USER'S GUIDE

NEW MEXICO CULTURAL RESOURCE INFORMATION SYSTEM

Guidelines for Submitting Archeological Records

July 1993

State of New Mexico

Office of Cultural Affairs

Historic Preservation Division

Archeological Records Management Section

Document Control No.: OCA/HPD/ARMS 93-101 Rev. 1.00

I can't stand this proliferation of paperwork. It's useless to fight the forms. You've got to kill the people producing themÉ

- Vladimir Kabaidski

Communist Party Conference

TABLE OF CONTENTS

Chapter Page

TABLE OF CONTENTS (CONTINUED)

Chapter Page

LIST OF FIGURES

Figure Page

1. INTRODUCTION

THE NEW MEXICO CULTURAL RESOURCE INFORMATION SYSTEM

The New Mexico Cultural Resource Information System (NMCRIS) is an integrated computer information system designed to support cultural resource management and research in New Mexico. Ultimately, NMCRIS will integrate geographic, management, and research-related data pertaining to three major classes of cultural resources: archeological sites, historic architectural sites, and traditional cultural properties (TCPs). The system will be implemented in stages, beginning with the archeological site segment and followed, over the next 3-5 years, by historic architecture and TCP modules. This document deals only with the archeological portion of NMCRIS, however.

NMCRIS supports cultural resource management and research by serving as the primary index for archeological records housed at the Laboratory of Anthropology (LA), the official clearinghouse for archeological data in New Mexico. The organization responsible for maintaining the state's archeological records and the NMCRIS database is known as the Archeological Records Management Section (ARMS), administered by the New Mexico Historic Preservation Division (HPD) in cooperation with the Museum of New Mexico (MNM). Although ARMS is part of HPD, its offices are located in the Laboratory of Anthropology.

The archeological segment of NMCRIS replaces the Archeological Records Management System (also known as ARMS), an automated database developed by the Museum in 1977-1978 with the financial assistance of HPD (then known as the State Planning Office). To eliminate confusion surrounding the acronym ARMS, references to the now obsolete Archeological Records Management *System* in this document will be made without abbreviation, and the Archeological Records Management *Section* will be abbreviated as ARMS or written out.

NMCRIS will be implemented over a six-month transition period beginning with distribution of this document and the new data forms. During the transition, obsolete forms (specified below) will continue to be accepted by HPD, but archeologists should abandon the old forms and start using the new ones as soon as it is feasible. Although previous drafts of the new forms are very similar to the final version, all draft materials distributed by ARMS for review and field testing are now obsolete and should also be discarded.

HOW TO USE THE NMCRIS USER'S GUIDE

This first volume of the **NMCRIS User's Guide** focuses on how to complete data forms and submit them, along with reports and other supporting documentation, to the Historic Preservation Division and the Archeological Records Management Section. Some instructions on how to get basic cultural resource information *out* of NMCRIS are also provided, but users are referred to other technical documents that are, or soon will be, available from ARMS for instructions on the use of the NMCRIS computer system.

RELATIONSHIP TO OTHER DOCUMENTS

The material presented in the **NMCRIS User's Guide** replaces all previous documentation, forms, and attendant procedures relating to the Archeological Records Management System. Obsolete materials consist of the following:

- *Archeological Records Management System Database* (including all database subsets and copies previously distributed to government agencies and archeological institutions).
- *Coding Guidelines: Archeological Records Management System Site Forms* (issued January 1980; revised April 1988 and April 1991).
- *Archeological Records Management System Site Coding Form* (1-page blue computer coding form).
- *Guidelines for Coding Archeological Records Management System Survey Forms* (issued May 1984; revised November 1986 and April 1991).
- *Archeological Records Management System Survey Coding Form* (1-page yellow computer coding form).
- *Museum of New Mexico, Laboratory of Anthropology Site Survey Form* (4-page site recording form).
- *Archeological Records Management System Data Entry Program* (computer program and related documentation distributed May 1992).

The New Mexico Cultural Resource Information System is documented in detail in the *Application Development Plan for the Archeological Records Management Segment of the New Mexico Cultural Resource Information System*, issued in September 1991. This technical document describes the system scope, general system requirements, design objectives, and the application development methodology to be used in developing the archeological segment of NMCRIS. Copies of this application development plan may be obtained by contacting ARMS.

The *DECSystem 5000 Database Query Facility User's Manual* documents the use of the basic query interface used by ARMS

staff and other users. Although the user interface will not change significantly for basic queries, the Database Query Facility (DQF) will be extended to take advantage of the redesigned NMCRIS database. An updated version of the DQF User's Manual will be distributed as a separate addendum to the **NMCRIS User's Guide**.

Future NMCRIS development will require addenda to the **NMCRIS User's Guide**. An extended database query interface and a replacement for the now obsolete Archeological Records Management System Data Entry Program developed over the next 5-6 months will result in two additions to this document. As the historic architecture and TCP segments of NMCRIS are developed over the next 3-5 years, new documentation specific to these system components will be produced and distributed.

DOCUMENT ORGANIZATION

The **NMCRIS User's Guide** contains six chapters and seven appendices. After presenting background material in this introduction and the following chapter, the User's Guide provides instructions for completing data recording forms, submitting archeological records to ARMS, and using the information system for management and research. Appendices to the User's Guide contain attachments such as data forms and other reference information too lengthy or detailed to be presented in the body of the document. Also provided are a list of cited references and a page index to all data items appearing on the La Project/Activity Record and LA Site Record.

The following list describes the content of this User's Guide in more detail:

Chapter	**Description**
1. Introduction	describes NMCRIS and puts it into historical and operational context.
2. Design Rationale	introduces the basic design of NMCRIS and defines key concepts and terms used throughout the remainder of the document.
3. The LA Project/Activity Record	provides guidance on defining key entities and agencies involved in archeological investigations; presents detailed, line-by-line instructions for completing the LA Project/Activity Record.
4. The LA Site Record	provides guidance on defining and recording archeological sites and other archeological entities; presents detailed, line-by-line instructions for completing the LA Site Record.
5. Requirements for Submitting Archeological Records	identifies the specifications of archeological records submitted to HPD and ARMS.
6. Using NMCRIS	provides an overview of the basic procedures involved in registering sites and querying the NMCRIS database.

Appendix	**Contents**
1. NMCRIS Forms	one copy each of the LA Project/Activity Record, the LA Site Record, and various continuation forms.
2. Report Citation Standards	guidelines for report citations used in Section 5 of the LA Project/Activity Record (Chapter 3).
3. HPD Historic Building Inventory Form	one copy of the HPD Historic Building Inventory Form, required for recording historic sites with standing architecture.
4. Landform Definitions	definitions of landform categories used in Section 7 of the LA Site Record (Chapter 4).
5. Archeological Periods and Default Date Ranges	period names and default occupation dates used in Section 7 of the LA Site Record (Chapter 4).

6. Archeological Phase and Complex Names	archeological phase and complex names used in Section 9 of the LA Site Record (Chapter 4).
7. Feature Definitions	definitions of archeological feature typesused in Section 10 of the LA Site Record (Chapter 4).

IF YOU HAVE QUESTIONS

Should you have any questions regarding any material presented in the **NMCRIS User's Guide** or need additional copies of this document or the new data forms, please contact any member of the ARMS staff. Questions concerning computer system access or operations should be directed to the ARMS System Manager or Registrar. These individuals may be reached at (505) 827-6347, 827-8002, or 827-6497 (fax).

Official correspondence should be sent to the main office of the Historic Preservation Division at the following address:

Office of Cultural Affairs

Historic Preservation Division

Archeological Records Management Section

La Villa Rivera, Room 320

228 East Palace Avenue

Santa Fe, NM 87503

2. DESIGN RATIONALE

Long-time ARMS users will have noted a number of changes in the operation of the system in the past few years. Some changes, such as the institution of dial-up capability, were designed to improve user access to the data. Others, such as the GIS-based information on surveyed space that is now in the planning stages, are designed to provide both improved cultural resource management support and improved research support. Certainly, however, the change that will most directly affect virtually all ARMS users is the shift to the NMCRIS system that is described in this **NMCRIS User's Guide**.

The purpose of this chapter of the user's guide is to explain the design of the archeological segment of NMCRIS. *Please do not skip this chapter.* Mastery of the information presented in this chapter is not essential to completing the new data forms, but if you understand the database design, the basic organization of the forms will be clearer, and this, in turn, will make filling them out a more logical and understandable process. Additionally, an understanding of the structure of the database will make it easier for you to identify and retrieve data that *you* need as you use NMCRIS in the future.

This chapter also introduces and defines key concepts and terms that will be used throughout the remainder of this document. So please, bear with us, and we will try to make clear the reasons for the changes in the site and survey forms and the logic behind the new (and improved) database that we call NMCRIS.

NMCRIS has been designed to serve the information needs of a diverse community of archeologists and other cultural resource professionals in New Mexico. Many NMCRIS users work for federal, state, or local government agencies; others conduct or support archeological research, either through educational institutions, museums, and private organizations, or as individuals. The NMCRIS design is a compromise; there is no way to make the system optimal for every segment of such a broad user community. If it were equally useful for everyone, the system would either be too complex to maintain and operate efficiently or too simplistic to be of any real use. Instead, the NMCRIS design attempts to achieve a statewide *standard* for basic cultural resource information and to provide a means of sharing that information among land managers and archeologists.

THE NMCRIS DATA MODEL

As a first step in redesigning the system, we attempted to determine what the data needs of prospective NMCRIS users were by studying existing manual and automated archeological data systems and by conducting user interviews. We used the results of these studies to create a general *model* of the NMCRIS that can be expressed graphically as what is called an **entity relationship diagram** (see Figure 2.1). This diagram identifies the data **entities** that make up the new database and the **relationships** among those entities, and it specifies any existing or anticipated **operational constraints**.

An **entity** is simply an object (i.e., person, place, thing, event, concept) about which information needs to be maintained.

Entities appear as large boxes in Figure 2.1 and are labeled with the terms **projects**, **activities, reports**, and **sites** to refer to the main NMCRIS data entities. Associations that exist among data entities are termed **entity relationships** and are described with an action phrase in Figure 2.1 ("a report *documents* an activity," "an activity *investigates* a site"). Entity relationships express the **operational constraints** of the model: some relationships are optional ("an activity *may* investigate a site"), while others are mandatory ("an activity *must* be administered by a project"). Numerical restrictions on entity relationships are also expressed in Figure 2.1 ("a project may administer *one or more* activities"). Note that one-to-many entity relationships do not have set numerical limits in the NMCRIS data model.

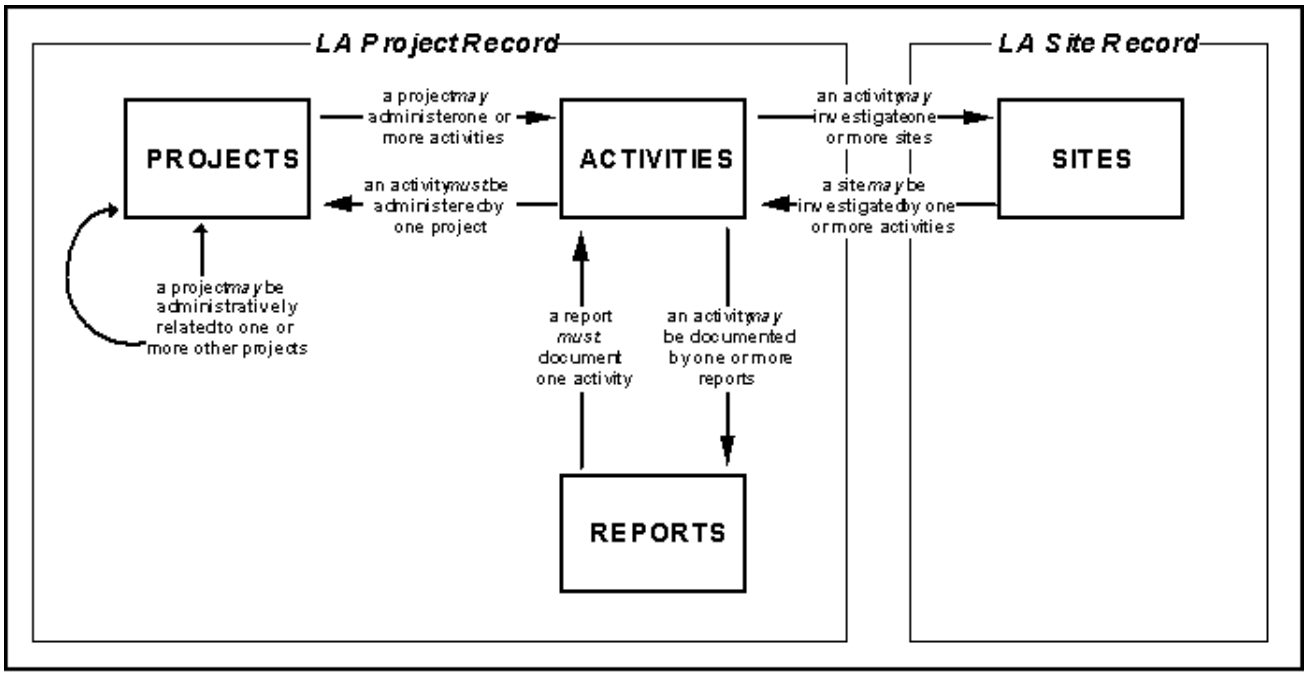

Figure 2.1. NMCRIS Archeological Data Entities and Relationships

The types of information that must be entered on a NMCRIS data collection form are referred to as **data items**. Data items are the significant properties or characteristics of an entity that help to identify it and carry the information that system users need to know about the entity. For example, archeologists need to know where sites are located for management or research purposes, so data items such as *UTM Zone*, *UTM Easting*, and *UTM Northing* are maintained in the information system and are included on the NMCRIS data collection forms.

Most of the rest of this User's Guide is devoted to providing detailed information about the data items that must be entered on NMCRIS data collection forms. In the remainder of this chapter we will discuss the data entities that make up the NMCRIS database and the relationships among them in more detail.

DATA ENTITIES AND RELATIONSHIPS

PROJECTS

A **project** is an undertaking that involves the identification, protection or treatment of cultural resources. Although the term *project* is used daily by most cultural resource professionals, it is most commonly used to refer to actual investigative activities (e.g., surveys, excavations, monitoring). As it is used in NMCRIS, however, the term *project* refers to an overall undertaking, e.g., a pipeline, road construction, a timber sale) involving cultural resource investigations or, more precisely, to the *administrative* aspects of such an undertaking.

Each NMCRIS project is the administrative responsibility of a **sponsoring agency**. For most cultural resource management (CRM) projects, the sponsoring agency will be a federal, state, or tribal agency. For research projects the sponsoring agency may be a government agency, an educational institution, or an individual. Although large CRM projects may involve lands owned or administered by many different agencies and private individuals, a project may have one -- and only one -- sponsoring agency. This sponsoring agency will be the lead agency for purposes of consultation with the State Historic Preservation Officer (SHPO) under Section 106 of the National Historic Preservation Act (NHPA).

The sponsoring agency should not be confused with the company or organization that funds archeological activities in order to obtain rights-of-way or authorization to use public lands. These organizations do not play an *administrative* role in cultural resource management, so they are not sponsoring agencies as defined here.

Projects may be related to other projects. Figure 2.1 illustrates this hierarchical relationship as a circular arrow attached to the project entity. This feature allows sponsoring agencies and other users to link projects that are administratively separate but that are related in some other way. For example, a sponsoring agency such as the State Highway Department may wish to link together all archeological investigations conducted over a 10-year period along a transportation route in order to produce a summary of work performed. A sponsoring agency may also wish link together a series of related projects conducted in stages as part of a major undertaking such as an irrigation project. In both examples, a sponsoring agency creates a new project and uses its *parent* identification number to link together all related *child* projects.

ACTIVITIES

A project, as defined in NMCRIS, comprises one or more **activities**. An activity is defined as one or more investigative actions (surveys, excavations, analyses, etc.) conducted and reported by a single **performing agency** under the administrative umbrella of a project. An activity may consist of a single investigative action (a survey), or it may be a combination of several actions that are conducted and reported together by the performing agency (a survey and testing program, for example).

The performing agency is a cultural resources firm, consultant, or individual researcher who actually performs the cultural resource investigations reported as an activity. The performing agency can also be the sponsoring agency as, for example, when a federal agency conducts an archeological survey internally. An activity may be conducted by one -- and only one -- performing agency. Note, however, that multiple activities conducted as part the same project are not required to have the same performing agency.

Several important entity relationships involving activities are evident in Figure 2.1. First, activities cannot exist in isolation: an activity can be directly related to one -- and only one -- project. Second, activities may be related to other activities through their common association with a single project.

Instances of this "one project to many activities" relationship may be found in most large cultural resource projects, where activities are divided into a sequence of investigative stages or phases. For example, a large undertaking such as a pipeline project begins with an inventory, followed by a testing program, and culminates in a data recovery effort followed by a construction monitoring program. Each of these distinct activities generates documents such as site forms, reports, and excavation records that are directly related to the pipeline project, even if different performing agencies are involved. Much simpler examples of project-to-activity relationships are more common in CRM, however, and a simple one-to-one relationship between projects and activities is probably the most common case.

Finally, Figure 2.1 illustrates that activities are closely associated with the entities defined as **sites** and **reports**. Activities may investigate one or more sites, and may be documented by one or more reports. These entities and their relationships to activities are explored further below.

REPORTS

Activities are documented by **reports**. Reports are written descriptions of the activity and provide a rationale for the conducted investigations and describe the methods used and the results obtained. Opinions regarding site significance, project impact, and treatment may also be provided in an activity report. Reports are usually prepared by the performing agency and, unless the sponsoring and performing agencies are the same, are submitted to the sponsoring agency for review. In most cases, the sponsoring agency then submits reports to the Historic Preservation Division for review, incorporation into NMCRIS, and curation at the Laboratory of Anthropology.

An activity may be documented by one or more reports. Although Figure 2.1 indicates an optional relationship, activities should always be documented by at least one report. A report can document only one activity, but it may be related to other reports through a shared activity or as part of a single project. Additionally, a report may be linked through entity relationships to one or more **sites**.

SITES

As physical entities, sites are familiar to all archeologists. A somewhat different perspective is used for NMCRIS, which defines sites as complex *informational* entities, or as *site records*. A site record is normally seen as a collection of descriptive and interpretive information relating to a site's location, size, contents, ownership, occupational history, and so on. It is important to recognize, however, that a site record must also be a *cumulative* record of investigative events (i.e., activities) that have been conducted at the site as well as a record of direct observations made on site condition. This historical record is critical to both research and management concerns. Although this information has always been available in the archeological records housed at the Laboratory of Anthropology and elsewhere, it is now automatically maintained in NMCRIS through a secondary data entity: the **site visit**.

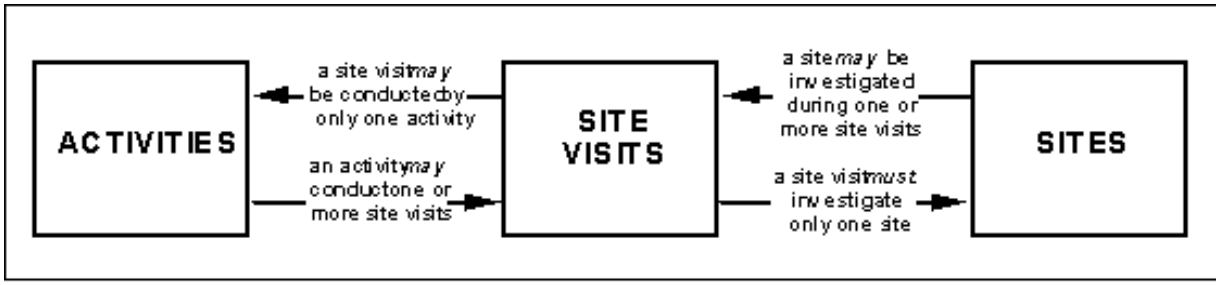

Figure 2.2. NMCRIS Site -- Activity Relationships

Activities investigate sites by means of site visits. Figure 2.2 illustrates some basic entity relationships: 1) an activity may comprise one or more site visits, and 2) a site may be investigated by many activities. We can also intuit that a site must be associated with at least one visit (how else would we know about it?), and that a site visit can be related to only one activity. Within NMCRIS, the link between a site and an activity is generally created through site visits, and the cumulative record of site visits creates the investigative history for each site.

Note, however, that a site visit need not be associated with an activity. Casual visits conducted to assess site condition do not, for example, have to be associated with a formal activity in order for the site visit to be recorded in NMCRIS. A site visit record contains data about any work done at the site during the visit (collections made, testing or excavations completed, etc.), information about any temporary identification numbers assigned to the site, a description of the condition of the site at the time of the visit, and information relating to subsequent SHPO consultations.

Sites are also related to two other descriptive data entities: **components** and **features** (Figure 2.3). Components describe the cultural and temporal affiliations of a site. A component is defined as a generally *continuous* site occupation with a *single* cultural affiliation, as evidenced by associated artifacts, features, and historical records. Most sites are described accurately by means of a single component description, but some sites require the definition of additional components, owing to a long or complex occupational history and/or the existence of a detailed historical or archeological record.

Features describe the internal structure of a site. Features include, but are not limited to, structures (i.e., something made up of a number of parts that are held or put together in a particular way), facilities (i.e., something created to serve a particular function), and other cultural remains such as middens, deposits, stains, pits, rock alignments, etc., observed within a site. When they are present, individual features may be related to any number or combination of site components, or to *none* of the components. This latter relationship may seem somewhat inconsistent, but it has been incorporated into the NMCRIS design because of the nature of field observations. Observations made during surface survey are notoriously incomplete, and in many cases, positive feature-component associations can only be made on the basis of excavation data. By allowing features to be input without the requirement of relating them to any specific site component, NMCRIS can accommodate survey observations without exceeding the limitations of the physical evidence.

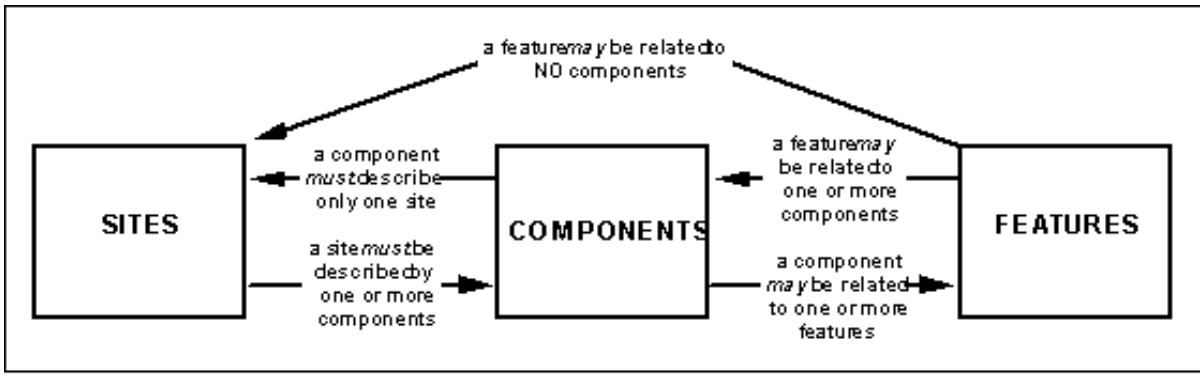

Figure 2.3. NMCRIS Site -- Component -- Feature Relationships

DATA COLLECTION

Data items relating to the project, activity, report, and site entities are captured through two closely related data collection forms: the **LA Project/Activity Record** and the **LA Site Record**. As illustrated in Figure 2.1, the LA Project/Activity Record collects information pertaining to projects, activities, and reports while sites and other secondary data entities are handled on the LA Site Record. Instructions for completing these data collection forms are provided in the next two sections of this User's Guide. Please refer to the copies of the LA Project/Activity Record and the LA Site Record included in Appendix 1 as you review these instructions.

3. THE LA PROJECT/ACTIVITY RECORD

The LA Project/Activity Record captures information relating a single project, plus associated activities and reports. Although several data items are reserved for use by the sponsoring agency and ARMS, the form is completed by the performing agency at the conclusion of a cultural resource investigation. The form is completed for all cultural resource management or research-oriented activities involving archeological inventory, construction monitoring, test excavation, data recovery, or any other kind of study focused on archeological sites or collections. Unless the performing and sponsoring agencies are the same, the LA Project/Activity Record is submitted to the sponsoring agency by the performing agency along with a report and other archeological records (e.g., site recording forms, photographs). These records are then transferred to the Historic Preservation Division by the sponsoring agency to support Section 106 consultations. When consultations are complete, all archeological records are transferred to ARMS where they are curated and integrated into the NMCRIS database.

The LA Project/Activity Record registers cultural resource investigations with the Archeological Records Management Section, and supports SHPO consultations, archeological records management, and research. The form captures information relating to the administrative and methodological contexts of each site's discovery and subsequent treatment. The captured information is also a critical component of the digitized surveyed-space database being developed by HPD over the next 5 years.

This chapter of the **NMCRIS User's Guide** provides instructions on how to complete the LA Project/Activity Record. Since many NMCRIS data entities and concepts are new, some specific definitions are considered before item-by-item form instructions are presented.

DEFINING PROJECTS AND ACTIVITIES

Although the majority of projects involving cultural resources are associated with a single survey activity, some undertakings are considerably more complex. For such projects, the LA Project/Activity Record may be difficult to complete owing to the complexities of reporting. Large, fast-tracked undertakings such as interstate pipelines often result in multiple-volume reports that are organized according to the needs of the client rather than the nature of the activities or phases of investigation. This usually translates into report sets that include substantial project administration or executive summary volumes, project results sections organized by activity types (e.g., survey and testing, excavation, special studies) or undertaking-specific divisions (e.g., multiple project sections), and multiple data appendices. The situation is further complicated by the fact that report volumes may be published over a period of years following the completion of fieldwork. In general, it is best to follow the organization of multiple report volumes and treat each volume as a separate activity within the same project.

In large undertakings where there may be many state, federal, tribal, and private entities involved, specifying the sponsoring and performing agencies may also be difficult, but there is generally only one agency, commonly referred to as a *lead agency*, that consults with the SHPO. In NMCRIS, this agency is considered the sponsoring agency. As explained below under **Project Data**, other permitting agencies involved in the project are also entered on the form, but are not considered the sponsoring agency.

Determination of the performing agency is generally straightforward, but contracting situations may foster some confusion. For example, a large consulting company may hire an archeological service agency to perform a Class II survey for an Environmental Impact Statement. The consulting company is not the performing agency in this case, for they did not actually do the fieldwork and, because they are not involved in permitting or administering the cultural resource consultations, they also cannot be considered the sponsoring agency. In this case, the archeological service agency is listed as the performing agency; the consulting firm is merely an outside agent for the corporation needing the EIS. As outlined below in **Report Data**, the consulting firm would be listed on the LA Project/Activity Record, but not as the performing agency. This situation also pertains to cases where a company or agency is subcontracted to perform specialized analyses such as palynology.

COMPLETING THE LA PROJECT/ACTIVITY RECORD

The LA Project/Activity Record is divided into 5 sections (Appendix 1):

1. Project Data (project identification, sponsoring agency, project type, proposed action, etc.).

2. General Activity Data (activity identification and performing agency, activity type, studies performed, etc.).

3. Survey Activities (survey type, methods, results, acreage surveyed, location, etc.).

4. Non-Survey Activities (associations with registered sites; completed for site-specific activities such as monitoring or excavation).

5. Report Data (basic reference information: author(s), title, publisher, report numbers, etc.).

Item-by-item instructions for completing the LA Project/Activity Record are presented in the remainder of this chapter. Data items are defined and described in the order of their appearance on the form. *All applicable data items must be completed.* In multiple-choice data items, all applicable choices should be indicated (i.e., "choose all that apply") unless otherwise noted (e.g., "choose one"). Several data items are reserved for use by the sponsoring agency or ARMS that are indicated in the instructions and on the form. See Chapter 5 of the **NMCRIS User's Guide** (**Requirements for Submitting Archeological Records**), for more information on submitting the LA Project/Activity Record and other associated records to HPD.

1. PROJECT DATA

NMCRIS Project Number: Enter the NMCRIS Project Number. The NMCRIS Project Number is a unique identifier assigned by ARMS personnel to each cultural resource project. NMCRIS Project Numbers are assigned whenever archeological sites are registered by ARMS. *Project numbers are not required for archeological surveys with negative results.* If the project has multiple phases or stages of investigation, post-discovery activities such as testing and data recovery are associated by entering the *previously assigned* NMCRIS Project Number in this field. In such cases it is not necessary to complete any other data items in the Section 1 of the form (**Project Data**).

Parent Project Number: *(Sponsoring Agency only)* If the cultural resource project is related to another administratively separate, but otherwise related project, enter the NMCRIS Project Number of the parent project in this field. If you do not know the NMCRIS Project Number of the parent project, or if you wish to create a new parent project as described previously under **Design Rationale**, please contact ARMS.

Sponsoring Agency: Enter the name and administrative unit of the agency responsible for administering the cultural resource project (e.g., BLM, Farmington District).

Project ID: *(Sponsoring Agency only)* If the sponsoring agency has a unique identifying number (e.g., RS-1331[4]) for the project, enter it here. If the sponsoring agency has not assigned a project number, leave this field blank.

Project Name: *(Sponsoring Agency only)* If the sponsoring agency has a unique identifying name (e.g., Black Mesa Timber Sale) for the project, enter it here. If the sponsoring agency has not assigned a project name, leave this field blank.

Project Dates: Enter the sponsoring agency's starting and ending dates for the project using the DD-MMM-YYYY format (e.g., 03-MAR-1992). If you are unsure of these dates, contact the sponsoring agency. For most projects, the report date is an appropriate ending date, but if an additional phase of investigation is certain, leave the ending date field blank. If exact project dates cannot be determined, use the first day of the month or year for the start date, and the last day of the month or year for the ending date.

Project Type (choose one): Indicate the general project type by choosing one of the following:

- *cultural resource management*: a project involving archeological inventory, evaluation, and data recovery activities performed to meet the requirements of Section 106 of the National Historic Preservation Act of 1966, and/or other historic preservation legislation.

- *regional or topical overview*: a literature review focused on a specified region (e.g., the San Juan Basin, the Lower Rio Grande Valley) and/or a topic of archeological interest (e.g., the Chaco road system, obsidian hydration dating). As defined here, an overview does not involve field research.

- *research project*: a research project involves field activities such as archeological inventory and excavation that are performed as part of a research effort. This effort may be formalized in a research design with institutional support, or it may be a personal research project with no outside funding.

- *other project type*: if the above categories do not adequately describe your project, please check this box and provide a brief description.

Project Description (optional): *(Sponsoring Agency only)* Space is provided for a brief description of larger or more complex projects.

Proposed Action: Indicate the type(s) of proposed undertaking involved from the following list. At least one action must be indicated.

- *research project*: field schools, grant-funded excavations and surveys, dissertation research projects, etc.

- *drill hole*: drilling activities related to mineral or oil/gas exploration, water wells, etc.

- *mining*: ground-disturbing actions related to the surface or subsurface mining of coal, uranium, copper, etc.

- *materials pit/stockpile*: gravel pits and materials stockpiles, usually highway-related.

• *railroad*: rail bed construction, maintenance, etc.

• *road/highway*: road construction, resurfacing, reconstruction, etc.

• *buried pipeline/cable*: trenched, underground lines (e.g., buried phone lines, gas pipelines).

• *transmission line*: overhead communications or electric transmission lines; substations and pumping/compression facilities should be indicated under *building/facility construction*.

• *seismic line*: temporary installation of surface communications lines for oil/gas or mineral exploration.

• *fence line*: fence construction and maintenance.

• *trail*: hiking trail construction and maintenance.

• *military target site*: areas used for missile or other weapons testing on military lands.

• *land exchange*: land sales or exchanges involving federally owned or administered properties.

• *land management project*: general category for activities relating to land management projects or studies (e.g., timber sales, wildings, prescribed burning, re-vegetation projects, abandoned mine reclamation, landfills, chaining, disking, plowing, watershed management, para-archeologist training activities).

• *building/facility*: equipment yards, parking lots, buildings, transmission line substations, pumping/compression stations, houses, etc.

• *reservoir/dam*: construction of large water impoundments and flood control dams.

• *water system*: earthen or other water-holding tanks for livestock or wildlife, irrigation ditches and gates, etc.

• *other action*: specify other proposed action.

Other Permitting Agencies: Enter the name and administrative units of other agencies that have cultural resource responsibilities, as defined in Section 106 of the NHPA, for the undertaking.

2. ACTIVITY DATA

NMCRIS Activity Number: Enter the NMCRIS Activity Number. This number is a unique identifier assigned by HPD personnel to each cultural resource activity during site registration or prefield records checks. *Activity numbers are not required for archeological surveys with negative results.*

Performing Agency: Enter the agency name and administrative unit performing the activity (e.g., UNM, Office of Contract Archeology). If subcontractors are directly involved in the activity, enter that agency in this field.

Activity ID: If the performing agency has a unique identifying number (e.g., 185-306) for the activity, enter it here. If the performing agency has not assigned an activity number, leave this field blank.

Activity Name: If the performing agency has a unique identifying name (e.g., GBFELTIE Sample Survey) for the activity, enter it here. If the performing agency has not assigned an activity name, leave this field blank.

Activity Dates: Enter the performing agency's starting and ending dates for the activity using the DD-MMM-YYYY format (e.g., 03-MAR-1992). Be sure to consider laboratory research and report preparation as well as the actual field investigations when figuring the activity ending date. For most activities, the report date is an appropriate ending date. If the activity dates are identical to the project dates entered previously, you may write "SAME" in the start date field and leave the ending date field blank. If exact activity dates are not known, use the first day of the month or year for the start date, and the last day of the month or year for the ending date.

Activity Type: Indicate the type(s) of activity conducted from the following list. At least one activity type must be chosen.

• *research design preparation*: development of research designs for fieldwork and/or analyses, to identify goals, priorities, methods, budget and schedule. Also use for cultural resource management plans for protection, stabilization, development, and so on.

• *cultural resources overview or literature review (Class 1 Survey)*: a summary and evaluation of existing archeological data derived from previous work; no field survey is involved in this activity type.

• *archeological testing*: limited excavation, collection, and subsequent laboratory analysis, conducted as part of a research project or a cultural resource management project, to provide information needed by land managers or to answer specific research questions.

• *archeological excavation*: excavation, collection, and subsequent laboratory analysis conducted to recover archeological data as part of a research project or a cultural resource clearance project.

• *archeological survey (Class 2 or 3 Survey)*: inventory, collection, and subsequent laboratory analysis conducted to describe the extent and nature of archeological resources in a specified area as part of a research project or a cultural resource clearance project.

• *collections and non-field studies*: analytical activities focused on existing archeological datasets or collections, or on specialized kinds of data (e.g., dendrochronology, pollen analysis).

• *archeological monitoring or damage assessment*: fieldwork involving the monitoring of construction in archeologically sensitive areas, or the assessment of site damage.

• *ethnographic study*: fieldwork involving informant interviews and/or other ethnographic research. This includes activities relating to traditional cultural properties (TCPs).

• *other activity*: specify the type of activity conducted.

Activity Description (optional): Space is provided for a brief description of larger or more complex activities.

Studies and Analyses Performed: Indicate all formal archeological studies and analyses that were performed as part of the activity. Analyses where methods may not be fully documented, such as simple ceramic type and lithic tool *identifications* performed in the course of survey, should not be indicated in this field.

• *lithic technology*: studies of lithic reduction and tool manufacture.

• *lithic tool typology*: chronological and/or functional studies of chipped or ground stone tools.

• *ceramic technology*: analyses of ceramic manufacturing techniques.

• *ceramic typology*: chronological and/or functional studies of ceramic assemblages.

• *faunal analyses*: studies of non-human bones to investigate prehistoric diet, hunting strategies, season of occupation, etc.

• *human osteology*: description and analysis of human burials.

• *archeomagnetic dating*: measurement of remnant magnetism in burned clay or adobe samples to determine age.

• *obsidian hydration dating*: measurement of hydration rinds on obsidian artifacts to estimate sample age.

• *radiocarbon dating*: assays of radioactive isotopes present in organic materials to estimate sample age.

• *tree-ring dating*: analysis of annual growth rings preserved in wood or charcoal samples to determine age.

• *pollen, phytolith analysis*: botanical analyses of processed sediment samples to quantify microscopic pollen and/or phytolith assemblages.

• *macrobotanical analysis*: botanical analyses of processed sediment samples to quantify larger, macroscopic botanical remains such as seeds and other plant parts.

• *site distribution*: analyses of site locations in relation to topography, vegetation, etc. to describe settlement patterns.

• *isolated artifact distribution*: analyses of isolated artifacts or other non-site phenomena.

• *architectural studies*: intensive recording and analysis of architectural data to document construction techniques and/or building sequences.

• *historic artifact analyses*: chronological and/or functional studies of historic artifact assemblages.

• *historic records studies*: analysis of historic records, such as deed or probate records.

• *soils, stratigraphy, geomorphology*: quantitative and qualitative studies of sediments and soils to outline landscape and archeological site formation processes.

• *geology, lithic materials sourcing*: geological analyses of lithic materials to determine source locations.

• *ethnographic interviews/oral history studies*: analyses of information resulting from informant interviews.

• *other studies*: describe other kinds of analyses or studies that were performed.

3. SURVEY ACTIVITIES

*Note: complete this section of the form only if on-the-ground archeological survey was conducted and archeological survey (Class 2 or 3 Survey) was chosen for **Activity Type.***

Total Area Surveyed: Enter the total acreage actually surveyed.

Total Activity Area: If a Class 2 (sample) survey was conducted, indicate the acreage of the undertaking area, or the portion thereof, that was the focus of the activity. Be sure to include all buffer zones. This figure will be used to compute a survey fraction or percentage. *Leave this item blank if a Class 3 (intensive) survey was conducted.*

Survey Intensity (choose one): Indicate the intensity level most representative of the survey effort:

- *intensive*: the survey attempted to fully record all cultural resources within the survey area: a BLM Class 3 inventory.

- *reconnaissance*: a reconnaissance survey that did not attempt to record all cultural resources within the project area: a BLM Class 2 inventory.

Survey Configuration: Indicate the number and configuration of survey units:

- *number of survey units*: enter the total number of separate parcels that were surveyed. Do not combine adjacent survey units of different configuration (i.e., linear vs. block units), or adjacent sample survey units. A well pad and adjacent access road are counted as two units, as are two randomly chosen survey quadrants.

- *block survey units*: survey was spatially limited by parcel boundaries corresponding to project area or sample unit boundaries; multiple survey-crew sweeps were required to cover the project or sample areas.

- *linear survey units*: survey was conducted parallel to the centerline of a road, pipeline, transmission line, etc.; survey was conducted within a project right-of-way or a transect sample unit, and only one or two survey-crew sweeps were required to cover the project or sample areas.

- *other survey units*: specify the nature of survey units utilized.

Survey Scope (choose one): Indicate the scope most representative of the survey effort:

- *non-selective*: the survey recorded all identified components.

- *selective/thematic*: the survey focused on selected temporal, cultural, or functional components (i.e., some identified components were not recorded).

Survey Coverage (choose one): Indicate the most representative method of survey coverage:

- *systematic pedestrian coverage*: survey was conducted on foot and the survey area was covered systematically (e.g., using systematic transects).

- *other coverage method*: use this classification for any survey method other than systematic pedestrian coverage, for example, when survey was conducted from a moving vehicle, airplane, horseback, etc., or if pedestrian coverage consisted of *random* wandering, checking ridge tops, etc.

Standard Survey Interval: Enter the most representative interval in **meters** between survey crew members or individual transects. If more than one survey interval was used, then enter the interval that, in your judgment, is most representative of the entire survey effort. Do not enter a range of values in this field or an interval that is not expressed as an integer.

Standard Crew Size: Enter the most representative survey crew size. If the number of archeologists per crew varied, enter the crew size that, in your judgment, is most representative of the entire survey effort. Do not enter a range of values in this field or a fractional crew member (even if some crew member really isn't all there).

Source Graphics: Specify the source graphics that were used to plot survey boundaries. In most cases, this will be a USGS 7.5' topographic map, but aerial photographs and photogrammetric plans may also be used. If you use aerial photographs in the field and then transfer survey boundaries to a topographic map, enter *both* sources. Also indicate whether the source graphic is reproduced within the survey report, or if large format maps or photographs are attached to the report or the LA Project/Activity Record.

- *USGS 7.5' topographic maps*

- *other topographic maps*: use for topographic maps derived from photogrammetric and/or cadastral survey methods (e.g., project plans and profiles). Indicate map scale as the ratio between units on the map and the number of corresponding units on the ground (e.g., 1 foot on a 1:24,000 map equals 24,000 feet on the ground; or 1 cm on a 1:200

map equals 200 cm on the ground).

• *rectified aerial photos*: aerial photographs of known scale that have been corrected or rectified to adjust for aircraft altitude and angle, camera focal length, etc., using surveyed ground controls. Indicate ratio scale (e.g., 1:3000, 1:12,000).

• *unrectified aerial photos*: aerial photographs of approximate scale that have *not* been corrected to adjust for aircraft altitude and angle, camera focal length, etc. Indicate approximate ratio scale (e.g., 1:3000, 1:12,000).

• *GPS Unit*: indicate whether a Global Positioning System (GPS) unit was used in the field to locate survey areas.

• *other source*: fully describe all other source graphics.

Survey Results: The following variables summarize the results of survey.

Sites Discovered and Registered: Enter the total number of sites recorded during survey and registered with ARMS (i.e., assigned LA numbers). If no sites were discovered and registered, enter a zero.

Sites Discovered and *Not* Registered: Enter the total number of sites recorded during survey but not registered with ARMS (e.g., sites located outside of NM). Enter a zero if all discovered sites were registered.

Previously Recorded Sites Revisited: Enter the total number of previously registered sites (i.e., sites with LA numbers) that were revisited during survey. If no previously registered sites were revisited, enter a zero.

Total Number of Sites Visited: Enter the total number of sites that were visited during survey. This number should equal the sum of the three previous data items.

Total Isolated Occurrences: Enter the total number of isolated occurrences that were recorded. Enter a zero if no IOs were recorded.

Non-Selective IO Recording? Indicate whether isolated occurrences (IOs) or other non-site phenomena were monitored and recorded in a non-selective fashion.

Land Ownership: Enter the land managing agencies and administrative units (e.g., BLM, Farmington District) currently (i.e., at the time of survey) owning or administrating lands within the surveyed area, the state, and the acres surveyed under that agency's jurisdiction. Private land owners and Land Grants should be combined into a single "Private" category with a single acreage figure. These figures should add up to the **Total Area Surveyed**. Survey acreage from outside NM may be combined and entered as "Other agencies" for each state involved. Situations where there is some uncertainty about land ownership (e.g., "fee" lands, tribal allotments, "withdrawal" lands) should be resolved by consulting with the involved permitting agencies, or may be entered as "Other agencies." Space for entering 3 agencies is provided on the form. Use a continuation sheet to list additional land owners.

Counties/States Surveyed: Indicate the counties represented in the project area by entering the county name and state (e.g., San Juan/NM, Rio Arriba/NM, La Plata/CO).

USGS Quadrangles Included in Surveyed Area: Provide an inventory of *all* USGS 7.5' Quadrangles that were part of the surveyed area. *Note that 15' quadrangles should not be used -- 7.5' quads are now available for all of New Mexico and can be ordered from the USGS.*

Quadrangle Name/Date: Enter the full name of each USGS 7.5' quadrangle that is included in the survey area (e.g., The Pillar SE). Include the state abbreviation if the map is from outside of New Mexico. Quadrangle names are documented in both upper and lower right corners of the map. The publication date of each quadrangle should also be entered. This can be found in the lower right corner of the map, under the quadrangle name. Please enter the *latest* mapping or photorevision date.

Quadrangle Code: Enter the official USGS code for each 7.5' quadrangle that is included in the survey area. USGS maps are assigned codes based on their location within 1¡ blocks of latitude and longitude. Each block is identified by its origin at the southeast corner. For example, Clayton is located in block 36103 (36¡ latitude and 103¡ longitude). Each 1¡ block is further divided into an 8 x 8 matrix of 7.5 minute quadrangles. An alpha-numeric code is used to identify each quadrangle: the north-south (latitude) axis is labeled with the letters A through H, and the east-west axis (longitude) is labeled 1 through 8 (see Figure 3.1). Each quadrangle is identified within the 1¡ block by its origin at the southeast corner. With an origin of 36¡ 15' latitude, 103¡ 30' longitude, the Goat Canyon Quadrangle would have the code 36103-C5.

Alternatively, USGS Quadrangle names and codes may be simply looked up the *Index to Topographic and Other Map Coverage, New Mexico*, published and distributed by the USGS National Mapping Program (editions covering other states are also available). This publication is easy to use and copies are available at no cost from USGS Map Distribution, Box 25286, Federal Center, Denver, CO 80225. The *Index* can also be obtained from ARMS and commercial map dealers. USGS Codes and quadrangle names are also listed on the USGS 1:1,000,000 scale map: *New Mexico 7.5-Minute Quadrangle Names*, available at all commercial map dealers. A portion of this map is reproduced in Figure 3.1.

Previously Registered Sites: Enter the LA numbers of all previously registered sites encountered during survey in NM. Use commas to separate LA numbers and LA number series (e.g., 3456-3459, 12345, 23789, 49087). Long site lists should be included as attachments to this form.

New Sites: Enter the LA numbers of all newly discovered sites in NM. Use commas to separate LA numbers and LA number series (e.g., 3456-3459, 12345, 23789, 49087). Long site lists should be included as attachments to this form. Instructions for requesting LA numbers are outlined in **PROCEDURES**.

4. NON-SURVEY ACTIVITIES

Note: complete this section only if non-survey, site-specific activities were conducted (e.g., data recovery, test excavations, monitoring).

Investigated Sites: Enter the LA numbers of all sites investigated in NM during non-survey field activities. Use commas to separate LA numbers and LA number series (e.g., 12345, 23789, 3456-3459, 9087). Long site lists should be included as attachments to this form.

5. REPORT INFORMATION

Space is provided to enter a single report citation that is associated with the activity. Additional citations may be entered on one or more continuation sheets. The requested information is compatible with the National Park Service's National Archeological Database (NADB) and will be exported from NMCRIS to NPS on a regular basis. Most, but not all, reference information follows *American Antiquity* standards, so users should refer to Volume 57, No. 4 (1993, pp. 763-769) of that journal for guidance. Portions of these standards are reproduced in Appendix 2.

Document Type (choose one): Enter the type of document:

- *report, monograph, or book*: a single report, monograph, or book; this includes all limited distribution contract reports and letter reports.
- *title in an edited collection*: a chapter or separate paper published as part of an edited volume or the proceedings of a meeting or a conference.
- *manuscript*: an unreleased manuscript either in the possession of the author, or on file with the **Report Recipient.**
- *volume in a report series*: a separate volume within a formal publication series or multivolume set.
- *article in a journal*: a journal article.
- *article in a magazine*: a magazine article.
- *dissertation or thesis*: a Ph.D. dissertation, Masters thesis, or undergraduate Honors Thesis/Paper.
- *paper presented at meeting*: draft or notes of an oral presentation at a meeting or conference.
- *other document type*: specify type of document.

Year Issued: Enter the year the report is prepared or published, giving preference to the publication year. Check the field **no date** if a date is not available. If the document is still being reviewed and will be replaced with a final version, check the field entitled **draft?** Please do not enter draft reports or manuscripts if a final version is available or is in press.

Main Author: The main author is the first name listed as author or editor of the report. It is entered as: *Last Name, First Name Middle Initial* (e.g., Marshall, Michael P.). Enter the *full* First Name of the author, and include a period after the middle initial. If the publication is an edited volume, end this field with: *(editor).*

Additional Authors: If the publication has only one author, skip this section. For publications with more than one author or editor, use the format: *First Name Middle Initial Last Name, ... [additional authors] ... and [last author]* (e.g., John R. Stein, Richard W. Loose, and Judith E. Novotny). Enter the *full* First Name of each author, and include a period after each middle initial. For multiple editors, end this field with: *(editors).*

Title #1: Enter the **complete** title of the document, including subtitles and without abbreviations (unless the title contains abbreviations). Subtitles should be separated from the main title by a colon. Also include any title modifiers (e.g., *vol. 3, translated byÉ, 3rd edition*), after the title and a comma separator. Do not end the title with a period. If the document has no title, compose one using key words from the introduction, the kind of activity reported, the location of the action, etc., and surround it with double quotation marks ("). For unpublished letter reports, enter: Letter Report: <subject>, where subject contains information about the project, the agencies involved, and nature of the archeological activity reported. If a document comprises two or more uniquely titled volumes, each should be entered on a continuation form as a separate reference with its volume number included after its title.

Title #2 (additional citation data): The contents of this field depend on the type of document being cited. If the **Document Type** is anything other than a *report, monograph, or book,* you should consult *American Antiquity* standards, portions of which are reproduced and annotated in Appendix 2, for guidance in completing this field. *Most contract archeology reports do not require any information to be entered in this field.*

ARMS only: **Filing Location & Method:** Used by ARMS staff to indicate the filing location of the report. For reports with no **Performing Agency Report No.,** the report date should be entered in **Filing Method**.

- *ARMS stacks, Preparing Agency*
- *ARMS stacks, Performing Agency*
- *ARMS stacks, Publishing Agency*
- *ARMS stacks, Report Recipient*
- *ARMS stacks, Sponsoring Agency*
- *ARMS stacks, General Survey*
- *ARMS site files*
- *ARMS general library*
- *HPD Library/files*
- *LOA Library*
- *LOA Archive*
- *no report on file, reference only*
- *other location*: specify location and filing method.

Prepared By: Identify the agency and administrative unit that prepared the document. This is usually, but not always, the performing agency.

Preparing Agency Report No.: Enter the identification given to the report by the preparing agency exactly as it appears on the title page. This is commonly a formatted report number (e.g., 185-345, HSR 9135) where a year and/or a consecutive report number is indicated. In cases where there is no report number, leave this field blank.

Published By: If an entity other than the **Prepared By** agency has published the report, identify the publisher and its location (e.g., University of New Mexico Press, Albuquerque, NM). A document is considered published if it explicitly indicates so, and/or it contains a Library of Congress catalog number, an ISBN number, or an ISSN number. It is not necessary, however, to specify the publisher for journals.

Report Recipient: Enter the name of the individual, company, or agency that the report was prepared for. Indicate internal administrative units, if appropriate. *Leave this field blank if the report was not produced under contract.*

Other Agency Report Nos.: Enter the identification numbers assigned to the report by the sponsoring agency or other involved agencies and identify the assigning agency (e.g., "1993-10-012 (USFS, Santa Fe NF)", "93(III)028F (BLM, Farmington District)").

4. THE LA SITE RECORD

The LA Site Record captures information relating to a single archeological site and the recording activities associated with a single investigation. The form is completed whenever *any* investigation is conducted at a site. This can be the initial discovery and recording of a site, its testing or excavation, or simply a routine site visit to assess condition. The form is completed by the

performing agency, but several data items are reserved for use by the sponsoring agency and the New Mexico SHPO. Site forms are submitted to the sponsoring agency by the performing agency, usually along with other site records (e.g., analysis records, photographs, specimen catalogs), a report, and a completed LA Project/Activity Record. These materials are then transferred to the Historic Preservation Division by the sponsoring agency to support Section 106 consultations, and the data are subsequently validated and incorporated into NMCRIS.

In designing this data form, an important goal has been to provide the means to accurately record *any* archeological site, no matter how simple or complex, without exceeding the interpretive limits of the available physical data. Archeologists faced with complex site recording situations should not be severely limited by the data items on the LA Site Record, nor should investigators in simpler situations be required or encouraged to exceed the limits of their data by the form. Another important design goal has been to provide a data form flexible enough to allow archeologists and land managers to make site recording decisions that *make sense* in their particular situations, and reflect their specific knowledge and understanding of the supporting data. Please read this chapter carefully, use the form in the field, and then let us know if we have met these goals.

This chapter of the **NMCRIS User's Guide** provides instructions on how to complete the LA Site Record. Some of the basic data entities and concepts are new to those completing this form, so some specific definitions must be considered before item-by-item instructions are presented.

DEFINING ARCHEOLOGICAL SITES

What is a site? How should sites be defined? From a researcher's perspective, the answer to these questions is simple: sites should be defined and recorded so data relevant to one's research questions are generated in the process. The answer is not, however, simple for a statewide archeological database with over 60 years of time depth and literally hundreds of contributors. There simply cannot be a single, consistent site definition in this situation. Given that archeological research questions have varied considerably over the past 60 years and will continue to do so, it is inappropriate for ARMS to impose restrictive site definition criteria. Site definition and recording depends on one's research questions and/or management needs and are made by land managers and/or archeologists -- not by ARMS. Although the lack of a consistent definition for archeological sites would appear to be major obstacle for research, data are maintained in NMCRIS that allow investigators to filter out most sites that do not meet their research requirements.

Consequently, our operational definition for sites is simple: *Archeological sites are spatially finite areas containing physical remains of past human activity that are of interest to archeologists.* No restrictions on site age, size, configuration, or contents are imposed by ARMS and our policy is to not question any site definition or recording strategy unless they threaten the integrity of the database or result in the loss or distortion of important site information. ARMS will question any interpretations that obviously exceed the limitations of the available physical data. In any case, ARMS will attempt to contact the recording archeologist and any land managers involved before making major changes to a site record.

In general, sites should be located, bounded, and documented through field observations in order to be registered. This point is especially important in recording portions of linear features such as roads, trails, and acequia systems. Only those linear segments that have been fully recorded on the ground can be registered as sites. Segments of a historic (or prehistoric) road or trail that appear on maps or aerial photographs may be assumed to be related to documented portions of these linear features, but without direct observation and defined boundaries the undocumented segments cannot be registered as archeological sites. There are, however, ways to relate documented segments of a linear feature to other associated sites. This subject is considered below under **Defining and Recording Other Archeological Entities**.

In NMCRIS, site area is represented by a single point plotted on a USGS 7.5' quadrangle, recorded in the Universal Transverse Mercator (UTM) rectangular coordinates, and one or more measurements of site size (i.e., area, maximum length and width). In the future, exceptions will be made for larger sites which are represented as polygons, also registered in the UTM grid. Other than the requirement that sites consist of a single bounded area, there are no restrictions on the spatial configuration of sites. In some situations, sites may overlap the area of other sites or may even be located entirely within larger sites. These situations are rare, however, and are usually limited to very complex sites with multiple occupations. Further, nested or overlapping site areas usually require detailed observations based on intensive surface survey or excavation.

As previously discussed, the process of site definition is generally left up to the field archeologist and land manager. The process of site definition must consider the needs of both management and research and, consequently, must be flexible. This is especially true in recording situations where it is difficult to define discrete archeological sites, or where sites reflect multiple occupations. The former case involving diffuse archeological remains, or archeological *landscapes*, may be handled through the application of arbitrary boundary definition criteria during survey. If less arbitrary boundaries are identified during subsequent, more intensive investigations, new sites may be defined or old ones redefined to reflect the most recent definitions.

Defining sites with multiple occupations is a bit more tricky. If multiple components can be *physically* separated on the basis of assemblage or feature distributions, they may instead be defined as separate sites. Such sites may be discrete and adjacent,

or their boundaries can be defined so that the sites partially overlap. This site definition strategy is most appropriate when the data exist to support physical separation, and when a multicomponent site definition would mask or distort critical data such as size, location or condition for one of the components. For example, a small, discrete lithic scatter located entirely within a much larger historic mining complex or townsite would be a good candidate for a separate site definition. In this case, physical separation is possible owing to the discrete boundary of the lithic scatter, and multiple site definition is desirable so that the smaller size of the prehistoric component is not masked by the historic component. If, however, the prehistoric component had less discrete boundaries, or if the boundaries were created by disturbance during the historic occupation, a multicomponent definition would be more appropriate. There are many other situations where separating multiple components might be appropriate. The point is, if site definitions are documented, justified, and applied consistently by the field archeologist, and if they are acceptable to the involved land managers, they will rarely be questioned by ARMS.

DEFINING OTHER ARCHEOLOGICAL ENTITIES

Use of the LA Site Record is restricted to archeological *sites*, but other archeological phenomena are frequently encountered that warrant or require attention by researchers and land managers. These include **isolated occurrences** (IOs), arbitrary spatial entities such as archeological or historic **districts**, and **linear features**, which are, in a sense, archeological *metasites*. NMCRIS will be expanded to systematically handle some of these important entities through a Geographic Information System (GIS), but until this happens locational and descriptive information should be included in archeological reports. It is also advisable to include district or linear feature names (e.g., Elephant Mountain Archeological District, Santa Fe Trail) within the names of any related archeological sites.

Documented *segments* of linear features and *contributing sites* within districts may be recorded on the LA Site Record, but *entire* linear features such as the Butterfield Trail or the Camino Real cannot be recorded on this form unless comprehensive on-the-ground survey has been conducted. Archeological districts and isolated occurrences also must not be recorded on the LA Site Record.

Isolated Occurrences. Isolated occurrences are not assigned LA numbers and there is no *official* Laboratory of Anthropology form for these finds. IOs should be recorded during survey and documented by including provenience information (point locations represented by UTM coordinates), and item descriptions in reports. Most state and federal land-managing agencies require that all IOs encountered during survey be systematically recorded.

Districts. Districts are groups of archeological or architectural sites within one or more bounded areas that are associated by virtue of some common theme or historical context. Sites contained within a district may or may not be listed on the State or National Registers of Historic Places (i.e., as contributing or non-contributing sites or structures). Districts are represented as one or more polygons and are assigned unique district numbers by HPD. Links to associated archeological or architectural properties will be maintained in NMCRIS through LA site numbers and/or HPD property numbers.

Linear Features. Roads, trails, railroad beds, acequia systems, and other linear features exhibit continuity of function based on some combination of physical evidence and historical fact, and are associated with archeological and/or historical sites along their course. In this, linear features are a type of district. Linear features are represented by one or more lines or arcs which may or may not intersect and will be assigned unique feature numbers within NMCRIS. These features will be linked to associated archeological and/or architectural sites through LA site numbers and/or HPD property numbers, respectively.

COMPLETING THE LA SITE RECORD

The LA Site Record is divided into 13 sections:

1. Identification & Ownership (site numbers, site names, land owners, etc.).

2. Recording Information (information relating to your site visit: work performed, collection strategy, repository data, etc.).

3. Condition (information on disturbance such as erosion and vandalism, and overall site integrity).

4. Recommendations (opinions regarding site significance, project impact, and treatment recommendations).

5. SHPO Consultations (information concerning determinations of National Register eligibility. *These fields are reserved for SHPO use only*).

6. Location (UTM coordinates, PLSS location, map references, directions to site, etc.).

7. Physical Description (information on site size, boundaries, local environment, subsurface deposits, etc.).

8. Assemblage Data (presence or absence of various artifact and material types, dating potential).

9. Cultural/Temporal Affiliations (information on culture, period of occupation, archeological phase, for one or

more temporal components).

10. Feature Data (inventory of features or feature types observed on the site: feature type, number observed, component associations, etc.).

11. References (related publications, informants, archival records, etc.).

12. Narrative Description (narrative description of the site, consideration of site function, relationships to other nearby sites, etc.).

13. Site Record Attachments (inventory of maps and other records associated with the site that are attached to the LA Site Record).

Item-by-item instructions for completing the LA Site Record are presented below. These fields are indicated on the form and in the instructions. Data items are defined and described in the order of their appearance on the form. *All applicable data items must be completed.* In multiple-choice data items, all applicable choices should be indicated (i.e., "choose all that apply") unless otherwise noted (e.g., "choose one"). As mentioned previously several data items are reserved for use by the sponsoring agency and the New Mexico SHPO. For new sites, all sections of the form should be completed. For updates of previously recorded sites, Sections 1-4 (pages 1 and 2) are mandatory -- the remainder of the form should be completed if the site has not been recorded on the LA Site Record, or if existing information on the site is incorrect or incomplete. Also, see Chapter 5 (**Requirements for Submitting Archeological Records**) for more information on submitting the LA Site Record and other associated records to HPD.

1. IDENTIFICATION & OWNERSHIP

LA Number: Enter the LA number assigned to the site. The Laboratory of Anthropology number is a unique site designation assigned by ARMS. The LA numbering system was started by the Laboratory of Anthropology in 1931, and has been maintained over the years by the Museum of New Mexico and, since 1985, by the Historic Preservation Division. LA numbers consist of simple integers (e.g., LA 11850, LA 23098) that are assigned sequentially as new sites are registered. Archeological sites are registered and assigned LA numbers with the following provisions:

- no site entity can have more than one LA number; and
- no group of site entities can have the same LA number.

LA numbers should be requested after the completion of field work and a map check with ARMS and other land managing agency records. To minimize confusion, LA numbers should be obtained as early as possible and be used in all reports and other forms of documentation.

Site Update?: Indicate previously recorded properties with a check mark. If the existing NMCRIS data are complete and accurate, only pages 1 and 2 of the LA Site Record must be completed. If the site has not been recorded on the LA Site Record, or if existing information is incorrect or missing, Sections 6-12 must also be completed. Alternatively, a computer-generated site record or a photocopy of the original site form may be attached to pages 1-2 of the form, on which errors have been corrected and missing information provided.

Site Name(s): Enter any names associated with the site (e.g., Pindi Pueblo, Salmon Ruin, Tunnard Site). The pre-survey records check should provide information on previously named sites in your survey area. Unnamed sites may be named by project personnel, but these names should not be included on the LA form unless they appear in a written report or other publication. If there are several known spellings, enter these as well. Also note the source of the name on the form if it is obscure. Was it derived from the topographic quadrangle? Is it a local name, or was it supplied by the survey crew? Finally, if the site is related to a registered archeological district or a linear feature such as the Butterfield Trail, this fact should be reflected in the site's name (e.g., Butterfield Trail -- Barney's Station).

Other Site Numbers: If you know of any other site numbers that refer to the site being recorded, enter these designations. Most federal agencies assign unique site numbers to sites located on lands under their administration (e.g., USFS: AR-03-08-03-00345, BLM: NM-01-4529), and many archeological institutions also maintain a site inventory using unique site numbers (e.g., OCA:319:56, NMSU-1348). It is important that the format of agency site numbers be entered consistently and that they adhere to agency standards. Note that temporary site numbers assigned in the field by the performing agency are entered under **Field Site Number**, as described in Section 2 (**Recording Information**) of the LA Site Record.

Agency Assigning Number: Enter the agency or institution associated with each site number entered in **Other Site Numbers**.

Current Site Owner(s): For sites that are owned by one or more governmental entities, enter the agency names and administrative units involved (e.g., BLM-Farmington District). For privately owned sites, enter the owner's name and address, if known; enter "private" if the current site owner is not known. If the site is located on a land grant, also enter the name of the grant. Note that owner names and addresses are not included in the NMCRIS database.

2. RECORDING INFORMATION

NMCRIS Activity Number: Enter the NMCRIS Activity Number that was assigned during registration of the site. Procedures for obtaining NMCRIS Activity Numbers are outlined in Chapter 6 (**Using NMCRIS**).

Field Site Number: Enter the field site number, if any, assigned during your visit. It is common for a performing agency to assign a unique field number to each site during recording so that all field notes, photographs, and collected artifacts can be associated. Be sure to maintain consistency in the format of field site numbers assigned during your project or activity and adhere to your organization's standards.

Site Marker?: Indicate whether any identification markers were observed or installed during field recording, and what identification numbers were noted or used. All markers should be clearly indicated on the site sketch map. This item is not entered into the NMCRIS database.

Recorder(s): Enter the name(s) of the individual(s) recording the site. Last names with or without first initials are appropriate. This item is not entered into the NMCRIS database.

Agency: Enter institutional affiliation, if any, of the individuals recording the site. This item is not entered into the NMCRIS database.

Recording Date: Enter the latest date on which the site was recorded using the DD-MMM-YYYY format (e.g., 03-MAR-1992). Use the first of the month or year if the exact recording date is unknown.

Site Accessibility (choose one): Indicate site accessibility at the time of your visit by choosing one of the following:

- *accessible*: the site can be located and visited.
- *buried*: the site can be located, but is covered by culturally sterile deposits.
- *flooded*: the site can be located, but is seasonally or permanently inundated.
- *urbanized*: the site has been "built over" within an urban area or by a paved road, but some portion remains intact and can be located.
- *not accessible*: the site could not be relocated. If the site has been destroyed, indicate this in Section 3 (**Condition**) of the form.

Surface Visibility (choose one): Estimate the proportion of the site surface that is visible through vegetative or other kinds of cover (e.g., snow, intrusive fill) by choosing one of the six percentage classes (0%, 1 - 25%, 26-50%, 51-75%, 76-99%, 100%). Remarks concerning surface visibility during your site visit may also be entered.

Recording Activities: Identify all activities conducted as part of your site visit from the following list:

- *sketch mapping*: paced or taped maps with an approximate scale were produced on site.
- *instrument mapping*: survey instruments (e.g., transit, alidade) were used to produce a site map with an exact scale.
- *surface collection*: controlled or uncontrolled collections of surface artifacts were made.
- *in-field artifact analysis*: quantitative and qualitative data were collected during site recording for subsequent analysis.
- *photography*: photographic documentation of the site was made.
- *shovel or trowel tests; probes*: informal, limited test excavations were conducted without establishing horizontal or vertical controls (other than a site sketch map).
- *test excavation*: formal test excavations involving the establishment of three-dimensional excavation control were performed.
- *excavation (data recovery)*: formal excavations with three-dimensional excavation control were conducted.
- *other activities*: if the above choices are inadequate -- for example, if you performed a magnetometer survey -- check this category and describe the activities.

Description of Analysis or Excavation Activities: If relevant, use this space to briefly describe any in-field analyses or excavations conducted, referencing the appropriate report(s) and other project-related documents. For excavations, note if the site was backfilled, and what kind of subsurface markers (e.g., black plastic, coins), if any, were left in excavation units and/or features. Also, be sure to identify tested/excavated areas on the attached site map(s). This item is not entered into the NMCRIS database.

Photographic Documentation: Identify the media, roll numbers, and frame numbers of any photographic documentation made during your site visit. This item is not entered into the NMCRIS database.

Surface Collection (choose one): Indicate the nature of surface collections made at the site by choosing one of the following:

- *no surface collections*: no surface collections of any kind were made.
- *uncontrolled surface collections*: collections were made but provenience was not maintained; a "grab" sample was taken.
- *collections of specific items*: collections focused on specific artifact types (e.g., diagnostic pottery or projectile points) and the provenience of these items was recorded.
- *controlled surface collections (sample)*: provenienced collections of some portion of the site were made.
- *controlled surface collection (complete)*: provenienced collections of the entire site were made.
- *other collection method*: if the above choices are inadequate, check this category and describe the collection strategy under **Surface Collection Methods**.

Surface Collection Methods: If appropriate, briefly describe the methods and sampling techniques used during surface collection. For very complex surface collection methods, you may instead reference the appropriate report(s) and other records (e.g., "see survey report, pp. 123-134"). Note whether any physical markers were left on the site indicating collected areas and identify all collection units on the attached site map(s). This item is not entered into the NMCRIS database.

Records Inventory: Identify all site-specific records that were generated as a result of your site visit.

- *site location map*: a USGS 7.5' quadrangle showing the location of the recorded site; *the location of each site must be documented on a USGS 7.5' quadrangle and attached to the LA Site Record.*
- *sketch map(s)*: site plans prepared without the aid of surveying instruments; *at least one sketch map must accompany this form*.
- *instrument map(s)*: site plans prepared using surveying instruments.
- *excavation, collection, analysis records*: field specimen sheets, artifact and sample catalogs, forms, drawings, excavation unit plans and profiles, analysis forms, graphics, etc.
- *photos, slides, & associated records*: prints, slides, and negatives taken on-site; also roll-and-frame records.
- *field journals, notes*: daily journals or notes pertaining to the site.
- *NM Historic Building Inventory (HBI) form*: (see Appendix 3); a copy of a HBI form is required by HPD for standing historic structures.
- *other records*: specify other kinds of records resulting from your site visit.

Repository for Original Site Records: Specify the institution where the *original* records for this site will ultimately reside.

Repository for Collected Artifacts: Specify the institution where collections from this site will ultimately be curated, usually according to a formal curation agreement.

3. CONDITION

Archeological Status: Indicate the cumulative archeological status of the site at the end of your visit by choosing one or more of the following categories. Do not consider vandalism in determining archeological status.

- *surface collection*: the site has been subjected to surface collection.
- *test excavation*: the site has been subjected to limited test excavations.
- *partial excavation*: the site has been excavated for the purpose of data recovery, but a significant portion of the site remains intact.
- *complete excavation*: the site has been completely excavated for the purpose of data recovery.

Disturbance Sources: Keeping in mind that *all* sites are disturbed in some way, specify all significant sources of disturbance observed on the site. If the physical evidence is localized, as in potholes or arroyo cuts, include this information on the site sketch map.

• *wind erosion*: the site has been subject to significant wind erosion (e.g., dune blowouts or "lag" artifact scatters).

• *water erosion*: the site has been subject to significant water erosion (e.g., arroyo cutting or sheet washing of midden materials).

• *bioturbation*: burrowing rodents, birds, insects, etc. or intense grazing has seriously disturbed subsurface archeological deposits.

• *vandalism*: unauthorized, non-scientific excavations have been performed on site or archeological features or deposits have been destroyed or defaced; use this category to indicate that unauthorized surface collection is known to have occurred on the site.

• *construction/land development*: the site has been disturbed by construction or land development actions.

• *other source*: specify other sources of disturbance.

Vandalism: If vandalism has occurred on the site, indicate the type of disturbances observed. Plotting the locations of potholes on the site sketch map and making a detailed photograph record is also important.

• *defaced glyphs*: petroglyphs or pictographs are defaced or destroyed (e.g., recent pecking, "quarried" panels, spray paint, bullet holes).

• *damaged/defaced architecture*: standing architectural features are damaged or destroyed (e.g., structural components salvaged, bullet holes).

• *surface disturbance*: evidence of disturbance is limited to the surface of the site, the assemblage, and exposed features (e.g., vehicle tracks, artifact collection piles, disturbed walls).

• *manual excavation*: potholes and spoils piles are present.

• *mechanical excavation*: backhoe trenches or bladed areas are present.

• *other vandalism*: specify other forms of vandalism.

Percentage of Site Intact (choose one): Estimate the proportion of the site that remains undisturbed using the six percentage classes (0%, 1 - 25%, 26-50%, 51-75%, 76-99%, 100%). Consider *all* sources of disturbance, including archeological investigations, in this estimate.

Observations on Site Condition: Use the provided space to expand on or amplify the site's condition during your visit. Consider the impact of vandalism and other sources of disturbance on the research potential of the site. Also discuss the implications of the site's integrity for National Register eligibility. Finally, identify and describe any sources of disturbance that may adversely affect the site in the future. If the site is especially vulnerable to vandalism or is adjacent to a construction zone, describe the situation and make recommendations to remedy foreseeable adverse impacts (e.g., avoidance, monitoring, fencing).

4. RECOMMENDATIONS

National Register Eligibility (choose one): If the site is not already listed on the National Register of Historic Places (NRHP), indicate your *opinion* on whether the site is eligible by choosing one of the following categories. Justify your choice under **Basis for Recommendation**. If the site is already listed, leave this field blank.

• *eligible*: the site considered potentially eligible to the NRHP.

• *not eligible*: the site is not considered eligible to the NRHP.

• *not sure*: additional information is required to form an opinion on NRHP eligibility.

Applicable Criteria: If you consider the site to be eligible, specify all appropriate NRHP criteria. Obviously most archeological sites will fall under criteria "d," but it is important that you consider other areas of significance.

• *criterion a*: the site is associated with events that have made a significant contribution to the broad patterns of our history.

• *criterion b*: the site is associated with lives of persons significant in our past.

• *criterion c*: the site exemplifies a distinctive type, period, or method of construction, or the work of a master, or a high artistic quality.

• *criterion d*: the site has yielded, or is likely to yield, information important in prehistory or history.

Basis for Recommendation: Use the provided comment space to justify your recommendation of NRHP eligibility. If the site is eligible under criterion "d," discuss the kinds of information that the site may yield, and the relevance of that information to history and prehistory. If the site is not, in your opinion, considered eligible, or if more information is required to make a recommendation, explain the situation fully. This information is critical to future management decisions and may be expanded upon as necessary in Section 12 (**Narrative Description**) of the form. If you think formal testing is essential to determine eligibility, say so. But if at all possible, offer an opinion about eligibility and describe the basis for that opinion -- shovel tests, trowel probes, examination of roadcuts or arroyo banks, the depositional or erosional setting of the site.

Assessment of Project Impact: If appropriate, assess the likelihood that the site will be affected by an undertaking and specify the nature and extent of the effect. Be sure to illustrate the relationship of the site to project plans in the site sketch map.

Note: Do not provide assessments of project impact without first consulting with the sponsoring agency.

Treatment Recommendations: If the site is likely to be affected by an undertaking, suggest the most appropriate treatment. Can/should the site be avoided? Should it be fenced? Is data recovery warranted?

Note: Do not provide treatment recommendations without first consulting with the sponsoring agency.

5. SHPO CONSULTATIONS

Note: This section of the form is reserved for HPD internal use.

SHPO Determination (choose one): Indicate the consensus determination of NRHP eligibility between the Agency and SHPO for the site by choosing one of the following:

- *eligible*: the site was determined potentially eligible to the NRHP.
- *not eligible*: the site was determined NOT eligible to the NRHP.
- *not determined*: no determination of NRHP eligibility was made.

Applicable Criteria: If the site was determined eligible, specify all appropriate NRHP criteria (a, b, c, d) as described previously under Section 4 (**Recommendations**).

Date: Enter the date of the consultation in the format: DD-MMM-YYYY (e.g., 23JUN1993).

HPD Log No.: Enter the HPD Log Numbers associated with the consultation.

Register Status: If the consultation resulted in listing of the site on the State or National Register of Historic Places, indicate the current registration status of the site:

- *listed on National Register*: the site is listed on the National Register of Historic Places.
- *listed on State Register*: the site is listed on the State Register of Historic Properties.
- *formal determination of eligibility*: the site has been determined eligible by the Keeper of National Register of Historic Places.

State Register No.: If the site has been listed on the State Register of Historic Properties, enter its identification number here.

Remarks: Enter notes concerning SHPO consultations on the site.

6. LOCATION

Source Graphics: Specify the source graphics used to plot the site's location. In most cases, this will be a USGS 7.5' topographic map, but aerial photographs and photogrammetric plans may also be used. If you use aerial photographs in the field and then transfer site locations to a topographic map, enter *both* sources.

- *USGS 7.5' topographic maps.*
- *other topographic maps*: topographic maps derived from photogrammetric and/or cadastral survey methods (e.g., project plans and profiles). Indicate map scale as the ratio between units on the map and the number of corresponding units on the ground (e.g., 1 foot on a 1:24,000 map equals 24,000 feet on the ground; or 1 cm on a 1:200 map equals 200 cm on the ground).
- *rectified aerial photos*: aerial photographs of known scale that have been corrected or rectified to adjust for aircraft altitude and angle, camera focal length, etc., using surveyed ground controls. Indicate ratio scale (e.g., 1:3,000, 1:12,000).

• *unrectified aerial photos*: aerial photographs of approximate scale that have *not* been corrected to adjust for aircraft altitude and angle, camera focal length, etc. Indicate approximate ratio scale (e.g., 1:3,000, 1:12,000).

• *GPS Unit*: indicate whether a Global Positioning System (GPS) unit was used in the field to locate the site.

• *other source*: fully describe all other source graphics.

UTM Coordinates: The Universal Transverse Mercator (UTM) grid system is used by NMCRIS to record the locations of archeological sites. A single UTM coordinate referencing the geographical *center* of each site is required for all sites. For sites larger than 10 acres, provide at least four points around the periphery in addition to the center point. List these additional UTM coordinates in the **Narrative Site Description** or on a continuation sheet, and should be plotted on the site location map. *Please note that in NMCRIS, the UTM coordinates refer to geographical features on USGS quadrangles and must therefore be referenced to the 1927 North American Datum (NAD27).* Although the USGS has stated that they will be abandoning NAD27 on future topographic maps in favor of the 1983 datum (NAD83), it will be years before this switch is complete. *Until the transition is complete, NAD83 coordinates must be converted to NAD27.* All currently available 7.5' quadrangles use NAD27, but archeologists should be aware of the different datums and the fact that many GPS units and their related data conversion programs provide NAD83 UTM coordinates which must be converted. UTM datum information is found in the bottom left-hand corner of quadrangles prepared after 1983. The offset between NAD27 and NAD83 grids varies from 45 to 60 meters in NM and is documented on post-1983 maps at all four map corners by small targets. Note that all maps prepared before 1983 are unlabeled, but use the NAD27 datum.

Zone: Enter the UTM Zone. The UTM system divides the earth into a grid of trapezoidal cells originating about the intersection of the equator and the central meridian. There are 60 north-south zones in this system, each 6¡ longitude wide. Zone 1 has its initial meridian located at 177¡ west longitude. Zone numbers increase consecutively in an eastward direction with zone 60 having its central meridian at 177¡ east longitude. Zones 12 and 13 occur in New Mexico, west and east of 108¡ longitude, respectively. The UTM system also has 20 east-west zones, each nominally 8¡ high in latitude, which are labeled with the letters C through X. These letters are not normally used in expressing map coordinates, however. The zone for each USGS 7.5' Quadrangle is listed in the lower left corner of the map.

Easting / Northing: Enter the UTM Easting and Northing coordinates for the site center point. UTM points are referenced by the distance in meters from a north-south reference line (easting), and the distance in meters from the Equator (northing). The north-south reference line has a *false easting* of 500,000 m at the central meridian of each zone. UTM eastings and northings are marked as blue ticks along the outside edge of almost all topographic quadrangles. Please do not attempt to extend the UTM grid onto adjacent quads that lack UTM tick-marks -- just leave the UTM coordinates blank and note the reason on the form. To assign a UTM location to a site, lines connecting easting and northing ticks should be drawn on a USGS topographic quadrangle, dividing the area of interest into a grid of 1 square kilometer cells (UTM gridlines are printed on many recent USGS quads). As illustrated in Figure 4.1, measurements must originate at the *southwest* corner of a square kilometer cell. The blue ticks along the outside edge of the quadrangle are in 1 kilometer (1000 meter) increments; thus, a northing of $_{40}$97 translates to 4,097,000 meters north of the equator. The UTM coordinates of a site situated 420 meters north and 650 meters east of the intersection of the $_{40}$97 northing and $_{2}$54 easting lines in zone 13 would be: Zone 13: E 254650, N 4097420. Unless cadastral survey instruments or Global Positioning units are used to compute site coordinates, all UTM references should be rounded to the nearest 10 meter interval. UTM templates are available from forestry and engineering supply companies. See *National Register Bulletin #16* (pp. 80-81) or Greenhood (1964:134) for detailed instructions on measuring UTM coordinates.

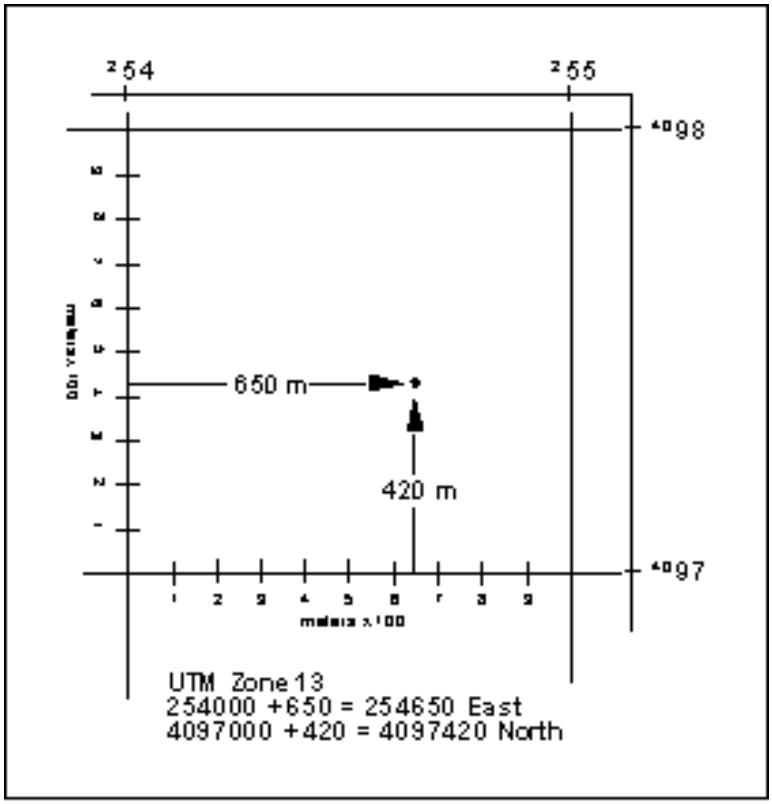

Figure 4.1. Determination of UTM Coordi

Nearest Named Drainage: Note the drainage nearest the site for which a name is provided on the topographic quadrangle. Also enter the direction (i.e., N, NE, E, etc.) and the approximate distance in meters from the site to the drainage. This information will help others quickly relocate the site.

Nearest Numbered Road: Enter the official designation of the highway nearest to the site for which a number is provided on a NM highway map (1988 or later edition) or local signs. Consider county and tribal roads, as well as federal and state highways. Precede interstate highway numbers with "I-" (e.g., I-40, I-25), federal highways with "US-" (e.g., US-285, US-85), state highways with "NM-" (e.g., NM-3, NM-457), and county roads with the county name (e.g., San Juan-10, Do–a Ana-345). Precede tribal road numbers with the tribe name (e.g., Navajo-350, Jicarilla-45). Enter the direction (i.e., N, NE, E, etc.) and the approximate distance in meters to the road from the site. Also indicate whether the site extends into the highway right-of-way. This information will help others quickly relocate the site and assist the NM State Highway and Transportation Department track sites that may be affected by road maintenance. In addition, this information can also be used to identify the more accessible sites that may be subject to frequent visitation and vandalism.

Directions to Site: Provide a brief description of the site's location, using named landmarks when possible (e.g., "site is located 1 mile east of the junction of NM-30 and NM-502, 200 m south of the NM-30 right-of-way" or "site is on first bench on north side of Bear Wallow Canyon, 1 km west of Bear Spring"). Keep in mind that someone else may have to use this information to relocate the site, so be brief but explicit. This space may also be used to record azimuths to prominent landmarks that were used to locate the site on the map. This item is not entered into the NMCRIS database.

Town: Enter the name of the city or town if the site is located within the boundaries of a municipality.

State: Enter the state(s) that the site is located in, using standard US Postal Service abbreviations (e.g., NM (New Mexico), CO (Colorado), AZ (Arizona)).

County: Enter the county or counties that the site is located within.

USGS Quadrangles: Enter the name, date and USGS code for all USGS 7.5' quadrangles the site is located on. Space for entering two quadrangles is provided. If a site is located on more than two quadrangles, enter the additional map information on a continuation sheet. *Note that 15' quadrangles should not be used -- 7.5' quads are now available for all of New Mexico and can be ordered from the USGS.*

> **Quadrangle Name and Date:** Enter the full name of the USGS 7.5' Quadrangle(s) showing the site's location. Quadrangle names are documented in both upper and lower right corners of the map. The publication date of the quadrangle should also be entered (e.g., The Pillar SE 1966). This can be found in the lower right corner of the map,

under the quadrangle name. Please use the *latest* mapping or photorevision date.

Quadrangle Code: Enter the official USGS code for each 7.5' quadrangle showing the site's location. USGS maps are assigned codes based on their location within 1¡ blocks of latitude and longitude. Each block is identified by its origin at the southeast corner. For example, Clayton is located in block 36103 (36¡ latitude and 103¡ longitude). Each 1¡ block is further divided into an 8 x 8 matrix of 7.5 minute quadrangles. An alpha-numeric code is used to identify each quadrangle: the north-south (latitude) axis is labeled with the letters A through H, and the east-west axis (longitude) is labeled 1 through 8 (see Figure 3.1). Each quadrangle is identified within the 1¡ block by its origin at the southeast corner. With an origin of 36¡ 15' latitude, 103¡ 30' longitude, the Goat Canyon Quadrangle would have the code 36103-C5.

Alternatively, USGS Quadrangle names and codes may be simply looked up the *Index to Topographic and Other Map Coverage, New Mexico*, published and distributed by the USGS National Mapping Program (editions covering other states are also available). This publication is easy to use and copies are available at no cost from USGS Map Distribution, Box 25286, Federal Center, Denver, CO 80225. The *Index* can also be obtained from ARMS and commercial map dealers. USGS Codes and quadrangle names are also listed on the USGS 1:1,000,000 scale map: *New Mexico 7.5-Minute Quadrangle Names*, available at all commercial map dealers. A portion of this map is reproduced in Figure 3.1.

PLSS Reference: Enter PLSS reference information for the site. The Public Land Survey System (PLSS) is the result of a series of federally mandated surveys which divided most of the western United States into blocks of land, or townships, that are nominally 6 miles on a side (Figure 4.2). Townships are further subdivided into 36 1-mile-square sections. Space for entering two township/section designations is provided. If a site is located on more than two sections, continue the description on a continuation sheet. Note that PLSS locations are NOT true legal property descriptions and serve mainly as a map references in NMCRIS. Also note that PLSS locations below the section level are not entered into NMCRIS.

PLSS Meridian: Enter the names of the PLSS principal meridians for the site location. This information is documented in the lower left corner of each USGS quadrangle. The origin point for the PLSS in New Mexico and southwestern Colorado is east of San Acacia in the Rio Grande Valley. This point marks the intersection of the north-south principal meridian (the **New Mexico Principal Meridian**, or **NMPM**) and an east-west base line.

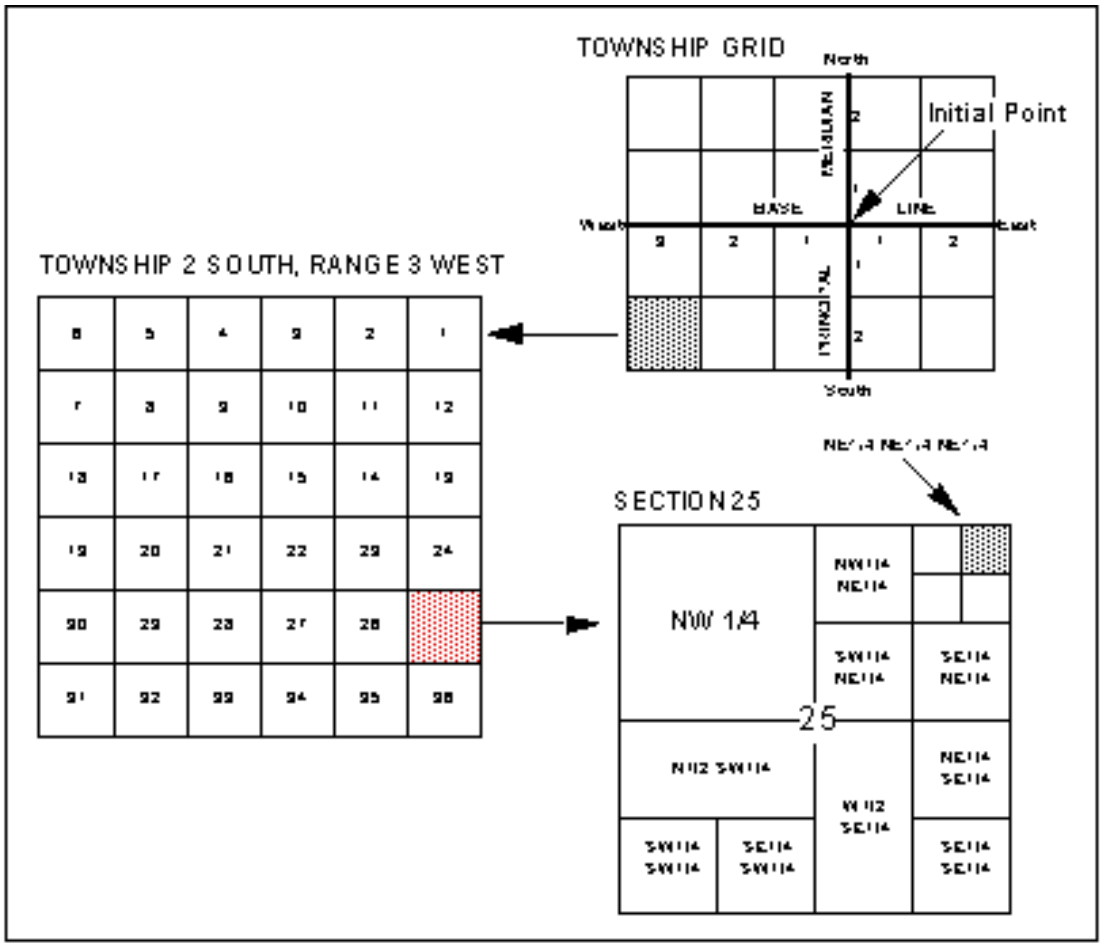

Figure 4.2. General Diagram of the US Public Land Survey Syste

Unplatted: Indicate whether the site is located on unplatted lands. While public and most private lands in New Mexico were surveyed by the General Land Office (now the Bureau of Land Management) and platted into townships and sections, most Spanish and Mexican Territorial land grants and some Indian Reservations were not. When USGS 7.5' topographic maps indicate that a site is located in unsurveyed lands, this should be indicated by checking **Unplatted** and leaving the other PLSS references blank. *Do not, under any circumstances, **manually** protract township and section lines on USGS quadrangles to obtain a PLSS Reference.*

Township / Range: Enter the Township and Range designations of the site location. PLSS locations are referenced by township and range, where township is the number of blocks north or south of the origin point, and range is the number of blocks east or west of the origin point. Townships and ranges are listed in red lettering along the outside edges of topographic quadrangles. Enter the township and range number and circle the appropriate directions (**N-S** and **E-W**, respectively). Half township or range numbers should be indicated through decimal notation (e.g., T 23.5 E).

Section: Enter the section(s) the site is located within. Each township block is further divided into 36 1-square-mile sections. Sections are numbered between 1 and 36, and are labeled in red lettering near the center of the section on topographic quadrangles. In some other parts of the country grant numbers may be used in place of section numbers. In such cases, enter the grant number in this field.

1/4 Sections: Describe the site location within each section. For locational convenience, sections are divided into 10-acre-square parcels by repeated quarterings -- a section is divided into quarter sections, quarter sections into quarter-quarter sections, and so on. Very large or elongate sites may also require half section definitions (e.g., E1/2, SE1/4, NE1/4). Enter quarter or half sections starting with the smallest unit (e.g., SE1/4, NE1/4, SE1/4 is indicated in Fig. 4.2). As noted previously, 1/4 section descriptions are not entered into the NMCRIS database.

Protracted: Check this data item if the entered PLSS reference is based on township and section lines that have been protracted by the USGS for use by the US Forest Service or some other federal agency and printed on a special edition of the USGS quadrangle.

7. PHYSICAL DESCRIPTION

Site Dimensions: Enter the **maximum length** and **maximum width** of the site. Measurements should be in whole meters.

Basis for Dimensions (choose one): Indicate how maximum site dimensions were derived by choosing one of the following:

• *estimated*: dimensions were estimated based on visual observation of the site, or by counting the number of paces while traversing the site, and then multiplying that number by a constant representing an average pace length.

• *measured*: dimensions were measured by stretching a tape measure across the site or using a survey instrument such as an optical rangefinder, transit, or alidade.

Site Area: Enter the area of the site in square meters, rounding off as appropriate.

Basis for Area (choose one): Indicate the basis for your site area determination by choosing one of the following:

• *estimated*: site area was estimated using a mathematical formula based on maximum length and width.

• *measured*: site area was computed in some way, as in counting grid squares on a scaled overlay or by using a polar planimeter or digitizer.

Elevation: Enter the elevation of the site center point (in feet) as derived from the USGS quadrangle. This should be the same point used to determine UTM coordinates. In areas of significant relief, this may be done by using the contour line nearest the site center or, in relatively flat areas, by interpolating between widely spaced contour lines.

Site Boundaries Complete? (choose one): Check *yes* if the site's limits were completely defined and mapped. If the site's boundaries were not completely defined (for example, if the site extends outside the project area), check *no* and explain the situation. If the unsurveyed portion of the site is not accessible, please indicate why.

Basis for Site Boundaries: Specify all criteria that were used to define the site's boundaries. Also, illustrate site boundary criteria on the site sketch map. This data item is not entered in the NMCRIS database.

• *distribution of archeological features & artifacts*: site boundaries were defined based on the distribution of artifacts and features in surface or subsurface contexts.

• *modern features or ground disturbance*: site boundaries were defined based on modern activities (e.g., buried pipelines, sewers, and irrigation ditches, extant buildings, roads) which have destroyed or covered a portion of the site.

• *topographic features*: site boundaries were defined based on topographic features (e.g., a cliff wall or steep slope, a

body of water, an arroyo).

• *property lines*: owing to access restrictions, property lines or project boundaries were used to artificially bound the site (i.e., it is likely that the site extends into lands that were not inspected during archeological survey).

• *other criteria*: specify the site boundary criteria used.

Depositional/Erosional Environment: Indicate all significant depositional or erosional processes that have contributed to the formation of archeological deposits on the site.

• *alluvial*: rock and sediments deposited by water.

• *aeolian*: sediments deposited by wind.

• *colluvial*: rock and sediments deposited by gravity -- usually in combination with other processes.

• *residual*: deposits formed largely by in situ decomposition of bedrock.

• *not applicable*: the site is located directly on bedrock.

• *other process*: describe depositional/erosional environment.

Stratigraphy & Depth of Archeological Deposits (choose one): Indicate the nature of archeological deposits on the site by choosing one of the following:

• *unknown/not determined*: observations relevant to subsurface archeological deposits were not made.

• *no subsurface deposits present*: observations relevant to subsurface archeological deposits were made, but were negative.

• *subsurface deposits present*: subsurface archeological deposits were observed.

• *stratified subsurface deposits present*: stratified subsurface archeological deposits were observed.

Estimated Depth: Estimate the depth of cultural fill at the site, emphasizing either the range or average depth of the deposits rather than the maximum.

Basis for Determinations: Indicate the nature of the observations made to determine the depth of archeological deposits by choosing one or more of the following:

• *estimated*: deposit depth was estimated without any direct subsurface observations.

• *shovel or trowel tests*: limited, uncontrolled excavations were conducted to estimate deposit depth.

• *core or auger tests*: soil coring or auguring tests were conducted to estimate the depth of cultural fill.

• *excavations*: controlled excavations were conducted and the maximum depth was accurately measured.

• *road or arroyo cuts*: cultural deposits were observed in arroyo cuts and/or road cuts within the site.

• *rodent burrows*: subsurface archeological deposits brought to the surface by rodents were observed.

• *other observations*: specify observations.

Observations on Subsurface Archeological Deposits: Enter other observations concerning subsurface cultural deposits (e.g., staining, texture, color, compaction) in the space provided.

Nearest Water Source (choose one): Indicate the type of water source nearest to the site by choosing one of the following:

• *spring/seep*: natural water sources arising from exposed geological strata.

• *perennial stream/river*: perennial drainages containing water throughout the year except in severe drought.

• *intermittent stream/arroyo*: intermittent drainages containing water only part of the year.

• *perennial lake*: perennial lakes containing water throughout the year except in severe drought; do not list modern impoundments in this category -- use only for natural lakes.

• *intermittent lake/playa*: intermittent lakes or playas containing water only part of the year.

• *other source*: specify the type of water source (e.g., wells, cisterns, tanks [for historic sites only], tinajas holding water for significant periods).

Distance from Site: Enter the distance from the site to the water source in kilometers, rounding off as appropriate.

Local Vegetation: Provide a list of plants observed on and near the site. The list should be in decreasing order of observed dominance. *Overstory* or tree species are listed separately from *Understory* plants such as shrubs, grasses, forbes, etc. This data item is not entered in the NMCRIS database.

Vegetation Community (choose one or two): Check the plant community that matches the general site area. Indicate ecotone situations by checking two vegetation communities.

- *forest*: a full growth forest, typically consisting of coniferous admixtures in higher elevations of New Mexico.

- *woodland*: a cover of trees and shrubs, primarily consisting of pinon and juniper admixtures. Juniper communities can be woodland if the density of trees is high and the population well established. Areas consisting predominantly of grasses and brush, with scattered small bushy junipers should be entered as scrubland or grassland depending on the overall percentage of bushy vegetation vs. grasses.

- *scrubland*: a brush community, typically consisting of forbes, brush, and grasses which occurs in the northern portion of the state, and in higher elevations statewide. Scrubland usually contains sage, small bushy juniper, saltbush, rabbitbrush, and oak brush as its dominant component.

- *grassland*: a predominantly grass or grass/forbe community, which can include widely dispersed brush. Meadows should be entered as marshland/riparian/meadow.

- *desert scrubland*: a brush community, typically consisting of forbes, brush, and grasses which occurs in the southern portions of the state at lower elevations. Desert scrub usually has a high portion of mesquite, creosote bush, or other lower Chihuahuan desert brush species.

- *marshland/riparian/meadow*: a vegetation complex directly related to a permanent water source. This includes either an area of low-lying wet land, or the vegetation complex which is sustained along the course of a river or stream. Riparian environments can also occur around springs and seeps. Meadows are characteristic of wet lands in forests, usually having a grass/forbe vegetation.

- *other community*: use only if the community cannot be subsumed under any of the previous definitions. For example, if a site is in an urban or suburban environment, it may be indicated as *other*. If *other* is used, describe the situation.

Topographic Location: Choose the landform types from the provided list that best characterize the local topography. Landform type definitions are provided in Appendix 4.

Observations on Site Setting: Provide a brief description of the physical setting of the site in this space (e.g., "The site is on top of a sand dune at the edge of a low mesa") In addition, you may use this space to record information on slope, aspect, and exposure. Slope is measured in degrees below horizontal. Aspect is defined as the direction of the slope and is measured in azimuth degrees (e.g., an aspect of 180¡ refers to a site on a south-facing slope). A site located in flat terrain or on a hilltop has an aspect of 360¡. Finally, site exposure may be described in a brief narrative (e.g., "the site is sheltered by a steep cliff face that is open to the NE"). This data item is not entered in the NMCRIS database.

8. ASSEMBLAGE DATA

Assemblage Content: Indicate the presence of artifacts and materials observed on the site using the following list:

Lithics

- *lithic debitage*: lithic debris resulting from chipped stone tool manufacture (e.g., flakes, angular debris or shatter).

- *chipped-stone tools*: stone tools made primarily using percussion and pressure-flaking techniques (e.g., scrapers, spokeshaves, bifaces, knives).

- *diagnostic projectile points*: documented dart- and arrow-point styles used in making cultural/temporal assignments (e.g., Jay, Folsom, San Pedro).

- *non-local lithic materials*: artifact and reduction debris of lithic materials that are available from a known source location that is some distance from the site (e.g., Alibates Dolomite, Jemez Obsidian).

- *stone tool manufacturing items*: lithic items directly involved in the manufacture and/or maintenance of chipped-stone tools (e.g., cores, hammerstones).

- *ground stone tools*: stone tools made primarily through grinding and pecking (e.g., metates, manos, mauls, polishers).

Prehistoric Ceramics

• *whole ceramic vessel*: complete or nearly complete ceramic vessels; use for *pot drop* and *pot cache* situations encountered during survey, as well as pots recovered during excavation.

• *diagnostic ceramics*: pottery types with recognized cultural/temporal associations (e.g., Agua Fria Glaze-on-Red, Chaco Black-on-White).

• *other prehistoric ceramics*: non-diagnostic prehistoric pottery.

Historic Artifacts

• *diagnostic glass artifacts* : whole or fragmentary glass containers with documented dates of manufacture.

• *other glass artifacts* : non-diagnostic glass artifacts.

• *diagnostic metal artifacts*: whole or fragmentary metal artifacts with documented dates of manufacture.

• *other metal artifacts*: non-diagnostic metal artifacts.

• *whole ceramic vessel*: complete or nearly complete ceramic vessels; use for *pot drop* and *pot cache* situations encountered during survey, as well as pots recovered during excavation.

• *diagnostic ceramics*: whole or fragmentary ceramic vessels with documented dates of manufacture.

• *other historic ceramics*: non-diagnostic historic pottery.

Other Artifacts and Materials

• *bone tools*: ground and/or polished tools made from bone (e.g., awls, needles).

• *faunal remains*: non-human bones found in archeological contexts.

• *macrobotanical remains*: charred botanical materials (e.g., wood, corn cobs, seeds).

• *architectural stone*: loose lithic debris resulting from the disintegration of architectural features or the stockpiling of materials.

• *burned adobe*: fired-clay fragments from roof or walls of adobe structures or features.

• *fire-cracked rock/burned caliche*: scattered rock or caliche that has been cracked, discolored, and/or crazed due to exposure to fire.

• *other items*: specify other rare artifact types and materials present (e.g., shell, turquoise, beads, ornaments).

Assemblage Size (choose one): Estimate the number of lithics, prehistoric ceramics, and historic artifacts present on the site by choosing one of the six frequency categories (0, 1s, 10s, 100s, 1,000s, >10,000). Also, estimate the total assemblage size. Provide rough artifact counts (+/- 10 items) if the estimated frequency of items in any artifact class or the total assemblage is less than 100 items.

Dating Potential: Based on the kinds of materials and features observed, specify all chronometric techniques that may be appropriate for dating the site:

• *radiocarbon*: the site component contains, or is likely to yield, materials that are potentially datable through radiocarbon methods.

• *dendrochronology*: the site component contains, or is likely to yield, wood or charcoal specimens that are potentially datable through dendrochronology.

• *archeomagnetism*: the site component contains, or is likely to yield, features or materials that are potentially datable through archeomagnetism.

• *obsidian hydration*: the site component contains, or is likely to yield, obsidian artifacts potentially datable through obsidian hydration.

• *relative dating methods*: the site component contains, or is likely to yield, artifacts potentially datable through type-seriation methods.

• *other methods*: specify dating method(s).

Assemblage Remarks: Use this space to discuss the artifact assemblage. Consider the spatial distribution of the assemblage, and provide descriptions of artifacts and tools diagnostic of site function or cultural/temporal affiliation. Whenever possible,

attach photos or drawings of projectile point types and other diagnostic items to the site form. Also note how assemblage size was quantified (i.e., estimated, all visible artifacts counted, etc.). When lithic artifacts are present, list raw material types and sources, and discuss tool types and manufacturing techniques if sufficient data are available.

9. CULTURAL/TEMPORAL AFFILIATIONS

Cultural, temporal, and archeological affiliations should be recorded on the LA Site Record at a level of detail appropriate to the available data and circumstances of recording. Depending on the time period, *cultural affiliation* can refer to broad adaptational stages (e.g., Paleoindian and Archaic), extinct societies known only through archeological remains (e.g., Anasazi and Mogollon), or extant ethnic groups (e.g., Pueblo, Navajo, Hispanic, Euro-American). Although cultural affiliations are clear for most archeological sites, equivocal associations do arise. Common examples include archeological sites with elements of both Mogollon and Anasazi affiliations (e.g., *Mogasazi*), and some 20th century sites where the archeological and historic records are unclear as to the ethnic makeup of a site's inhabitants. Although standard choices (i.e., Paleoindian, Archaic, Anasazi, etc.) are provided, other rare or *mixed* cultural affiliations may be expressed on the LA Site Record.

Temporal affiliations are also expressed on the LA Site Record. In NMCRIS, a distinction is made between *archeological* periods and actual *occupation* dates. The temporal affiliation of a site component is expressed in terms of named archeological periods or stages such as "Pueblo I," "Early Pithouse," "Spanish Colonial," and so on. These periods have generally accepted beginning and ending occupation dates that are considered reasonable approximations on a regional level. Analyses involving ceramic seriation, architectural studies, and chronometric dating methods conducted on a local level may, however, provide beginning and ending occupation dates that are more precise than the regional chronologies. Although default beginning and ending occupation dates for each archeological period are provided (Appendix 5), these defaults may be overridden when more precise dates are made available through chronometric or relative dating studies, archival documentation, or where the field archeologist has other reason to believe that the default occupation dates are inappropriate. Uncertain temporal affiliations can also be expressed with a "best guess" occupation period. Occupations that extend into more than one archeological period (e.g., Pueblo I - Pueblo III) are handled by specifying both the earliest and the latest archeological periods on the LA Site Record.

Archeological affiliations refer to the associated phase or complex names derived from relevant archeological literature. As such, archeological affiliations are expressed as keywords that relate a component to documented archeological sites (commonly referred to as *type sites*), geographic regions, published books, monographs, reports, journal articles, and so on. Phase and complex names are listed in Appendix 6, along with key references for many geographic regions in New Mexico. Archeologists may associate a component with any number of phase or complex names.

Multicomponent Sites. Sites with complex occupational histories can be defined and described on the LA Site Record. As outlined previously in Chapter 2 (**Design Rationale**), a site component is defined as a generally *continuous* site occupation with a *single* cultural affiliation. Cultural differences are the most appropriate basis for multiple component definition, but if there are data supporting a hiatus in occupation, as in population replacement or significant change in site function, multiple components with the same cultural affiliation may be recorded.

A site consisting of an Archaic lithic scatter with a historic-period house foundation is obviously multicomponent, and each component should be entered separately. However, some situations are not so simple. Consider, for example, an Anasazi roomblock occupied continuously through the Pueblo II and Pueblo III periods. Because the occupation is continuous and is Anasazi in cultural affiliation, it is considered a *single* component, but if there were evidence of an abandonment and a reoccupation some 50 or 100 years later, it should be recorded as *two* Anasazi components. If there is an occupational hiatus, then multiple components with the same cultural affiliation are appropriate. Cultural affiliations always take precedence over continuity of occupation, however. If a site has been occupied from prehistoric Anasazi to historic Pueblo times, for example, it should be defined as two components to reflect the existence of the two cultural affiliations even though the occupation has been continuous and the affiliations are very closely related. Examples of this situation are abundant among the modern Pueblos of northern New Mexico.

In most survey situations, it will be difficult or impossible to discern significant breaks in site occupation, and it is probably best not to define multiple components with the same cultural affiliation without the benefit of excavation and chronometric data. In general, it is better to define a site as a single component with an extended occupation period in uncertain situations rather than enter a second component of the same cultural affiliation.

The Cultural/Temporal Affiliations section of the LA Site Record includes the following data items:

Number of Defined Components: Enter the number of individual temporal components defined for the site. An unlimited number of components may be entered. If more than two components are defined, Component Continuation Sheets (Appendix 1) should be completed and attached the LA Site Record. Starting with the earliest occupation, describe each defined component by completing the following data items:

Cultural Affiliation (choose one): From the following list, choose the single cultural affiliation that best describes the

component being recorded:

• *Paleoindian* (statewide; includes all Paleoindian complexes occurring in NM).

• *Archaic* (statewide; includes all Archaic traditions occurring in NM).

• *Anasazi* (Northern and Central NM).

• *Mixed Mogollon and Anasazi* (a.k.a. *Mogasazi* in South Central and West Central NM).

• *Mogollon* (Southern and Central NM; includes Southeastern NM, Jornada, and Mimbres Mogollon traditions).

• *Casas Grandes* (extreme SW NM, especially Hidalgo County).

• *Hohokam* (extreme SW NM; very rare in NM).

• *Plains Village* (Northeastern NM).

• *Plains Nomad* (mostly Northeastern NM; includes Plains Apache, Kiowa, Cheyenne, Commanche, and other tribes of the Southern Plains).

• *Navajo* (mostly Northwestern and West Central NM).

• *Apache* (statewide; includes Jicarilla, Mescalero, and other Southwestern Apache groups).

• *Ute* (Northern NM).

• *Pueblo* (Northern and Central NM; includes all historic period Pueblo groups).

• *Hispanic* (statewide).

• *Anglo/Euro-American* (statewide; includes all non-Hispanic Euro-American ethnic groups).

• *Unknown affiliation*: culturally diagnostic artifacts or features were not observed; cultural affiliation cannot be determined on the basis of available historical records. *The use of this category is limited to situations where it is truly not possible to determine cultural affiliation.* Small lithic scatters or rock cairns are common examples of sites with unknown cultural affiliations. Do **not** choose *unknown affiliation* if you cannot decide between two or three possible cultural affiliations as in a historic homestead that may be either Hispanic or Anglo/Euro-American -- *other affiliation* should be used instead.

• *other affiliation*: this category should only be used when cultural affiliations are known, but when the above choices are inadequate to express those affiliations. Express other *mixed* affiliations using hyphens (e.g., Hispanic-Anglo/Euro-American) and discuss your choice under **Observations on Cultural/Temporal Affiliations**.

Basis for Temporal Affiliations (choose one): Indicate the reliability of the temporal affiliations for the site component by choosing one of the following:

• *not applicable*: temporal affiliations are unknown.

• affiliations are based on associated chronometric data or historic records (e.g., dendrochronology, radiocarbon, deed records, homestead applications).

• affiliations are based on associated diagnostic artifact or feature types (e.g., decorated pottery, projectile points, pithouses, masonry styles).

• affiliations are based on analytically derived assemblage data or the recorder's archeological experience (e.g., debitage measurements or tool type frequencies).

Period of Occupation: Specify the earliest and latest archeological periods, during which the site was occupied *without a discernible hiatus*.

Earliest Period/Latest Period: Indicate the earliest and latest archeological periods for the component using the period designations listed in Appendix 5. If the component was occupied during a single archeological period, leave **Latest Period** blank.

Begin Date/End Date: Enter the beginning and ending occupation dates for the component. Express all dates as years BC/AD rather than years BP (before present). Default values for begin and end date for each archeological period, listed in Appendix 5, will be used to bracket the component's period of occupation if you leave **Begin Date** or **End Date** blank. Alternatively, you may change one or both of the default dates if, for example, firm phase associations or independent chronometric data are available for the component. Be sure to justify any adjustments of the default dates

in **Observations on Cultural/Temporal Affiliations**.

Dating Status: Indicate the kinds of chronometric dates, if any, that are available for the site at the time of your visit:

• *radiocarbon*: the site component has been dated through radiocarbon methods.

• *dendrochronology*: the site component has been dated through dendrochronology.

• *archeomagnetism*: the site component has been dated through paleomagnetism.

• *obsidian hydration*: the site component has been dated through obsidian hydration.

• *relative dating methods*: the site component has been dated through type-seriation methods.

• *other methods*: specify dating method(s).

Observations on Cultural/Temporal Affiliations: Use this space to document how the component was identified and how cultural and temporal affiliations were determined. Be sure to identify any diagnostic assemblage components and/or feature types in this section that influenced your determination of affiliations. Also, discuss any *other*, *unknown,* or questionable affiliations indicated for the component.

Site/Component Type (choose one): Indicate the site/component type by choosing one of the following:

• *Simple Feature(s)*:
Prehistoric: petroglyphs, agricultural features, roads, shrines, cairns, etc.
Historic: graffiti, cairns/markers, burials/cemeteries, etc.

• *Artifact Scatter*:
Prehistoric: lithic and/or ceramic scatters, quarries, etc., with no other features.
Historic: trash scatters, small dumps, etc.

• *Artifact Scatter with Features*:
Prehistoric: artifact scatter with fire-using features, storage facilities, or other specialized features.
Historic: trash scatters with specialized features or facilities.

• *Single Residence*:
Prehistoric: a single residential structure or unit, commonly occurring with an artifact scatter and/or other facilities or features.
Historic: a single residential structure with trash, outbuildings, etc.

• *Multiple Residence*:
Prehistoric: two or more residential structures/units with an artifact scatter and/or features.
Historic: two or more residential *outfits*; a neighborhood.

• *Residential Complex/Community*:
Prehistoric: multiple residential structures/units with public areas/structures like plazas, towers, kivas, etc.
Historic: multiple residences with public structures/areas; a town.

• *Industrial*:
Prehistoric: associated with prehistoric mining loci (e.g., Cerrillos Turquoise Mines)

Historic: associated with manufacturing, mining, logging, etc.

• *Military*:
Historic only: associated with military forts, posts, battlefields, etc.

• *Transportation/Communication*:
Historic only: mainly railroad-associated structures and complexes.

• *Ranching/Agricultural*:
Historic only: associated with agricultural and ranching activities.

• *other type*: If the site component does not fit in any of the listed types, enter a new site type name and justify your classification under **Remarks**. The use of *other* classifications should be limited to relatively rare types of sites that present unique management problems (e.g., Chacoan Great Houses, Navajo Pueblitos, Bison Kill Sites).

Site- or component-type classifications provide a shorthand description of each site component that is useful in making decisions concerning information potential (e.g., "Can the site be chronometrically dated?", "Does it have architectural

features or is it an artifact scatter?"), and management or protection (e.g., "Is the site susceptible to vandalism?", "Does the site need to be patrolled?").

Associated Phase/Complex Names: When available information allows the component to be associated with one or more published archeological complexes or phases (e.g., Cody Complex, Panhandle Aspect, Do–a Ana Phase, Red Mesa Phase), enter those name(s) in the provided space using the list of published phase and complex names in Appendix 6 as a guide. If a specific phase or complex does not appear in Appendix 6, enter the name and document the sources in **Observations on Cultural/Temporal Affiliations**. If the site component has no firm archeological phase or complex associations, or if **Culture** is unknown, leave this data item blank.

10. FEATURE DATA

As outlined in Chapter 2 (**Design Rationale**), archeological features consist of structures, facilities, and other cultural remains observed within a site. In NMCRIS, feature data are entered in an inventory table. Features should be described with an amount of detail appropriate to the nature of the physical data and the recording circumstances. Depending on the intensity of field observations, features can be described as uninterpreted remains (e.g., a charcoal stain, a rubble mound), or as interpreted feature types (e.g., a hearth, a roasting pit, a roomblock). In addition, features may be identified and described individually (e.g., roomblock #1, hearth #5) or in groups with a count (e.g., 3 roomblocks, 5 hearths) depending on the intensity of field recording. An extensive list of standard feature types is provided in Appendix 7, but new types may be added by the field archeologist. Space is provided for a brief feature description and an assessment of reliability of the feature identification. Features may be related to multiple site components or, if associations are uncertain, to *no* site component, without distorting the site's total feature count in the inventory.

Inventory all archeological features observed on the site. Feature Continuation Sheets (see Appendix 1) should be attached, if required. Data items in the inventory table are described below:

Feature Type: Enter the type of feature. Use the list of defined feature types in Appendix 7 as a guide, but if an appropriate type does not appear in that list, *do not hesitate to enter a new feature type in this field*. If a new feature type is entered in the inventory, include a description in **Feature ID, Notes** and/or **Feature Remarks**.

*Note: Assemblage characteristics such as lithic scatters, ceramic scatters, and fire-cracked rock scatters are **not** entered in **Feature Data** -- these materials are entered under **Assemblage Data**.*

Reliability of ID: If the identification of a feature is questionable, enter a question mark ("?") in this field. Depending on the circumstances, a shallow depression could be entered as a pithouse with a questionable identification or, simply, as a depression.

Number of Observed Features: Enter "1" for all features entered individually. For groups of one feature type, enter the total number of that type observed on the site (e.g., 5 hearths, 2 roomblocks). If actual counts are not possible, enter an estimate in the **Feature Remarks** data item and indicate how that estimate was derived.

Associated Components: List the component numbers from Section 9 (**Cultural/Temporal Affiliations**) of the LA Site Record that are associated with each individual feature or feature group. Enter zero ("0") if the relationship between components and features is not known. Several examples illustrate how to complete this data item:

Example #1: LA 12345 consists of two components: #1 (Anasazi-Pueblo II Period), and #2 (Anasazi-Pueblo IV Period). If Roomblock #1 on this site was occupied during Component #1, abandoned, and then reoccupied during Component #2, enter "1, 2" in **Associated Components** (i.e., the roomblock is associated with *both* components).

Example #2: LA 56789 consists of two components: #1 (Archaic-Late Archaic Period), and #2 (Anasazi-Basketmaker II Period). If the three hearths present on the site cannot confidently be associated with either Component #1 or Component #2, enter zero ("0") in **Associated Components** (i.e., the hearth cannot be positively associated with *either* component; feature-component associations are not known).

Example #3: LA 33445 consists of two components: #1 (Archaic-Late Archaic Period), and #2 (Navajo-Recent Period). To indicate that 3 hearths are associated with Component #1 enter "1" in **Associated Components**. Similarly, enter "2" in **Associated Components** to indicate that Hogan #3 is associated with Component #2.

Feature ID, Notes: This field may be used to enter two kinds of feature information:

1. Individual feature identifications may be entered to relate the feature to detailed narrative descriptions elsewhere on the form, or to site maps (e.g., Feature #1, Hearth #13, Roomblock C).

2. Brief descriptive notes on feature size, shape, construction methods or materials, etc., may be entered (e.g., pithouse depression: "6 m diam., 0.4 m deep", room block: "masonry, 50 rooms", roasting pit: "1.3 m x 1.9 m w/ intense staining"). Multiple lines may be used, but very detailed descriptions should be entered under **Feature Remarks** or in

the **Narrative Site Description**. If multiple lines are used, leave a blank line between descriptions.

Feature Remarks: Provide your best assessment of the data potential of the features, e.g., are hearths eroded or do they have remaining intact deposits? Discuss in detail the spatial distribution of inventoried site features, their construction details and size, associated material culture, and any circumstances that may have affected field observations (e.g., the ground was wet, recording time was limited). Also explicitly identify and explain any estimated frequencies that were provided in the feature inventory.

11. REFERENCES

Written Sources of Information: Document any additional written materials resulting from your work at the site. Please provide *American Antiquity* style references (see Appendix 2). This data item is not entered in the NMCRIS database.

*Note: If the site form is submitted with a LA Project/Activity Record, you may skip **Written Sources of Information**.*

Other Sources of Information: Use this space to identify any additional sources of information on the site such as archival materials (e.g., field notes, photographs, maps), previous publications, informants, and private collections. This data item is not entered in the NMCRIS database.

12. NARRATIVE DESCRIPTION

Use the proved space to narratively describe and interpret the site. This information is essential; do not hesitate to attach extra continuation sheets if more room is needed. Include impressions or comments about the site that might not be discussed elsewhere. How is it related to other sites in the area? What features might be present that are not visible on the surface? If no diagnostic artifacts were found, who might have lived here? Interpret the site. This is your chance to discuss its function and periods of occupation in relation to other sites in the area, how different components are related, what the distribution of artifacts means, if there is danger from erosion or vandalism, and so on. Remember, in many cases this is the **only** time the site will be visited, so provide any information that seems relevant. This data item is not entered in the NMCRIS database.

13. SITE RECORD ATTACHMENTS

Indicate all items that are attached to the LA Site Record in this section. These items are discussed in Chapter 5, **Requirements For Submitting Archeological Records**. This data item is not entered in the NMCRIS database.

*Note: A site location map based on USGS 7.5' quadrangles, and a site sketch map are **required** attachments to the LA Site Record.*

5. REQUIREMENTS FOR SUBMITTING ARCHEOLOGICAL RECORDS

This chapter of the **NMCRIS User's Guide** outlines the basic requirements for submitting archeological records to the Historic Preservation Division and the Archeological Records Management Section. The term *records* is broadly defined here to include the following kinds of materials:

- published and unpublished **reports** documenting archeological investigations.
- **data forms** capturing information relating to sites, activities, and other archeological entities.
- **maps** of various scales documenting the geographic locations of archeological sites and investigations, or the internal details of archeological sites.
- **photographic materials** documenting archeological sites, internal site features, and field investigations.
- **other notes and records** documenting archeological investigations and analyses.

As the designated clearinghouse for archeological information in New Mexico, ARMS receives both survey and excavation records from a variety of sources. Most new records are submitted to ARMS through the review and compliance section of HPD. Records are also submitted directly to ARMS by the Museum of New Mexico Archeological Repository Collection (ARC), and by independent researchers. Materials coming through the Museum are almost always original excavation records that are maintained by ARMS in conjunction with the artifact collections curated by ARC. Archeological records submitted to HPD by other government agencies in support of Section 106 consultations are transferred to ARMS at the completion of review. The bulk of these records consist of reports, site forms and maps documenting archeological surveys throughout the state.

The requirements for submitting archeological records to HPD and ARMS are detailed in the remainder of this chapter and summarized in Figure 5.1. Note that the requirements outlined here are specific to the Archeological Records Management

Section, and that most state and federal agencies issuing cultural resource permits have more detailed requirements for archeological reports and other records.

REPORTS

The Historic Preservation Division requires a single report copy for Section 106 consultation. Unless special arrangements are made with HPD, this consultation copy must come from the federal agency with a cover letter requesting consultation, not from the performing agency. For projects that involve state lands but are part of a larger, federal undertaking that will be subject to Section 106 review, performing agencies can meet the requirements of their State permit by sending HPD a letter indicating the PLSS location of the State lands in question, noting the sponsoring agency and NMCRIS Project or Activity Number, and enclosing a copy of the title page of the report. The only time that the performing agency must send a complete report directly to HPD is when a project or activity occurs wholly on State or State and Private land and is carried out under a state permit.

Once the Section 106 review is completed by HPD the review copy of the report and accompanying documentation are transferred to ARMS; it is not necessary to send additional copies of reports to ARMS if the report is undergoing HPD review. Reports *not* reviewed by HPD should be sent directly to ARMS, however. Regardless of who the report is submitted to, all reports must be accompanied by a completed LA Project/Activity Record.

Original site forms, field sketch maps and site-specific documentation (e.g., photographs, collection records, specimen catalogs) must be not be bound into reports. A separate unbound attachment is required for archival reasons and so site records can be filed properly at ARMS. Documentation of isolated occurrences (IOs) may, however, be bound into the report.

A legible project location map based on portions of one or more USGS 7.5' topographic maps *must* be included in every report and labeled with quadrangle name(s). Surveyed area boundaries will be digitized by ARMS starting in 1993, so it is critical that the location of the undertaking (e.g., right-of-way boundaries, well pad limits) and the areas actually surveyed (if different from the undertaking area) be clearly identified. For extensive survey projects such as pipelines, actual copies of topographic maps should be submitted if possible to facilitate digitizing. These maps will be returned after the project boundaries are digitized.

A site location map is also required if new sites are discovered during survey, or if previously registered sites are investigated. Site locations can be added to the project location map, or a separate map can be prepared. If a separate map is prepared it should also be based on USGS 7.5' topographic maps and labeled with quadrangle name(s). The boundaries of each site should be clearly indicated and LA numbers, rather than field site numbers, should be used.

SITE RECORDING FORMS

The LA Site Record is completed whenever an archeological site is visited. LA Site Record forms must be accompanied by a site plan map and a photocopy of the USGS 7.5' topographic map showing the site's boundaries. All maps, artifact drawings, photos, and continuation sheets should include the appropriate LA number and be attached to the LA Site Record. Site records must be legible and should be submitted to HPD or ARMS as part of a separate records *packet* along with the associated report.

All new sites must be registered and have LA numbers assigned by ARMS before records are submitted to HPD (see **Registering Archeological Sites** in Chapter 6). The submitted form may consist of a printed version supplied by ARMS, such as the one included in Appendix 1, or a word processor version. Sections 1-4 (pages 1-2) of the LA Site Record must be completed for *all* sites. Sections 6-13 (Section 5 is for SHPO use only) should be completed if the site has not been previously recorded on the LA Site Record, or if existing information on the site is incorrect or incomplete. Site updates must also include a site plan map if there are any changes in the condition, archeological status, or physical description (e.g., new vandalism or erosion, new or reinterpreted features, additional collection or test excavation units). If a site's location or configuration requires updating, a copy of the USGS 7.5' topographic map showing the site's boundaries must be attached to the LA Site Record.

As indicated above, word processor versions of the LA Site Record are acceptable. The length and format (i.e., font, bold, italics, check boxes, etc.) of user-generated forms are not important, but submitted forms must contain, at a minimum, the same data items in the same order as the printed form. If additional variables specific to your research or management are included, it is requested that these items be placed at the end of the form. A copy of the LA Site Record is available on diskette from ARMS. This document is a simple, unformatted version of the printed form, but can be imported into any MS-DOS or Macintosh word processor and modified.

LA Site Record forms may also be generated by the NMCRIS Data Entry Program (DEP), scheduled for distribution in late 1993. In addition to generating printed versions of the LA Project/Activity Record and LA Site Record, the DEP allows data to be transferred to the NMCRIS database electronically.

SITE PLAN MAPS

Sketched site plan maps are essential extensions to the LA Site Record and are one of the most important documents produced during archeological survey. Each site plan is a graphic record of the site's internal structure and location in relation to the local environment and modern human activities that may threaten the site's integrity. Also, a site plan map documents the condition of the site (e.g., vandalism, erosion) and the investigative activities that were conducted on the site (e.g., collections, datum placement, test excavation units, shovel and auger tests) at the time of recording. Site plan maps are used by land managers and engineers as well as archeologists to relocate, evaluate, and avoid damaging sites. To be responsive to these diverse needs, site plan maps should contain the following elements:

- *Site identification:* indicate the LA number assigned to the site in addition to the field site designation.
- *North arrow:* both magnetic and true north are acceptable, but specify which was used.
- *Scale:* use a graphic bar-scale showing on-the-ground measurement rather than a ratio scale (i.e., 1 cm = 1 m) so that reduced/enlarged copies will also be to scale; if the map scale is approximate, clearly indicate this.
- *Map symbol key:* identify all symbols used on the map.
- *Site boundaries:* clearly mark the site's boundaries and note their basis (e.g., limits of artifact distribution, topography, disturbance).
- *Project boundaries:* if appropriate, identify features relevant to the undertaking (e.g., right-of-way limits, centerlines, temporary-use areas, access roads); direction and distance to the nearest project feature should be indicated if that feature is located far outside the site limits.
- *Landmarks:* indicate landmarks (e.g., fences, roads, houses) useful in relocating the site. If landmarks are not located on or immediately adjacent to the site, specify direction and distance.
- *Datums and Benchmarks:* mark site-identification stakes or tags, and points used in mapping, surface collection, and excavation.
- *Collection and excavation units:* clearly identify surface collection areas, excavation units, and shovel or auger tests, and key them to discussions in the site form and/or report.
- *Drainage and vegetation features:* indicate the location of drainages and vegetation patterns on or near the site.
- *Topography:* use estimated major contour lines (or for large sites, copy contours from the USGS map source) or slope measurements to indicate major topographic features on or near the site. Do not, however, compromise other information on the site or project with contour lines -- simply indicate the locations of major topographic features and direction of slope for especially complex sites.
- *Features:* accurately depict and label all recorded features and key them to descriptions in the site form.
- *Artifact distribution:* identify artifact concentrations and the locations of key diagnostic artifacts.
- *Name of observer and date (including year) of field observations.*

Colored pencils may help to produce a good site plan, but remember that most future users will be working with photocopies. Rectangular or polar graph paper is essential to creating an accurate map, but use brands where the grid does not interfere with features, boundaries, and labels when the map is photocopied. Alternatively, include drafted sketch maps from the report with the LA Site Record.

PHOTOGRAPHS AND DRAWINGS

Photographic documentation is an integral part of site recording. Photos serve to supplement the site plan map by documenting aspects of site location, structure, and condition that cannot easily be drawn. Although not required, black-and-white photographic prints, or *very clear* photocopies thereof, may be submitted to NMCRIS with the site form. Actual photos are preferable, and most government agencies require them -- check with the appropriate permitting agency to be sure. Negatives, color prints, or slides may be submitted, but are also optional. Negatives may be included with each site form or attached to the report.

All prints, slides and negatives must be submitted in archival quality sleeves (see **Archival Considerations** below) and must be accompanied by proper documentation. At a minimum, a photo record should indicate frame number, subject identification (i.e., site number, description of view), direction of view, and date, including the year. Photographic documentation should also be included in Section 2 of the LA Site Record (**Photographic Documentation**) as to media/format, roll, and frame

numbers, regardless of whether photocopies or actual prints are submitted.

Although the number and kind of photos taken depend on the size and complexity of the archeological site, basic photographic documentation commonly includes the following types of shots:

- *Overview photos* showing the entire site in relation to major topographic and cultural features. A photo of such large scale may require several frames and necessitate taking photos at some distance from the site. It is useful to have a person in these shots for scale. If possible, include the site datum in the center of the photo so it can be related to the site sketch map.

- *Feature photos* showing some overt site detail (e.g., exposures showing deposit depth, evidence of vandalism or other disturbance, excavation units) or site features (e.g., roomblocks, surface depressions). Again, it is desirable to have a person or recognizable object in the field of view for scale and have a means of relating the photo to the site map. Feature photos should be keyed to the site sketch map and site form.

- *Artifact photos* showing the size, material, and configuration of surface artifacts whose presence is important for evaluating site significance. A metric scale should be included in this type of photograph, and significant items should be keyed to the sketch map.

Drawings of internal features are also basic to site documentation and are valuable attachments to the LA Site Record. Many kinds of features and feature details simply cannot be recorded adequately through photography, especially if accurate measurements are essential to interpretation. Obviously, excavations require measured plans and profiles, but detailed drawings are frequently warranted during survey recording, especially when standing architecture is present. If uncollected diagnostic artifacts cannot easily be photographed, these items should be drawn to scale and keyed to the site map.

ARCHIVAL CONSIDERATIONS

The long-term survival of paper and photo records is a critical issue but is often ignored by archeologists. ARMS will produce a comprehensive set of records management and curation guidelines for archeologists in the future, but until this document is completed, those submitting archeological records to ARMS should observe the following recommendations.

Paper and Forms. If possible, acid-free paper should be used for all archeological records, simply because it lasts longer. Yellow pad paper should be avoided as should the use of *post-its* -- these stickers will not stay attached very long and leave a deposit of glue that attracts dirt and insects.

Writing Instruments. Hard pencil (No. 3 or 4) is preferable over ink mainly because it does not fade over time or run when wet. Soft pencil (No. 2) will smear with handling, but will remain readable over time. Ball-point pen may smear and fade over time but is acceptable. Felt-tip pens of any type are unacceptable for archeological records as they will bleed through several layers of paper over time.

Mounted Photos. Although the mounting of prints in reports is a necessity, almost all mounting methods cause deterioration of the print with time and eventually lose their adhesive power, resulting in the loss of the print from the page. This cannot be avoided completely, but heat-sensitive adhesive sheets are less destructive and last longer than other methods. The best method of including photos in a report is to mount archivally sound sleeves in the report. In all cases, photos should be marked (pencil or India ink only -- no ball-point pen) on the back side for association with the correct figure numbers and captions in the report if they become separated from the report or sleeve. Also, the performing agency should always maintain a set of negatives for all mounted photos with the manuscript.

Loose Photos and Negatives. Loose photographs accompanying site forms or reports must be numbered (pencil or India ink only -- no ball-point pen), matched to a log, and sleeved in archival polypropylene or polyethylene before submission to ARMS. Sleeves submitted with reports cannot, however, be larger than 8.5" x 11". Note that the stiff plastic sleeves known as PVC, or polyvinyl chloride, should not be used; this material contains gases harmful to just about everything. Sleeved negatives should also be attached to the prints (or contact sheet) and the photo log for the roll, if possible.

Magnetic Computer Media. Archiving computer data on magnetic media has two major problems. First, the magnetic media used by most PCs will not reliably store data for extended periods of time. The typical 5.25" IBM format diskette can only reliably store data for a year or two. Second, the format that applications use for storing data changes as new versions of the application are released. At some point in time the old format becomes unreadable. For instance, version 5.1 of WordPerfect can only read back as far as version 4.2. Consequently, ARMS cannot guarantee the long-term survival of any information submitted on magnetic media. Archival copies of archeological datasets, field and analysis records, and other information on magnetic media must be printed out, preferably on acid-free paper.

Archival Supplies. Acid-free paper can be obtained from large supply houses specializing in bulk papers, and is available as xerographic paper, form-feed computer paper, and many other formats. While more expensive than regular paper, acid-free paper may still be obtained at reasonable cost. Special pens for writing on polypropylene sleeves, film, and other non-paper

archival materials are available from photo supply stores or archival catalogues. Note that the word *Archival*, often found on plastic sleeves *does not refer to archival preservation*; it refers to *organization*. Care should be taken when purchasing plastic materials as not all plastics are sound for preservation. If you have any questions about archival preservation or supplies, please do not hesitate to call ARMS.

6. USING NMCRIS

This chapter outlines the procedures for using the New Mexico Cultural Resource Information System, and the records maintained by the Archeological Records Management Section and housed at the Laboratory of Anthropology.

ACCESS

Access to archeological records, either in paper or electronic form, is determined by the ARMS Registrar as mandated by law and dictated by the New Mexico Cultural Properties Review Committee (CPRC), Rule 27-5. In general, all cultural resource professionals may use the NMCRIS database or ARMS facilities. Other prospective users are screened by the ARMS Registrar to ensure that disclosure of site information does not compromise archeological properties.

The Laboratory of Anthropology is open between 8:00 AM - 12:00 PM and 1:00 - 5:00 PM, Monday through Friday. Appointments are advised if staff assistance is required. The NMCRIS database may be accessed through the dial-up query facility (described below) 24 hours a day, 365 days a year. System downtime for maintenance and backup is scheduled well in advance. Requests for simple record and map checks may also be mailed, faxed, or phoned in. Most requests can be handled on a same-day basis, if not immediately. Site forms, field sketch maps, and site-location maps can be faxed if the need is urgent, or these materials can be mailed. Requests for extensive photocopying, complex database queries, custom reports, or specialized analysis datasets are also handled quickly, but users should expect a 2-3 day turnaround.

There are no charges for using the NMCRIS database or ARMS records at the present level of service. This policy is based on the belief that those who *contribute* to the database by completing LA forms should be afforded access at no charge. If a request involves excessive amounts of staff time for photocopying or research, or if very large printouts are requested, a fee will be charged or a donation of copier paper requested. Users should be aware, however, that any new services (e.g., GIS analyses and output) that increase the ARMS program's operating costs may require a user fee.

PERFORMING A PREFIELD RECORDS CHECK

All land managing agencies require that archeologists research previous archeological investigations within or near a project area prior to undertaking any fieldwork. This requirement is met through consulting the most up-to-date archeological records and site location maps, which usually involves visiting a regional administrative unit of the agency where archeological records are maintained (e.g., BLM Farmington District Office, Lincoln National Forest Office). Archeologists should, however, also check the NMCRIS database before beginning fieldwork. ARMS is the only reliable source of records for sites on state or private lands, and for most sites recorded statewide prior to 1970. As described below in **Registering Archeological Sites**, a records check of the most current site location maps is required before LA numbers can be assigned.

Prefield checks of the NMCRIS database can be performed using the dial-in facility, and checks of paper and map records can be requested over the phone or in person.

A records check will have two results:

1. a list of registered sites located within the project area, with associated data from the LA Site Record.

2. a list of previous investigations conducted within or near the project area, with associated data from the LA Project/Activity Record. This listing will be based on USGS quadrangle units until digitized surveyed-space data are available.

The above information will assist in on-the-ground identification of previously recorded sites, and will identify previous work relevant to the investigation. If additional information is needed (e.g., old site forms, field sketch maps or site location maps) users may contact ARMS and have this information mailed or faxed.

To perform a prefield records check at ARMS, provide the following information:

1. name.

2. name of the performing agency.

3. name of the sponsoring agency.

4. project and activity identification (i.e., project/activity names or identification numbers).

5. a geographic definition of the project area (i.e., UTM coordinates describing a polygon(s) or line(s), PLSS description, USGS Quadrangles, etc.).

Although NMCRIS Project and Activity numbers are always assigned during site registration (see **Registering Archeological Sites** below), this assignment may also be completed during a prefield records check. If this option is exercised, the assigned NMCRIS Project and Activity numbers should be entered on the LA Project/Activity Record and all LA Site Record forms submitted with the report. The assigned numbers should also be referred to during subsequent site registration requests associated with the same activity.

REGISTERING ARCHEOLOGICAL SITES

Sites are identified by name and number but without a unique, permanent designation, the potential for confusing one site with another is considerable. In NMCRIS, a permanent site number (i.e., the LA number) is assigned to each site and registered in the NMCRIS database. This procedure provides a basis for positively identifying the site in all future consultations, investigations, and publications.

Site registration is required for positive site identification and *must occur prior to NHPA Section 106 consultations*. As described in the previous section of this chapter, a check of site location maps and records at the most up-to-date source is a prerequisite for site registration. This requirement reduces the chance that an archeological site is assigned more than one permanent site number, or that more than one site is assigned the same identification number. It is also advisable to perform a *second* records check immediately prior to site registration if many archeological investigations are being performed nearby owing to intensive development (e.g., oil and gas), or if an extended period of time (e.g., >3 months) has elapsed since the prefield records check. This will identify any sites that were recorded within the project area by other archeologists after the prefield records check, and sites that were recorded prior to the prefield records check, but whose records were not yet available.

To register one or more archeological sites, provide the following information:

1. name.
2. name of the performing agency.
3. name of the sponsoring agency.
4. project and/or activity identification (i.e., project name or ID number, report number, etc.).
5. number of new sites requiring registration.
6. optional: UTM coordinates; USGS Quadrangle name for each site.

Note that previously assigned NMCRIS Project and Activity Numbers may be substituted for items 2-4 above, since this information has already been entered into the NMCRIS database. Site registration can be performed directly using the NMCRIS dial-in facility, or can be requested by phone, letter, or in person. Instructions on using the dial-in facility for site registration will be provided in future updates of the *DECSystem 5000 Database Query Facility User's Manual* and documentation for the NMCRIS Data Entry Program (described below).

LA numbers will be provided for all registered sites and, unless the activity was previously registered through a prefield records check, NMCRIS Project and Activity numbers will be provided and associated with the registered sites within the NMCRIS database. The latter identification numbers should be entered on the LA Project/Activity Record and all LA Site Records before submission to the sponsoring agency and HPD. NMCRIS Project and Activity numbers are also required in order to register additional sites or cancel a previous site registration. Unassigned blocks of LA numbers cannot be provided for assignment in the field.

If UTM coordinates and the USGS Quadrangle name are supplied for each site during registration, warnings will be issued by NMCRIS regarding potential duplications.

USING THE NMCRIS DATABASE

NMCRIS database queries can be performed using one of the terminals located at ARMS, or from a remote computer terminal or personal computer equipped with a modem. Prospective NMCRIS users must first obtain authorization and be given a user account and password on the computer system. This is accomplished by the applicant completing and submitting a user account application form, obtained by calling ARMS. Once this application is submitted, the individual's eligibility to use this service will be determined by the ARMS Registrar. A response will be sent to the applicant and the applicant's sponsoring institution within one week of receipt of the application by ARMS. If the application is approved, a manual for the database query interface (*DECSystem 5000 Database Query Facility User's Manual*) will be sent to the applicant which contains all the

instruction necessary for connecting to the ARMS computer network, and using the NMCRIS database.

The standard NMCRIS query interface currently allows many different types of retrievals. Site data may be retrieved by identification information (LA Number, Other Site Number, Site Name) or location (PLSS description, UTM Coordinates, USGS Quadrangle). Project and activity data may be retrieved by identification number (NMCRIS Project No., Agency Report No., etc.) and location (Now: USGS Quadrangle, future: UTM Coordinates). Reports may be queried through standard citation information (Author, Title, Publisher, etc.) Regardless of what type of query is performed, the system also allows the user to choose from several different formats for data output that can be viewed on-line or produced as hardcopy. If access is through a remote personal computer running terminal-emulation software, users may also capture query results as an ASCII file.

An extended query interface is also being developed that will support more complex queries and reports based on the full range of NMCRIS data items. This facility will eventually be accessible to remote users via modem, but its use will be restricted to HPD staff until training materials for outside users are developed.

USING THE NMCRIS DATA ENTRY PROGRAM

Using the NMCRIS Data Entry Program (DEP), users may enter site and project-related data onto an electronic version of the LA Project/Activity Record and LA Site Record. This procedure offers several advantages. The program validates entered information and provides immediate feedback to the user, thus reducing the number of key-entry errors. The DEP also automatically enters repetitive data items and user-chosen defaults so less effort is needed to complete forms. When all data are entered, the program allows the user to print copies of the forms that are submitted to HPD along with the report. These computer-generated copies contain all information on the LA Project/Activity Record and the LA Site Record, including all narrative fields. These same data may also be exported to ASCII text files for incorporation into project databases or word processor documents. Importantly, the DEP produces data files on diskette that may be mailed to ARMS or transmitted directly over a dial-up link to the NMCRIS computer system. When these materials reach ARMS, the data will be screened and processed as a batch, thus reducing the time required to get new data into the NMCRIS database.

The new NMCRIS DEP will be released after the conversion to the new LA forms, hopefully in the last quarter of 1993. Unfortunately, existing versions of the program will be obsolete after the new LA forms are adopted, but the new version will offer significant increases in functionality when it is made available. As mentioned previously, the new DEP and documentation will be distributed free of charge to interested users as soon as it is ready. Contact ARMS for more information.

APPENDIX 1. NMCRIS FORMS

APPENDIX 2. REPORT CITATION STANDARDS

Use this appendix to determine the correct information for NMCRIS report citations in the data item entitled: **Title #2 (additional citation data)**. To use this appendix, first determine the appropriate document type in the Style Guide. The correct content and format of this citation field are underlined in the appropriate examples. This appendix may also be used for general citation style and format information. Note, however, that NMCRIS diverges from the American Antiquity Style Guide in one important area. In NMCRIS, *full* author names, rather than initials, are required.

This appendix has been reproduced with permission from Section 3.9 of the most recent American Antiquity Style Guide (Volume 57, Number 4, pp. 749-770).

APPENDIX 3. HPD HISTORIC BUILDING INVENTORY FORM

APPENDIX 4. LANDFORM DEFINITIONS

Alluvial Fan: A cone-shaped deposit of alluvium which forms where a drainage runs off higher elevations into a lowland. Often found where mountain runoff empties onto a plain.

Arroyo/Wash: The channel of an ephemeral or intermittent stream with banks of (usually) unconsolidated material, often vertical. Includes unincised drainages, braided drainages, unenclosed drainages, minor local drainage concentrations, and the immediate arroyo or wash margin.

Badlands: A heavily eroded area which is often highly dissected. There is usually little vegetation in badlands, and they frequently form in clay or shale deposits.

Base of Cliff: The foot of a high, steep, or overhanging face of rock.

Base of Talus Slope: The base of a slope created by the accumulation of materials like boulders, loose rock, and scree. Talus slopes occur at the bottom of a steeper declivity such as a cliff or escarpment.

Bench: A narrow strip of relatively level land, usually parallel to and higher than a valley bottom. The long axis of a bench generally parallels the stream that has formed the valley. The edge of the feature away from the drainage is often bounded by a steeply ascending slope, while the edge adjacent to the drainage slopes down to the valley floor.

Blow-Out: A hollow depression in a sand deposit formed by wind erosion. Blow-outs usually occur in dunes, and the bottom of the hollow is often hard-packed.

Canyon Rim: The area bordering the upper edge of a canyon wall (or cliff).

Cave: A natural cavity, chamber, or gallery beneath the surface of the earth or in a rock face.

Cliff/Scarp/Bluff: A steep, high rock face or slope which forms the margin of a plateau, mesa, or any headland that presents a precipitous face.

Constricted Canyon: A narrow, steep walled chasm, gorge, or ravine, whose sides are composed of cliffs or a series of cliffs rising from the canyon bed.

Dune: A mound, hill, or ridge of windblown sand. Includes parabolic, coppice, and linear dunes, whether active or stabilized.

Flood Plain/Valley: A hollow or low-lying area bounded by hills, mesas, interfluvials, or mountain ranges. These features are usually traversed by drainages which collect runoff from the uplands around the valley, and include the portion of the valley bordering the drainage and formed by deposition of alluvial sediments. It does not include areas within an arroyo/wash or on an arroyo margin. This term can also be used to describe smaller *valley-like* features; i.e., drainages and fluvials.

Hill Slope/Slope: The sloping side of a well-defined natural elevation that is smaller than a mountain. Use also for slopes that are not clearly defined as hillsides, such as alluvial or colluvial slopes, and undefined slopes.

Hill Top: The crest or summit of a well-defined natural elevation that is smaller than a mountain. Includes volcanic plugs, cerros, cerrillos, lomas, and cinder cones.

Lava Flow (Malpais): A solid or crumbled mass of rock resulting from a volcanic flow, usually thin in comparison to its extent.

Low Rise: A minor though distinct elevation of the ground above the surrounding terrain, usually gently sloping.

Mesa/Butte: A flat topped elevation bounded on at least one side by a steep cliff. Enter mesa/butte if the site is on top of or on the side of a mesa/butte.

Mountain: A tract of land that is considerably elevated above the surrounding country; often found in chains or ranges, but sometimes found as single eminences. The difference between hill and mountain is one of scale; geologically, mountains must rise to an elevation of 2000 feet above the adjacent landscape -- all other eminences are considered hills.

Mountain Front/Foothill: The steeply sloped side of a mountain, or the immediately adjacent hills which sometimes cluster at the base of mountains or mountain chains.

Open Canyon Floor: The bottom of a canyon, usually relatively level, away from the canyon walls.

Plain/Flat: A region of some extent, generally uniform in slope, unbroken by marked elevations and depressions.

Playa: A shallow drainage basin, sometimes temporarily filled with water, usually ephemeral or seasonal in accumulation. Playas generally have no outlet or a minor outlet, so that water evaporates rather than draining away.

Ridge: A relatively narrow, steep sided elevation, often occurring between drainages.

Rockshelter: Overhang, indentation, or alcove formed naturally by rockfall or in a rockface; generally not of great depth. Rockshelters may or may not be modified with structural elements for human use.

Saddle: A low point on a ridge or on the shoulder of a mountain, often a concave indentation on the spine of an elevation. Saddles are usually divides between streams flowing in opposite directions.

Talus Slope: A slope created by the buildup of boulders, rock, and scree accumulating at the bottom of a steeper declivity.

Terrace: A narrow strip of level land which is raised and has sloping sides. The long axis of a terrace usually runs roughly perpendicular to the major drainage in the area. Often bounded by a steeply ascending slope on the side away from the drainage, and a descending slope on the side nearest the drainage.

Other: Use only when the site topography can not be described by any other category. Fully describe the landform when this category is checked.

APPENDIX 5. ARCHEOLOGICAL PERIODS AND DEFAULT DATE RANGES

Culture	Period	Default Dates
Paleoindian		
	Pre-Clovis	< 9500 BC
	Clovis	9500 -- 9000 BC
	Folsom/Midland	9000 -- 8000 BC
	Late Paleoindian	8000 -- 6600 BC
	Terminal Paleoindian	6600 -- 5500 BC
	unspecific Paleoindian	9500 -- 5500 BC
Archaic		
	Early Archaic	5500 -- 3000 BC
	Middle Archaic	3000 -- 1800 BC
	Late Archaic	1800 BC -- AD 200
	unspecified Archaic	5500 BC -- AD 200
Anasazi (Pecos Classification)/Mixed Anasazi and Mogollon		
	Basketmaker II	AD 1 -- 500
	Basketmaker III	AD 500 -- 700
	Pueblo I	AD 700 -- 900
	Pueblo II	AD 900 -- 1100
	Pueblo III	AD 1100 -- 1300
	Pueblo IV	AD 1300 -- 1600
	unspecified Anasazi (Pecos)	AD 1 -- 1600
Anasazi (Northern Rio Grande)		
	Developmental	AD 600 -- 1200
	Coalition	AD 1200 -- 1325
	Classic	AD 1325 -- 1600
	unspecified Anasazi (N. Rio Grande)	AD 600 -- 1600
Mogollon (Jornada)/Mixed Anasazi and Mogollon		
	Early Pithouse	AD 200 -- 750
	Late Pithouse	AD 750 -- 1100
	Early Pueblo	AD 1100 -- 1200

	Late Pueblo	AD 1200 -- 1400
	unspecified Jornada Mogollon	AD 200 -- 1400
Mogollon (Mimbres)/Mixed Anasazi and Mogollon		
	Early Pithouse	AD 200 -- 600
	Late Pithouse	AD 600 -- 1000
	Early Pueblo	AD 1000 -- 1200
	Late Pueblo	AD 1200 -- 1400
	unspecified Mimbres Mogollon	AD 200 -- 1400

Casas Grandes

Late Pithouse	AD 600 -- 1000
Early Pueblo	AD 1000 -- 1200
Late Pueblo	AD 1200 -- 1400
unspecified Casas Grandes	AD 600 -- 1400

Hohokam

Pioneer	AD 500 -- 800
Colonial	AD 800 -- 1000
Sedentary	AD 1000 -- 1175
Classic	AD 1175 -- 1450
unspecified Hohokam	AD 500 -- 1450

Plains Village

Plains Woodland	AD 250 -- 1000
Panhandle Aspect	AD 1000 -- 1550
unspecified Plains Village	AD 250 -- 1550

Plains Nomad

unspecified Plains Nomad	AD 1500 -- 1900

Navajo

Pre Pueblo Revolt	< 1692
Post Pueblo Revolt	AD 1692 -- 1753
Pre-Reservation	AD 1753 -- 1868
Early Reservation (to arrival of RR)	AD 1868 -- 1880
Middle Reservation (to WWI)	AD 1880 -- 1920
Late Reservation (to WWII)	AD 1920 -- 1945
Recent	AD 1945 -- present
unspecified Navajo	AD 1500 -- present

Hispanic, Anglo/Euro-American, Pueblo, Ute, and Apache

unspecified Historic	AD 1539 -- present
Spanish Contact/Colonial	AD 1539 -- 1680

Pueblo Revolt	AD 1680 -- 1692
Post Pueblo Revolt	AD 1692 -- 1821
Mexican/Santa Fe Trail	AD 1821 -- 1846
US Territorial	AD 1846 -- 1912
Statehood -- WWII	AD 1912 -- 1945
Recent	AD 1945 -- present
unspecified Hispanic, Pueblo, etc.	AD 1539 -- present

Unknown and Other Cultures

unspecific Prehistoric	< AD 1550
unspecific Historic	AD 1550 -- present
unknown	< present

APPENDIX 6. ARCHEOLOGICAL PHASE AND COMPLEX NAMES

Culture **Location/Sequence Name and Primary References**	
	• Phase/Complex Name (Earliest - Latest)
Paleoindian	
Statewide Paleoindian Complexes (Judge 1974; Cordell 1984):	
	• Sandia
	• Clovis
	• Folsom
	• Midland
	• Plainview
	• Meserve
	• Milnesand
	• Firstview
	• San Jon
	• Portales
	• Belen
	• Agate Basin
	• Hell Gap
	• Alberta
	• Frederick
	• Cody
	• Scottsbluff
	• Eden
Archaic	
Oshara Tradition: Northern NM (Irwin-Williams 1973):	

	• Jay
	• Bajada
	• San Jose
	• Armijo
	• En Medio (also Anasazi)
Cochise Tradition: Southern NM (Stuart and Gauthier 1981):	
	• Sulphur Spring
	• Chiricahua
	• San Pedro
Southeastern NM Archaic (Lehmer 1948):	
	• Hueco (also Mogollon)

Anasazi

Acoma Area (Dittert 1969):

- White Mound
- Kiatuthlanna
- Red Mesa
- Cebolleta
- Pilares
- Kowina
- Cubero (also Historic Pueblo)

Chaco Canyon Area (Vivian and Mathews 1964):

- La Plata
- White Mound
- Kiatuthlanna
- Red Mesa
- Hosta Butte
- Bonito
- McElmo
- Mesa Verde

Chuska Valley (Peckham and Wilson n.d.; Windes 1977):

- Ceramic Group 1
- Ceramic Group 2
- Ceramic Group 3
- Ceramic Group 4
- Ceramic Group 5
- Ceramic Group 6
- Ceramic Group 7

- Ceramic Group 8
- Ceramic Group 9

Cimarron Area (Glassow 1980):

- Vermejo
- Pedregoso
- Escritores
- Ponil
- Cimarron

Cross Canyon Area (Olson and Wasley 1956):

- La Plata
- Lino
- White Mound
- Kiatuthlanna
- Red Mesa
- Cross Canyon
- Kinlichee

Gallina Area (Dick 1976):

- Gallina/Largo-Gallina

Middle Rio Grande Valley (Cordell 1979):

- San Marcial
- Red Mesa
- Kwahe'e
- Socorro
- Santa Fe
- Wiyo
- Glaze A
- Glaze B
- Glaze C
- Glaze D
- Glaze E (also Pueblo)

Picuris Area (Dick 1975):

- Taos
- Santa Fe
- Talpa
- Vadito
- San Lazaro (also Pueblo)

Rio Abajo (Marshall and Walt 1984):

- San Marcial

- Tajo
- Elmendorf
- Ancestral Piro

Rio Puerco Valley East (Irwin Williams 1973):

- En Medio (also Archaic)
- Trujillo
- Sky Village
- Loma Alta

Rio Puerco Valley West (Wasley 1959):

- Black Creek
- Lupton
- La Plata
- White Mound
- Kiatuthlanna
- Red Mesa
- Wingate
- Houck
- Kintiel

Salinas District (Toulouse and Stevenson 1960):

- San Marcial
- Red Mesa
- Socorro/Cebolleta
- Claunch
- Arroyo Seco
- Gran Quivira
- Pueblo Colorado
- Pueblo Pardo (also Pueblo)

Upper San Juan Valley, CO (Hayes 1964):

- La Plata
- Piedra
- Ackmen
- Mancos
- McElmo
- Mesa Verde

Tano Basin (Smiley Stubbs and Bannister 1953):

- Red Mesa
- Kwahe'e/Socorro
- Santa Fe

- Wiyo/Galisteo
- Glaze A
- Glaze B
- Glaze C
- Glaze D
- Glaze E (also Pueblo)

Taos Area (Wetherington 1968):

- Red Mesa
- Valdez
- Pot Creek
- Talpa

Tewa Basin (Smiley, Stubbs, and Bannister 1953; Ford, Schroeder, and Peckham 1979; Warren 1979):

- Red Mesa
- Tesuque
- Pindi
- Galisteo
- Wiyo
- Biscuit A
- Biscuit B
- Sankawi (also Pueblo)
- Tewa (also Pueblo)

Upper Pecos Valley (Kidder 1958; Schroeder 1979):

- Red Mesa
- Kwahe'e
- Santa Fe
- Wiyo/Galisteo
- Glaze I
- Glaze II
- Glaze III
- Glaze IV (also Pueblo)

Navajo Reservoir District (Eddy 1966):

- Los Pinos
- Sambrito
- Rosa
- Piedra
- Arboles
- Chimney Rock

Zuni Area (Danson 1957):

- White Mound
- Kiatuthlanna
- Red Mesa
- Wingate
- Twin Lake
- Nutria

Mixed Anasazi and Mogollon

Any Anasazi or Mogollon Phase may be used

Mogollon

Jornada Area North (Lehmer 1948):

- Capitan
- Three Rivers
- San Andres

Jornada Area South (Lehmer 1948):

- Mesilla
- Do–a Ana
- El Paso

Middle Pecos Valley (Jelinek 1967):

- Early 18-Mile
- Late 18-Mile
- Early Mesita Negra
- Late Mesita Negra
- Early McKenzie
- Late McKenzie

Mimbres Valley (Martin and Rinaldo 1950; Stuart and Gauthier 1981):

- Pine Lawn
- Georgetown
- San Lorenzo
- San Francisco
- Three Circle
- Mimbres/Mangus
- Animas/Black Mountain
- Salado/Cliff

Reserve Area (Martin and Rinaldo 1950):

- Pine Lawn
- Georgetown
- San Francisco
- Three Circle

- Reserve
- Apache Creek
- Tularosa
- Foote Creek

Sierra Blanca Mountains (Kelly 1966):

- Glencoe
- Corona
- Lincoln

Southeastern NM (Corley 1965; Leslie 1979):

- Hueco (also Archaic)
- Querecho
- Maljamar
- Post-Maljamar/Pre-Ochoa
- Ochoa

Casas Grandes

New Mexico Bootheel (DeAtley 1980; DeAtley and Findlow 1982)

- San Luis
- Animas
- Salado

Plains Village

Northeast New Mexico (Wendorf 1960):

- Apishapa
- Antelope Creek

Plains Nomad

No Phases Available

Navajo

Eastern Navajo Area (Hester 1962):

- Piedra Lumbre (Chama Valley)
- Dinetah (Upper San Juan)
- Gobernador
- Cabezon

Apache

Cimarron Area Jicarilla Apache (Glassow 1980):

- Cojo
- Jicarilla

Ute

No Phases Available

Pueblo

Acoma Area (Dittert 1969):

- Cubero (also Anasazi)
- Acoma

Middle Rio Grande Valley (Cordell 1979):

- Glaze E (also Anasazi)
- Glaze F
- Towa, Tiwa, Keres

Picuris Area (Dick 1975):

- San Lazaro (also Anasazi)
- Trampas
- Cuartelejo
- Apodaca
- Pe–asco

Rio Abajo (Marshall and Walt 1984):

- Colonial Piro

Salinas District (Toulouse and Stevenson 1960):

- Pueblo Pardo (also Anasazi)
- Salinas

Tano Basin (Smiley, Stubbs, and Bannister 1953):

- Glaze E (also Anasazi)
- Glaze F

Taos Area (Wetherington 1968):

- Taos

Tewa Basin (Smiley, Stubbs, and Bannister 1953; Ford, Schroeder, and Peckham 1979; Warren 1979):

- Sankawi (also Anasazi)
- Tewa (also Anasazi)

Upper Pecos Valley (Kidder 1958; Schroeder 1979):

- Glaze IV (also Anasazi)
- Glaze V
- Glaze VI
- Tewa Series

Zuni Area (Danson 1957):

- Zuni

Hispanic

No Phases Available

Anglo/Euro-American

No Phases Available

Other Cultures

Any phase name may be used

Unknown Culture

Phases may NOT be entered for Unknown Cultures

APPENDIX 7. FEATURE DEFINITIONS

Agricultural Field: An expanse of land that is or has been used for cultivation, not necessarily formally bounded. Validation: historic and prehistoric ceramic components only. Related features: **Garden Plot/Grid Garden**, **Orchard**, **Soil Control Structure**.

Ash Stain: A distinct coloration of areas of soil on a site, usually bounded. Ash stains are distinctly gray in color, and may include bits of charcoal. Related features: **Charcoal Stain**, **Dump**, **Hearth**, **Midden**.

Ball Court: A elongated, slightly oval, and unroofed structure excavated into the ground and typical of the Hohokam and Casas Grandes cultures in the American Southwest. Validation: prehistoric ceramic components only.

Barn: A large farm or ranch building used to house/store livestock and/or machinery, feed, and equipment. Includes stables. Validation: historic components only. Related features: **Fired-Brick Structure**, **Milled Lumber Structure**, **Outbuilding**, **Shed**.

Bedrock Mortar: A pecked or ground concavity in a large boulder or outcrop used for the processing of food or other items.

Bin/Cist: A constructed/enclosed storage space which may be above, partially or completely underground.

Brick Kiln: A formal oven used to bake molded clay bricks. Validation: historic components only. Related features: **Coke Oven**, **Lime Kiln**, **Kiln**, **Horno/Oven**, **Pottery Kiln**.

Bridge: A foot, automobile, or railroad bridge. Describe construction details and function under **Feature Remarks**. Validation: historic components only. Related features: **Road/Trail**, **Railroad Tracks/Bed**.

Burial/Grave: Unmarked human interment or isolated grave. A *mortally challenged* individual. Related features: **Cemetery**.

Burned Rock Midden: Large dense concentrations, often mounded, of fire cracked rock (FCR), usually associated with large scale plant processing. Although other cultural materials are usually present in the midden, FCR is predominant. Related features: **Hearth**, **Mescal Pit**, **Ring Midden**, **Roasting Pit**, **Sweat Lodge**.

Cairn: A mound or stack of rocks used to mark the locations of boundaries or claims. Related features: **Fence**, **Shrine**, **Undefined Rock Alignment**, **Wall**.

Car Body: The major portion of a car or truck abandoned on a site. If the car body has been modified for other use, indicate this under **Feature Remarks**. Validation: historic components only.

Cavate Room: Habitation rooms carved out in volcanic tuff or other soft material. Validation: historic and prehistoric ceramic components only. Related features: **Cave**, **Cliff Dwelling**, **Rockshelter**.

Cave: A natural hollow or opening beneath the earth's surface, with an aperture to the surface, with evidence of human use. Caves may or may not have been modified for/by human use. A cave differs from rockshelter in terms of depth penetration and the constriction of the opening. Related features: **Cavate Room**, **Cliff Dwelling**, **Rockshelter**.

Cemetery: A formal place for the burying of the dead. Use for formal, sanctified, burial grounds, private grave plots, and *camposantos*. Validation: historic components only. Related features: **Burial/Grave**.

Charcoal Stain: A distinct dark coloration of areas of soil on a site, usually bounded. Use for all surficial stains which are believed to be cultural but which nature is indeterminate. Related features **Ash Stain**, **Dump**, **Hearth**, **Midden**.

Church/Religious Structure: A building designed for public religious services. Includes meeting houses, synagogues, moradas, and chapels. Validation: historic components only.

Clay Quarry: A natural source for clay. May be a localized geologic feature or an area with dispersed concentrations (e.g., a riverbank). Validation: historic and prehistoric ceramic components only. Related features: **Quarry**.

Cliff Dwelling: A habitation structure constructed in an overhang, alcove, cave, or other concavity, or along a ledge, in/on a cliff face. Use only in those cases where the structure incorporates existing geological features. Validation: historic and prehistoric ceramic components only. Related features: **Cavate Room**, **Cave**, **Rockshelter**.

Coke Oven: A firing structure used to reduce bituminous coal to carbonaceous residue. The procedure was used to produce coal gas in a destructive distillation process, or in the production of coke to produce steel. Validation: historic components only. Related features: **Brick Kiln**, **Lime Kiln**, **Kiln**, **Horno/Oven**, **Pottery Kiln**.

Corral: An enclosure for confining livestock. May be constructed of any materials from brush to automobile parts, and incorporate natural features or vegetation as part of the enclosure. Validation: historic components only. Related features **Fence**, **Lambing Pen**, **Stockade**, **Wall**.

Depression: An area that is sunk below the immediate surrounding terrain. Use to indicate depressions that are a direct result of some human activity but the nature of which is unclear. Related features: **Dugout**, **Great Kiva**, **Kiva**, **Outhouse**, **Pithouse**.

Dugout: A structure formed by excavation into the ground and then roofed over. May be dug into the side of a hill, or have a stair access. Usually found on historic homesteads as residence and storage. Validation: historic components only. Related features: **Depression**, **Outbuilding**, **Shed**.

Dump: Formal or informal concentrations of historic trash, containing individual or multiple episodes of deposition. Use for all ash or coal-cinder dumps. Validation: historic components only. Related features: **Ash Stain**, **Charcoal Stain**, **Midden**.

Fence: A structure that creates a boundary, barrier, or enclosure. Construction materials can vary widely, from the use of unmodified natural materials (such as brush), to the use of electrified wire. Validation: historic components only. Related features: **Corral**, **Lambing Pen**, **Stockade**,

Wall.

Fired Brick Structure: Any structure constructed of fired brick. Validation: historic components only. Related features: **Barn**, **Church**, **House Extant**, **House Foundation**, **Log Cabin**, **Milled Lumber Structure**, **Outbuildings**.

Forked Stick Hogan: A conical Navajo dwelling with a central forked log support. Logs are leaned against the central support and covered with brush and earth. Validation: historic components only. Related features: **Hogan**, **Sweat Lodge**, **Wickiup**.

Game Pit/Trap: All passive hunting phenomena including drop sites, deadfalls, snares, dead end traps, and beating corridors. Related features: **Cairn**, **Depression**, **Undefined Rock Alignment**, **Wall**.

Garden Plot/Grid Garden: Small, formal agricultural areas, often bounded with cobbles and containing gravel mulch. Validation: historic and prehistoric ceramic components only. Related features: **Agricultural Field**, **Soil Control Structure**, **Water Control Device**.

Graffiti: Markings or writings, usually crude, made upon a surface. Use for *tree art* or *aspen art* as well as modern additions to rock art if those additions are considered part of a site component. Validation: historic components only. Related features: **Petroglyph** and **Pictograph**.

Grain Mill: A structure originally equipped with machinery for the processing by grinding or crushing of grains. Validation: historic components only. Related features: **Sawmill**.

Great Kiva: *Large* kiva. *Big* kiva. *Gigantic* kiva. Validation: prehistoric ceramic components only. Related features: **Depression**, **Kiva**, **Pithouse**.

Hearth: An extramural, localized area of controlled intentional burning. Encompasses all surficial fire-related phenomena including fire pits, formal hearths, unstructured hearths, fire rings, burned rock rings, fire deflectors, and slab-lined hearths. Hearth does not include standing fireplaces or chimney remnants. Such items should be entered as part of a House Foundation. Related features: **Ash Stain**, **Burned Rock Midden**, **Charcoal Stain**, **Horno/Oven**, **Mescal Pit**, **Pottery Kiln**, **Ring Midden**, **Roasting Pit**, **Sweat Lodge**.

Hogan: A Navajo dwelling, usually round or later octagonal. Includes masonry, cribbed log and framed structures. Use for hogan foundations and deteriorating hogans as well as standing hogans. Validation: historic components only. Related features: **Forked-Stick Hogan**, **Stone Circle**, **Tipi Ring**, **Wickiup**.

Horno/Oven: An enclosed space used to heat objects placed within its bounds. Includes earth ovens, oven pits, mud ovens, and bread ovens. Related features: **Brick Kiln**, **Coke Oven**, **Hearth**, **Kiln**, **Lime Kiln**, **Mescal Pit**, **Pottery Kiln**, **Roasting Pit**.

House Extant: A habitation structure. Use for standing structures, especially if presently occupied. Validation: historic components only. Related features: **Fired Brick Structure**, **House Foundation**, **Isolated Room**, **Log Cabin**, **Milled Lumber Structure**, **Roomblock**.

House Foundation: The remains of a habitation structure, including collapsed buildings. Includes footings of various materials, formal house cellars, cement slabs, builders trenches, and crawl spaces. Validation: historic components only. Related features: **Mound**, **Isolated Room**, **Roomblock**, **Undefined Rock Alignment**, **Wall**.

Irrigation Ditch/System: A ditch or interrelated group of ditches/acequias, head gates, and drains that constitute a irrigation system for individual watering and irrigation features. Validation: historic and prehistoric ceramic components only. Related features: **Water Control Device**, **Water Catchment Device**.

Isolated Room: The remains of a small surface structure constructed of adobe, jacal, or masonry. Structure should be spatially detached from any other larger structure. Describe building material(s) under **Feature ID**, **Notes** or **Feature Remarks**. Related features: **Fired Brick Structure**, **Forked Stick Hogan**, **Hogan**, **House Extant**, **House Foundation**, **Milled Lumber Structure**, **Mound**, **Outbuilding**, **Outhouse**, **Ramada/Shelter**, **Roomblock**, **Shed**, **Sweat Lodge**, **Tipi Ring**, **Tower**, **Undefined Rock Alignment**, **Wall**, **Wickiup**.

Kiln: Any of various ovens used for hardening, firing, burning or drying substances. Related features: **Brick Kiln**, **Coke Oven**, **Lime Kiln**, **Horno/Oven**, **Pottery Kiln**.

Kiva: A circular or rectangular ceremonial structure. Kivas may be subterranean or part of a surface roomblock. Kiva can be used for excavated and unexcavated features if there is reasonable certainty in interpretation of surficial remains. Validation: historic and prehistoric ceramic components only. Related features: **Depression**, **Great Kiva**, **Pithouse**.

Lambing Pen: A small, sheltered enclosure used to protect young lambs. Validation: historic components only. Related features **Corral**, **Fence**, **Wall**.

Lime Kiln: A furnace used to reduce naturally occurring forms of calcium carbonate to lime. Validation: historic components only. Related features: **Brick Kiln**, **Coke Oven**, **Kiln**, **Horno/Oven**, **Pottery Kiln**.

Lithic Quarry: Use only for actual outcrops of lithic material that have been mined or otherwise exploited for the purpose of stone tool manufacture. Related features: **Quarry**.

Log Cabin: Historic structure built of logs. Footing types and roofs vary. Use for extant and partially dismantled or deteriorated cabins. Validation: historic components only. Related features: **Fired Brick Structure**, **House Extant**, **House Foundation**, **Isolated Room**, **Milled Lumber Structure**, **Outbuilding**, **Shed**.

Mescal Pit: A pit dug for the processing of succulent plants. Often leaves behind masses of fire-cracked rock and charcoal stained sediments. Related features: **Ash Stain**, **Burned Rock Midden**, **Charcoal Stain**, **Hearth**, **Horno/Oven**, **Ring Midden**, **Roasting Pit**.

Midden: An archeological deposit exposed on the surface of a site containing discarded artifacts and materials. Middens may have considerable depth, or may be entirely surficial (i.e., sheet midden). Midden deposits normally contain ashy or charcoal-stained sediments, and domestic trash such as sherds, lithic debitage, and bone. Use for protohistoric and prehistoric trash deposits. Related features: **Ash Stain**, **Burned Rock Midden**, **Dump**, **Charcoal Stain**, **Ring Midden**.

Milled Lumber Structure: Collapsed remains of a structure built of processed lumber, usually with a minimal foundation. Validation: historic components only. Related features: **Barn**, **Mill**, **Isolated Room**, **Outbuilding**, **Outhouse**, **Shed**, **Fired Brick Structure**, **House Extant**, **House Foundation**, **Log Cabin**.

Mine Shaft/Tunnel: Mine shafts and tunnels of all types (e.g., portals, adits, vent shafts, prospects, haulage tunnels). Related features: **Mine Waste**, **Ore Processing Facility**, **Ore Transport Feature**.

Mine Waste: Mill tailings, mine spoils, coal piles, and so on. Related features: **Mine Shaft/Tunnel**, **Ore Processing Facility**, **Ore Transport Feature**.

Mound: A pile of materials which *may* represent the remains of a structure. Use for structural mounds which cannot be further differentiated (e.g., rubble mounds). Related features: **House Foundation**, **Isolated Room**, **Roomblock**, **Wall**.

Orchard: An area of land devoted to the cultivation of fruit or nut trees. Validation: historic components only. Related features: **Agricultural Field**, **Garden Plot/Grid Garden**.

Ore Processing Facility: Ore mill structures and abandoned machinery (e.g., concentrators, ball and stamp mills, conveyor belts, leaching vats). Related features: **Mine Shaft/Tunnel**, **Mine Waste**, **Ore Transport Feature**.

Ore Transport Feature: Structures and features associated with the transport of ore (or coal) from mine to mill to final shipping by truck or rail (e.g., headframes, hoist machinery and housing, flumes, loadouts, trams). Validation: historic components only. Related features: **Bridge**, **Mine Shaft/Tunnel**, **Mine Waste**, **Ore Processing Facility**, **Railroad Tracks/Bed**, **Road/Trail**.

Outbuilding: Structures separated from, but related to, the principal structure on an residential site. Includes chicken coops, storage buildings, well houses, etc. Describe construction materials in **Feature ID**, **Notes** or **Feature Remarks**. Validation: historic components only. Related features: **Barn**, **Dugout**, **Fired Brick Structure**, **Isolated Room**, **Milled Lumber Structure**, **Outhouse**, **Ramada/Shelter**, **Shed**.

Outhouse: A small structure housing an outdoor toilet, or the remains of such a structure. Validation: historic components only. Related features: **Barn**, **Dugout**, **Fired Brick Structure**, **Depression**, **Isolated Room**, **Milled Lumber Structure**, **Outbuilding**, **Ramada/Shelter**, **Shed**.

Petroglyph: A design scratched, pecked, or scraped into a rock surface. Related features: **Graffiti**, **Pictograph**.

Pictograph: A design drawn in pigment upon an unprepared or ground rock surface. Related features: **Graffiti**, **Petroglyph**.

Pithouse: A habitation structure built entirely or partially underground. Related features: **Depression**, **Dugout**, **Great Kiva**, **Kiva**.

Plaza: An open area which may be partially or completely enclosed by structural remains (standing or collapsed), used for community activities. May contain temporary structures (e.g. sun shades or ramadas) as well as special activity areas (milling bins, hearths). Validation: historic and prehistoric ceramic components only. Related features: **Church/Religious Structure**, **Great Kiva**, **Kiva**, **Ramada/Shelter**, **Roomblock**, **Tower**.

Pottery Kiln: An oven or heated enclosed space for firing pottery. Validation: historic and prehistoric ceramic components only. Related features: **Brick Kiln**, **Coke Oven**, **Kiln**, **Lime Kiln**, **Horno/Oven**.

Quarry: An area where geological materials are available for removal and use off-site, primarily as building materials. Use for large scale as well as small material removal sites (e.g. limestone, stone, gravel, and sand pits). Related features: **Lithic Quarry**.

Railroad Tracks/Bed: Use to designate portions of rail bed or tracks. Validation: historic components only. Related features: **Bridge**, **Road/Trail**.

Ramada/Shelter: All temporary shelters, including lean-tos, windbreaks, brush enclosures and sun shades. Related features: **Stone Circle**, **Sweat Lodge**, **Tent Base**, **Tipi Ring**, **Wickiup**.

Reservoir: A natural or artificial lake in which water can be stored for future use. Related features: **Spring Control Structure, Tank**, **Water Catchment Device**, **Water Control Device**.

Ring Midden: A general donut-shaped or concentric burned rock midden. Related features: **Burned Rock Midden**, **Hearth**, **Mescal Pit**, **Roasting Pit**.

Road Associated Feature: Features that occur in context with prehistoric road systems. Includes *herreduras* and ramps. Validation: prehistoric ceramic components only. Related features: **Road/Trail**, **Stairway**.

Road/Trail: Formal or informal way used for the passage of humans, animals, and/or vehicles. Related features: **Bridge**, **Railroad Tracks/Bed**, **Road/Trail**, **Stairway**..

Roasting Pit: An excavated hole or pit for cooking without the direct application of fire, usually accompanied by concentrations of burned rock. Related features: **Burned Rock Midden**, **Dump**, **Hearth**, **Horno/Oven**, **Mescal Pit**, **Midden**, **Ring Midden**.

Rockshelter: Overhang, indentation, or alcove formed naturally by rockfall or in a rockface, generally not of great depth, with evidence of human use. Rockshelters may or may not be modified with structural elements for human use. Related features: **Cave**, **Cavate Room**, **Cliff Dwelling**.

Roomblock: The remains of a contiguous, multiroom habitation structure constructed of adobe, jacal, or masonry. Usually manifests a surface mound with construction debris exposed, and some wall alignments visible. Includes all *pueblos* and Navajo *pueblitos*. Describe building material(s) and provide an estimate of the number of rooms under **Feature ID**, **Notes** or **Feature Remarks**. Validation: historic and prehistoric ceramic components only. Related features: **Fired Brick Structure**, **Forked Stick Hogan**, **Hogan**, **House Extant**, **House Foundation**, **Isolated Room**, **Milled Lumber Structure**, **Mound**, **Outbuilding**, **Outhouse**, **Ramada/Shelter**, **Roomblock**, **Shed**, **Sweat Lodge**, **Tower**, **Undefined Rock Alignment**, **Wall**, **Wickiup**

Sawmill: A facility for the production of lumber from raw logs. May be a temporary feature. Validation: historic components only. Related features: **Mill**.

Scarecrow: Cloth-covered stick figures, located in elevated positions around agricultural fields, livestock areas, or habitations. Validation: historic components only.

Shed: See *Outbuilding*. Validation: historic components only. Related features: **Barn**, **Dugout**, **Isolated Room**, **Log Cabin**, **Milled Lumber Structure**, **Outbuilding**, **Outhouse**, **Ramada/Shelter**.

Shrine: A place, marked or unmarked, that is held sacred. Related features: **Cairn**, **Cave**, **Church/Religious Structure**, **Depression**, **Mound**, **Stone Circle**, **Undefined Rock Alignment**.

Soil Control Structure: A constructed device for the capture and/or maintenance of soils, usually for agricultural purposes. Includes terraces, erosion control fences, and dirt traps. Validation: historic and prehistoric ceramic components only. Related features: **Agricultural Field**, **Cairn**, **Garden Plot/Grid Garden**, **Undefined Rock Alignment**, **Water Catchment Device**, **Water Control Device**.

Spring Control Structure: Any modification of a natural spring to increase or/and control the flow. Includes spring improvements, pipe installations, and stock troughs. Related features: **Irrigation Ditch/System**, **Tank**, **Reservoir**, **Water Catchment Device**, **Water Control Device**, **Well**.

Stage Stop: A structure situated along an established stage line for watering, horse changes, and mail/passenger exchanges. Include the name of the stage line in the **Site Name(s)** field of the LA Site Record. Validation: historic components only. Related features: **Barn**, **Corral**, **Dugout**, **Isolated Room**, **Outbuilding**, **Outhouse**, **Roomblock**, **Shed**, **Well**.

Stairway: A series of steps allowing access to a different level. Use for toe/hand holds, stairs, ladders, etc., for both prehistoric and historic phenomena. Related features: **Road Associated Feature**.

Stockade: A fortified enclosure, often constructed of timbers or posts driven into ground, or otherwise walled. Validation: historic and prehistoric ceramic components only. Related features: **Corral**, **Fence**, **Lambing Pen**, **Wall**.

Stone Circle: A circular arrangement of stones. Related features: **Bin/Cist**, **Corral**, **Hearth**, **Hogan**, **Isolated Room**, **Lambing Pen**, **Ramada/Shelter**, **Sweat Lodge**, **Tent Base**, **Tipi Ring**, **Wickiup**.

Sweat Lodge: A small enclosure or hut used for steam baths, usually ephemeral in construction. Often has fire-cracked rock and/or hearths in association. Validation: historic components only. Related features: **Ash Stain**, **Burned Rock Midden**, **Charcoal Stain**, **Forked Stick Hogan**, **Hearth**, **Hogan**.

Tank: A capture and/or holding area for water, created by modification of drainages or low spots or the installation of an artificial trough. Included are historic stock impoundments, metal tank stock waters, and wildlife waterers. Validation: historic components only. Related features: **Irrigation Ditch/System**, **Reservoir**, **Spring Control Structure**, **Water Catchment Device**, **Windmill**.

Tent Base: The impression left by a tent, including the rocks used to weight down the edges, stakes, and wear patterns. May include more formal floors as from bomb crates and wooden bases. Validation: historic and prehistoric ceramic components only. Related features: **Ramada/Shelter**, **Stone Circle**, **Sweat Lodge**, **Tipi Ring**, **Wickiup**.

Tipi Ring: The circular rock pattern left when a tipi is dismantled. Validation: historic and prehistoric ceramic components only. Related features: **Ramada/Shelter**, **Stone Circle**, **Sweat Lodge**, **Tent Base**, **Wickiup**.

Tower: A structure which is constructed to provide elevation above the surrounding area. May or may not be attached to other structures. Includes Spanish Colonial *torreones*. Validation: historic and prehistoric ceramic components only. Related features: **Isolated Room**, **Roomblock**.

Trading Post/Mercantile: A station or store, usually in a remote locale, established to trade supplies for local products, often on a barter basis. Also, a retail trade establishment in urban context. Include the name of the trading post in the **Site Name(s)** field of the LA Site Record. Validation: historic components only. Related features: **Barn**, **Corral**, **Dugout**, **Isolated Room**, **Outbuilding**, **Outhouse**, **Roomblock**, **Shed**, **Well**.

Trailer: A vehicle designed to be hauled by a truck or car. Especially a house trailer, which usually is moved and left in one place for an extended period as a habitation. Validation: historic components only. Related features: **Car Body**.

Undefined Rock Alignment: A group of rocks which appear to have some cultural association. Use for possible walls, wall-like phenomena, human produced architectural oddities, rock piles, etc. Related features: **Cairn**, **Fence**, **Garden Plot/Grid Garden**, **House Foundation**, **Isolated Room**, **Mound**, **Roomblock**, **Soil Control Structure**, **Wall**.

Wall: An upright structure which divides, encloses, or protects an area, constructed of various materials. Walls are more substantial than fences. Related features: **Cairn**, **Fence**, **House Foundation, Irrigation Ditch/System**, **Spring Control Structure**, **Tank**, **Undefined Rock Alignment**, **Water Catchment Device**, **Water Control Device**.

Water Catchment Device: A small structure for the collection of water. Includes cisterns and retention dams. Related features: **Reservoir**, **Spring Control Structure**, **Tank**, **Water Control Device**.

Water Control Device: An device which controls the flow of water, particularly run-off. Includes check dams, flumes, gabions, headgates, drop structures, and riprap. Related features: **Irrigation Ditch/System**, **Reservoir**, **Spring Control Structure**, **Tank**, **Water Catchment Device**.

Well: A deep shaft or hole drilled to obtain water or other resources. Related features **Reservoir**, **Windmill**.

Wickiup: A short term habitation constructed of matting, grass, or bark overlaying a frame. Validation: historic and prehistoric ceramic components only. Related features: **Forked Stick Hogan**, **Hogan**, **Stone Circle**, **Ramada/Shelter**, **Sweat Lodge**, **Tent Base**, **Tipi Ring**.

Windmill: A wheel of adjustable blades or shafts rotated by the wind to provide energy to draw water from a well. Validation: historic components only. Related features **Reservoir**, **Tank**, **Water Control Device**, **Well**.

REFERENCES CITED

Cordell, Linda S.

1979 A Cultural Resources Overview of the Middle Rio Grande Valley, New Mexico. USDA Forest Service, Albuquerque, Superintendent of Documents, Washington, D.C.

1984 *Prehistory of the Southwest.* University of New Mexico, Albuquerque.

Corley, John A.

1965 Proposed Eastern Extension of the Jornada Branch of the Jornada Mogollon. In *Transactions of the First Archeological Symposium for Southeastern New Mexico and Western Texas. Lea County Archeology Society Bulletin 1*, pp. 30-36, Hobbs, New Mexico.

Danson, Edward B.

1957 Archaeological Survey of West Central New Mexico and East Central Arizona. *Papers of the Peabody Museum of American Archaeology and Ethnology*, Vol. 44, No. 1, Cambridge.

Dick, Herbert W.

1965 *Picuris Pueblo Excavations.* Clearing House, Springfield, VA.

1976 Archaeological Excavations in the Llaves Area, Santa Fe National Forest, New Mexico 1972-1974. Part 1: Architecture. *Archaeological Report 13.* USDA, Forest Service, Southwest Region, Albuquerque.

Dittert, Albert E.

1969 *Culture Change in the Cebolleta Mesa Region, Central-Western New Mexico.* Unpublished Ph.D. dissertation, University of Arizona, Tucson.

Eddy, Frank W.

1966 Prehistory of the Navajo Reservoir District, Northwestern New Mexico. *Museum of New Mexico Papers in Anthropology*, No. 15. Museum of New Mexico Press, Santa Fe.

Ford, Richard I., Albert H. Schroeder and Stewart L. Peckham

1972 Three Perspectives on Puebloan Prehistory. In *New Perspectives on the Pueblos.* Alfonso Ortiz, editor, School of American Research and University of New Mexico Press, Albuquerque.

Glassow, Michael A.

1980 *Prehistoric Agricultural Developments in the Northern Southwest: A Study in Changing Patterns of Land Use.* Ballena Press, Socorro.

Greenhood, David

1964 *Mapping*. Chicago: University of Chicago Press.

Hayes, Alden C.

1964 *The Archaeological Survey of Wetherill Mesa, Mesa Verde National Park.* National Park Service Archaeology Series, No. 7A, Washington, D.C.

Hester, James J.

1962 Early Navajo Migrations and Acculturation in the Southwest. *Museum of New Mexico Papers in Anthropology 6,* Santa Fe.

Irwin-Williams, Cynthia

1973 The Oshara Tradition: Origins of Anasazi Culture. *Eastern New Mexico Contributions in Anthropology* , Vol. 5, No.1

Jelinek, Arthur J.

1967 A Prehistoric Sequence in the Middle Pecos Valley, New Mexico. *Anthropological Papers, Museum of Anthropology*, University of Michigan, No. 31.

Judge, W. James

n.d. Early Man: Plains and Southwest. *Handbook of North American Indians.* Volume 3, William C. Sturtevant, editor, Smithsonian Institution, Washington, D.C.

Kelley, Jane H.

1966 *The Archaeology of the Sierra Blanca Region of Southwestern New Mexico.* Unpublished Ph.D. dissertation, Harvard University, Cambridge.

Kidder, Alfred V.

1958 Pecos, New Mexico: Archaeological Notes. *Papers of the Robert S. Peabody Foundation for Archaeology 5*. Phillips Academy, Andover.

Lehmer, Donald J.

1948 The Jornada Branch of the Mogollon. *University of Arizona Social Science Bulletin,* No. 17, Vol. 19, No. 2.

Leslie, Robert H.

1979 The Eastern Jornada Mogollon, Extreme Southeastern New Mexico (A Summary). In *Jornada Mogollon Archeology*, P. Beckett and R. N. Wiseman, editors, pp. 179-199, New Mexico Historic Preservation Division, Santa Fe, New Mexico.

Marshall, Michael P., and Henry J. Walt

1984 *Rio Abajo: Prehistory and History of a Rio Grande Province.* New Mexico Historic Preservation Division. Santa Fe.

Martin, Paul S. and John B. Rinaldo

1950 Sites of the Reserve Phase, Pine Lawn Valley, Western New Mexico. *Fieldiana: Anthropology*, Vol. 49, No. 1, Chicago.

Olson, Alan P. and William W. Wasley

1959 An Archaeological Traverse Survey in West-Central New Mexico. In *Pipeline Archaeology,* Fred Wendorf, Nancy Fox, Orian L. Lewis, editors, Laboratory of Anthropology and Museum of Northern Arizona, Santa Fe and Albuquerque.

Peckham, Stewart and John P. Wilson

n.d. *An Archaeological Survey of the Chuska Valley and the Chaco Plateau, Part II.* Unpublished manuscript on file, Laboratory of Anthropology, Museum of New Mexico, Santa Fe.

Schroeder, Albert H.

1979 Pecos Pueblo. In *Handbook of North American Indians, Volume 9*, Alfonzo Ortiz, editor, pp. 430-437, Smithsonian Institution, Washington, D.C.

Smiley, Terah L., Stanley A. Stubbs and Bruce Bannister

1953 A Foundation for the Dating of Some Late Archaeological Sites In the Rio Grande Area, New Mexico: Based on Studies in Tree-Ring Methods and Pottery Analyses. *Laboratory of Tree-Ring Research, Bulletin 6.* University of Arizona, Tuscon.

Stone, William

1990 Geodetic Activities in New Mexico. *Benchmarks*, Vol. 8, No. 3, pp.8-13.

Stuart, David E. and Rory Gauthier

1981 *Prehistoric New Mexico Background for Survey.* New Mexico Historic Preservation Bureau, Santa Fe.

Toulouse, Joseph H. and Robert L. Stevenson

1960 Excavations at Pueblo Pardo. *Papers in Anthropology No. 2,* Museum of New Mexico, Santa Fe.

US Department of Commerce

1978 *Federal Information Processing Standards Publication 55*, National Technical Information Service.

US Department of the Interior

1986 *National Register Bulletin*. No.16, pp. 80-81, National Park Service, Interagency Resources Division.

n.d. *Index to Topographic and Other Map Coverage: New Mexico*. US Geological Survey, National Mapping Program.

Vivian, Gordon and Tom Mathews

1964 Kin Kletso, a Pueblo III Community in Chaco Canyon, New Mexico. *Southwestern Monuments Association Technical Series,* Vol. 6.

Warren, A. Helene

1979 The Glaze Paint Wares of the Upper Rio Grande. In *Archaeological Investigations in Cochiti Reservoir, New Mexico, Volume 4: Adaptive Change in the Northern Rio Grande Valley.* Jan V. Biella and Richard C. Chapman, editors, pp. 187-216, Office of Contract Archaeology, University of New Mexico, Albuquerque.

Wasley, William W.

1959 Cultural Implications of Style Trends in Southwestern Prehistoric Pottery: Basketmaker III to Pueblo II in West Central New Mexico. Ph.D. dissertation, University of Arizona, Tuscon.

Wendorf, Fred

1954 A Reconstruction of Northern Rio Grande Prehistory. *American Anthropologist*, 56:200-227.

1960 The Archaeology of Northeastern New Mexico. *El Palacio*, 67(2):55-65.

Wetherington, Ronald K.

1968 *Excavations at Pot Creek Pueblo.* Fort Burgwin Research Center, No. 6, Taos.

Windes, Thomas C.

1977 Typology and Technology of Anasazi Ceramics. In *Settlement and Subsistence Along the Lower Chaco River*, Charles A. Reher, editor, pp. 279-370, University of New Mexico Press, Albuquerque.

INDEX OF DATA ITEMS

LA PROJECT/ACTIVITY RECORD

LA SITE RECORD

NOTES