program utilized and the rationale behind program selection must be thoroughly documented.

**5.2.6.4** Any use of statistical approaches in the analysis must be thoroughly documented in such a manner that replication of each approach is possible.

**5.2.7** Analytical techniques should be documented, and all notes generated in analysis should be retained for curation.

**5.3 Results of Analysis**

The completion of analysis should involve the synthesis of all analytical results in a manner that relates the summarized data to the goals stated in the research design. This process should also include the integration of ancillary data, the identification and discussion of any perceived patterns and relevant processes, and the comparison of analytical results with those achieved in other regional analyses.

Any shifts in overall research goals resulting from data gained through analysis should be identified and the reason(s) for such redirection clearly stated. Should the results of analysis indicate that a level of diminishing returns has been attained in the investigation, the manner in which such determination(s) was made must be elucidated. The significance of the resources should be evaluated through assessment of their potential for future research. The manner in which analytical findings serve as a basis for recommendations must be defined and succinctly stated. In addition, the contribution of the project to the Texas Heritage Conservation Plan and/or other theoretical and substantive concerns should be addressed.