Newsletter

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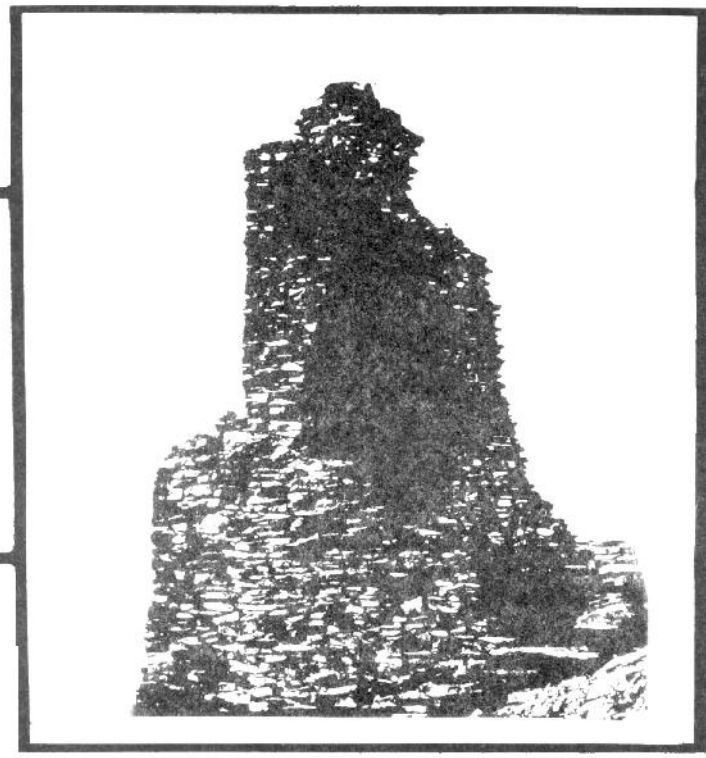
New Mexico Archeological Council



President's Message

On January 25, 1980, the New Mexico Cultural Properties Review Committee recommended funding for a proposal by the New Mexico Archeological Council to sponsor a Workshop Series in Cultural Resource Management. The State Historic Preservation Officer approved the contract on Febrary 14, 1980. With this funding, the Council is now in a position to provide a public forum for discussion of the problems confronting archeological management today.

The first workshop was held in conjunction with the business meeting on February 22. The subject was *Public Archeology*, a broad, wide-ranging topic which served as an introduction to the series. It featured Hester Davis, President of the Society of Professional Archeologists, as well as a panel of professional and amateur archeologists from within New Mexico. Future workshops are planned to cover such topics as *Archeological and Architectural Survey Methods in Historic Preservation, Stabilization and Preservation of Archeological Sites, Research Quality in Cultural Resource Management*, and *Private Industry and Archeology*. The proceedings of these meetings will be published in the Council *Newsletter*.

The funds provided by the Historic Preservation Bureau are to be used for publishing the *Newsletter* and to pay travel expenses for guest speakers. The funds are, of course, *matching funds*. The Council must provide the match. This will be done by computing the value of time spent by members on Council business, such as attending meetings and per diem. However, only non-Federal archeologists may use their time in this way. Federal archeologists may contribute toward matching funds any time spent on Council activities that exceeds their 40 hour (or official appointment time) work week.

Thus, the success of this program depends completely upon attendence at these workshops. Without attendence there will be no matching funds. I urge NMAC members to participate in this program. It will cost you nothing but your time, and will provide us with an opportunity to focus on topics and problems which we have often debated.

First Annual Meeting

The first annual meeting of the NMAC will be held at the New Mexico State Highway Department, 1120 Cerrillos Road, in Santa Fe on April 25, 1980 from 8:30am to 5:00pm. The meeting will be held concurrently with the annual meeting of the Archeological Society of New Mexico and the Santa Fe Chapter of the Archaeological Institute of America. The deadline for submission of paper titles was March 1, 1980.

Joseph A. Tainter
President, NMAC

NMAC Minutes – February 22, 1980

President Joseph Tainter called the meeting to order at 10:00 A.M. at the University of New Mexico, Student Union Building, Albuquerque, New Mexico. The meeting of the Council opened with the announcement of a series of five cultural resource management workshops to be held by NMAC in 1980. The workshops are being funded by a matching grant from the Historic Preservation Bureau of the state of New Mexico and Heritage Conservation and Recreation Service. Matching will be created by computing the value of time contributed by non-Federal participants in the workshops, the travel and per diem costs of guest speakers and the cost of preparing and distributing the Council Newsletter. A time donation sheet was distributed to the participants.

President Tainter announced that the Newsletter will now be published following the workshops and will report the proceedings of these sessions as well as news items and other items of interest to the membership. Frances Levine and Catherine Aves will serve as Newsletter co-editors.

Workshop: Public Archeology

DICK BICE of the Archeological Society of New Mexico was the first speaker for the workshop. He spoke about the certification program for ASNM members. Steven LeBlanc of the Archaeological Conservancy suggested that Mr. Bice supply the members of ASNM with the names of the certified archaeological technicians, and other people in the certification program. This cadre of interested and informed laymen could serve as state-wide informants and assistants for professional archeologists entering a new area. (Mr. Bice's response is included in the Institutional Reports section.)

STEWART PECKHAM was the next speaker representing the Office of the State Archaeologist. Mr. Peckham emphasized the bridge that is needed between *professional* interests and the public. He suggested the organization of a speaker's bureau, and the production of a pamphlet or lay publication on the archeology of New Mexico.

HESTER DAVIS of the Arkansas Archeological Survey was the featured guest speaker. She spoke about the statewide archeological plan that is being written by the Survey; the problems and outline, and the role of state plans in cultural resources management. She discussed several state plans which are being prepared as responses to the needs and problems of the continually increasing scientific and management communities as well as to the problems of research reporting, and scientific standards.

BILL SUNDT, President of the Archaeological Society of New Mexico discussed the history and contributions of amateur societies in New Mexico and Texas. He expressed his concern about the decreasing number of younger members in amateur groups, and stressed the role of professional and amateurs in curating collections and curbing pothunting.

TOM MERLAN, State Historic Preservation Officer was the last workshop speaker. He spoke about the growth of the nationwide Historic Preservation Programs. The emphasis was on the need for interdisciplinary survey and identification projects, and the importance of industry support for archaeological research. In his discussion of the state-wide archaeological plan Mr. Merlan stated four main purposes: 1. To identify those area in which survey work is needed; 2. To identify the pressures on archaeological resources; 3. To set priorities for the expenditure of survey and planning grants; and 4. To arrive at a consensus of research interests. Mr. Merlan also announced that the State now has formal criteria for state register eligibility.

Business Meeting

The business meeting of the Council began at 2:30 P.M.

Bill Dodge read the report of the Native American Coordination Committee. Peter Eidenbach read the report of the RFP Committee. (Both of these are included in the Committee Reports.)

Joe Winter of the Office of Contract Archaeology discussed problems with the R-F-P sent out by the BIA-Gallup for the mitigation of affects on 101 sites on Blocks 6 and 7 of the Navajo Indian Irrigation Project. Discussion followed among the members about the problems with the R-F-P and with attempts by various contracting agencies to have the irregularities reconciled. Dave Stuart made a motion that a telegram be sent to BIA from NMAC about the handling of this R-F-P. The motion was seconded and carried. After some discussion about the content of the telegram Frances Levine made a motion that the mood of the telegram was to express the deep concern of NMAC about this R-F-P. The motion was seconded and carried. Joe Tainter will author the telegram. Some members asked that the record reflect their abstention from the above motions. George West and Bruce Panowski of the NPS-BICR, Dave Doyel of the NNCRMP, and Barry Holt of BIA abstained.

Dee Green announced that the Socorro overview by Mary Jane Berman is available from NTIS for $4.20.

Dr. Green also mentioned that the hearings to discuss regulations for the Archaeological Resources Protection Act of 1979 will be held in Phoenix early in March. BLM-Washington is co-ordinating the hearings.

The meeting was adjourned at 4:00 P.M.

New Mexico Archeological Council

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Committee Reports

Report to the New Mexico Archeological Council Executive Committee and Membership By the RFP Review Committee

Under the direction of the NMAC Executive Council, the RFP Committee has attempted to identify and offer constructive comment on the nature of the difficulties which have plagued the Contract Proposal process in the last few years. Analysis of a representative selection of Requests for Proposal and subsequent discussion have disclosed certain misunderstandings which should and can be clarified to the mutual satisfaction of contracting agencies and professionals alike. As the first step in this clarification we here present a general statement of what we believe to be the basis of the misunderstanding and, thus, the problems which have arisen; a set of recommendations on the solution for the consideration of the Executive Council and membership of NMAC; and a portion of our appraisal in the form of an RFP critique. This committee believes that further analysis and criticism of individual RFP's will be redundant. The basic nature of the problem seems clear. Its solution lies in increased consultation and communication between the archaeological profession and its contract customers.

We, as professionals, recognize that archaeology, first and foremost, is research in human behavior, not simply a management tool for the salvage, restoration or preservation of cultural materials. Further, archaeology is research regardless of the nature of the funding source supporting any particular project. This contention is clearly justified by the fact and opinion from a variety of sources.

1. Archaeology is a science concerned with the discovery and explanation of past human behavior.
2. Specific research is the primary rationale in grant funded projects.
3. While not so obvious, research is basic to contract funded archaeology, as well:
   a. Federal and State Guidelines specifically recognize that clearance and mitigation tasks involve the identification, description and "evaluation of significance" of potentially affected historic and archaeological resources.
   b. Agency RFP's generally require a "research design" as a formal part of contracted projects.
   c. Professional societies, like NMAC, specify standards of research performance which apply equally to all archaeological investigations.
   d. Federal and State landholding agencies require an archaeological research permit for all projects regardless of the project source.

The basic research task of site location and identification has yet to be done in vast areas within the state. Many new projects, especially the larger ones, are planned in these archaeologically unexplored areas where our lack of formal knowledge must be remedied before exploitation and mitigation have seriously damaged the cultural resource base.

Serious difficulties have arisen in the past during the contract proposal process. These difficulties appear to result from a misunderstanding regarding the specific purview of the contracting agency on the one hand, and the professional archaeologist on the other.

All research, contract or otherwise, requires the identification, description, evaluation and communication of empirical data. In archaeology, empirical data consist of two major classes; artifacts (or individual objects) and sites (locations of past human activity). The adequacy of contract research must be judged on the basis of its scientific research value as well as its management value. That scientific value rests on:

1. The successful identification, description and evaluation of empirical data, that is artifacts and sites.
2. Its contribution to the field archaeology at large. This is the spirit and purpose of the law. Archaeological resources are nonrenewable, discontinuous and highly complex. If results of contract research are not successfully communicated (to the field at large), the effect (especially in terms of the true landowners, the public) is the same as the destruction of that resource.
3. Correspondence between the original, proposed research design and the reported results.

The design of the research necessary for the identification and evaluation of cultural resources is the purview of the professional archaeologist, and the nature of that design, as well as the nature of the resource itself will specify the particular methods appropriate.

The landholding or contracting agency should specify the planning and management goals which have initiated the study, and should indicate the level and coverage required by the proposed land use and foreseeable surface disturbance. In particular, a successful and adequate agency RFP should supply the basic data necessary for the formulation of the research design:

1. Location and size of project area;
2. Results (and publications) of previous studies known to them;
3. Current land ownership;
4. Nature of the proposed project;
5. Stage of the project planning and/or management status.

In addition, agencies should explicitly indicate the nature of the product which they require, and specify:

1. The format for the resource management data which they require;
2. The method of publication, distribution and communication of research results. The actual dispersal of reports should be decided by mutual agreement. Since professional archaeologists are most aware of individual interests and ongoing projects which may be related, they should furnish the agency with a list, including mailing address, for distribution within the profession itself, unless other arrangements have been made.

General Recommendations To NMAC

No simple solution to the problems outlined in the attached critique or brought forth in committee discussion can be suggested at this time. However, this committee believes that a substantial improvement could be achieved by NMAC:

1. Develop and adopt a specific RFP policy statement;
2. Actively encourage agencies in developing specific review procedures and formal proposal evaluation criteria;
3. Compile a basic distribution list of professional organizations, libraries and individuals who should receive contract reports;
4. Adopt specific procedure guidelines.

Analysis of RFPS: A Personal Assessment by a Committee Member

1. EMPHASES OF ASSESSMENT:
RFP YA-512-RFP9-52, Chaves County Class III, Roswell District (BLM). Primary Emphasis
RFP YA-512-RFP9-37, Quemado Planning Unit, Socorro District (BLM). Secondary Emphasis

2. OVERALL RANKING OF AGENCY RFPs
   1 Bureau of Reclamation: Effective understanding of proposed project and project area; evaluation criteria given specific weighted values.
   2 I.A.S.: Lots of detailed information about a proposed project; RFPs show thought, concern for the state-of-the-art; the effort required for an effective response is excessive; academic overkill.
   3 Forest Service: Fairly standardized RFPs; limited concern for archaeological theory and "research". Its clear that price is the prime factor in the award of contracts; you know who you're dealing with and what's expected; business first.
   4. BLM: The variability of RFPs reflects the local autonomy of the state and district BLM bureaucracies; there does not appear to be anything other than pedestrian archaeological insight into cultural resources management; BLM archaeological knowledge of the project areas appears organized and sound only in a few cases, e.g. Utah.
   5 New Mexico Highway Department: There was only a limited relationship between the RFP for the Highway 70 ES contract and the method by which the contract was awarded; PR and unknown political considerations heavily affected the award.
   6 State Planning Office and other state agencies: You can't compete for a contract if you don't receive notice of it.
   7 Other (not ranked): The U.S. Army Corps of Engineers. This is a different league than all of the above. To comment on the Corps would be an overwhelming task, far beyond what NMAC has time for.

3. THE ROSWELL DISTRICT RFP
   A. Planning an intensive survey of just about any specific project area within the Roswell District of the BLM is, in essence, putting the cart before the horse. A reconnaissance survey of all of the lands under the jurisdiction of the Roswell District should have been conducted prior to embarking on the proposed intensive survey. Such a reconnaissance survey is necessary in order to properly evaluate the significance of any of the sites in the region.

   The purpose of an intensive survey is to determine the significance of sites and their eligibility for listing in the National Register. Significance evaluations are not to be based on arbitrary judgements, but upon comparison of the archaeological manifestations within an arbitrarily defined project area with the archaeological data base of the surrounding region. This archaeological data base must provide predictive statements concerning the regional nature and distribution of archaeological sites. In addition, the level of archaeological investigation should be sufficient to identify the research problems and priorities of the region. In essence, a basic knowledge of the region's archaeological components and their interrelationships must be established before the archaeological data can adequately serve as an effective evaluatory framework and before *any* intensive surveys and determinations of eligibility are done.

   Southeastern New Mexico has remained one of the least understood parts of the state, archaeologically speaking, due to a dearth of archaeological investigations. The professional neglect of the region stems from the lack of spectacular sites found elsewhere in the Southwest, and from the lack of good stratified sites. Most of the cultural remains are found in deflated, unstratified sites and represent various cultural occupations over a considerable time span. The lack of stratigraphic control of this area of "blowouts" and shifting sand dunes has made work in the area generally undesirable. Many of the cave sites and most of the open sites are shallow and have little stratigraphic separation of the various components.

   Interest in finds from this area was evinced by E.B. Howard and Henry Mera during the 1930's and a number of surveys were conducted under their direction. About this time additional investigations were launched by Roberts, Conklin, and Burnet and Bohannon, principally at cave sites on the western slopes of the Guadalupe Mountains. However, the region has been largely neglected by professional archaeologists during the past thirty years. Materials recovered by these early surveys and materials found in private collections indicate the presence of Early Man, Basketmaker, pueblo-related groups, and Comanche, but as yet no real cultural sequence for the region has been developed, or have the relationships between the various groups represented been established. Much of the work in the area was done prior to the development of radiocarbon dating so that at present firm dates for the area are lacking.

   It would appear that the level of archaeological knowledge in southeastern New Mexico, which includes the Roswell District (BLM) should have been conducted prior to any intensive surveys in order to obtain predictive data on the nature and distribution of archaeological sites. A reconnaissance survey will provide:

   > "a sufficient impression of the area under consideration, and its cultural resources, at least to permit predictions to be made about the distribution of historic properties within the area, and the potential significance of such properties." (Proposed Guidelines: National Park Service. 36 CFR. Part 65).

   According to the background information in the RFP (page 25), "There has been no formal archaeological survey of either the Haystack Mountain area or the Comanche Hill Area...Further, the entire North Dune recreation area was not surveyed for cultural resources." The Roswell District of the BLM has not conducted systematic reconaissance surveys of the lands under its jurisdiction at a scale sufficient to make any useful predictive statements concerning the occurrence and types of cultural resources in southeastern New Mexico.

   B. The Class III survey is supposed to make use of the (as yet unpublished) data from an earlier Class I overview. That overview will be based on site records, many of which are poor, misleading and inaccurate with respect to location, description, size and cultural provenience. The Class I report should have been critically reviewed *before* issuing the Class III RFP. The data may

also be too incomplete for the development of statistically useful statements.

C. The areas to be surveyed are to be redesignated for off-road vehicle use. Sites in the areas will likely be subject to increased human impact, with resulting damage to the remaining site integrity. Certain of the sites might require mitigation. Since there may be a need for additional archaeological assessment beyond the current Class.III survey it is suggested that information collected about each resource should be sufficient to assess potential for National Register eligibility, followed by a mangement plan for the resources. The Class III survey, as outlined in the RFP, is inadequate in scope to provide information sufficient and accurate enough to develop an effective mitigation plan, as required for the report (Section 3.4.2.4 of the RFP).

D. The BLM policies of no artifact pickup and no subsurface examination of sites are harmful. Many sites in the project area have been potted for years. They will continue to be potted, to the extent that most of the diagnostic artifacts will reside in the collections of amateurs. Further, attempts to accurately establish the provenience of disturbed sites is impossible without some subsurface checking. The BLM archaeologists either do not understand the project area or do not care if "sites" are accurately recorded. It is also likely that attempts at in situ identification and analysis of diagnostic artifacts could result in inaccuracies due to the condition of the artifacts (dirty and small, requiring microscopic and other laboratory examination by a specialist.)

E. What is the role of price in BLM contracting? "Prices will be evaluated to determine reasonableness but will not be a weighted factor." What is meant by the statement is very unclear, other than that no point totals per se are given to price. But, consider the outcome for the Quemado contract. Requests for best and final offers were sent to three organizations. Therefore, all three presumably had "reasonable" prices in order to receive the request for BAFO. Yet one organization had a price of 1.8 times the price of the winning organization ($195,000 vs $107,000). The range of "reasonable" appears to be broad. There was a $20,000 difference between the winning and a losing price for the Roswell District contract. If both prices were reasonable, then I must assume the difference was in quality of proposals. Having seen both proposals, I doubt the award was based on quality of proposal. The bottom line appears to have been price.

F. Its bad enough that there is no artifact pickup and analysis, but no photographs of the sites?

G. Comments on the evaluation criteria:

1. No point totals are given for the evaluation factors. Why can't the BLM include a copy of their evaluation sheets?
2. 2.2.3 Offers geographic experience-duplicates "pertinence of related work experience" of Crew Chiefs(2.3.1) and PI (2.3.2).
3. 2.3.3 Education level of-Field Crew members: Acceptable levels are not stated. Do you get more points if you use graduate students? One factor that is becoming apparent in many RFPs is the archaeological bids that ignore or generally downplay history, architecture, statistics and, above all, social science theory. The guiding general principles of the ecosystem, culture, dynamic change and evolution are rarely alluded to. What seems to be sought is data for data's sake, which (therefore) does not require much training in theory for the field personnel. This is not the BLM's fault. The archaeologists, in this case, need to get their own house in order.

RFP REVIEW COMMITTEE

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Suggested Bidding Procedures and Contract Awards

The following is an attempt to clarify the realtionship between contractors and agencies and to stipulate what contractors have a right to expect in bidding.

We suggest that NMAC adopt a set of standard bidding/contracting procedures (either these or some others), that we begin a monitoring process, and that we — as NMAC — begin blowing the whistle on miscreants.

1. CONTRACTOR'S EXPECTATIONS

Contract documents: The contractor has the right to expect that the information in the RFP or description of work is sufficient to enable him/her to prepare complete and accurate estimates that he/she will not be penalized for any deficiencies in these documents.

Legal requirements: The contractor is entitled to assume that the requesting agency is familiar with the legal requirements pertaining to cultural resources inventories and environmental impact statements on the property to be investigated and has described the requirements in the specifications, as well as any unusual stipulations (for example, preparation of National Register forms) that would affect cost. The contractor accepts responsibility for compliance with local or state requirements (for example, collection of artifacts from New Mexico State Lands).

2. AGENCY'S EXPECTATIONS

Contractor's responsibility: The requesting agency had the right to expect the contractor to utilize every effort to perform the work for the lowest possible price within the limits of ethical practices and in complete conformance with the requirements of the contract documents.

3. MAPS

Scale and type: Topographic maps or aerial imagery should be furnished to bidders, showing locations of site, property lines, bench marks, and access roads. The maps or imagery should be at a sufficiently large scale to permit intelligent bidding.

4. SCOPE OF WORK

Specifications: The specifications should be complete, clear, and concise and should contain adequate description of

the various classes of work segregated into appropriate sections.

5. BIDDING

Qualifications of bidders: Bidders should be limited to contractors of established skill, integrity, and responsibility and of proven competence for work of the character and size involved.

Standard bid blank: A blank bid form should be prepared by the requesting agency for each project, a copy of which should be bound with each volume of the RFP. Extra copies shall be furnished to each bidder with the documents for use in preparing the bid.

Non-standard proposals: Bids that are not submitted on the standard form or by the bidding time specified shall be rejected.

Time for preparing bids: Adequate time in which to prepare estimates is essential to sound and effective price competition. Therefore, a reasonable time should be allowed for preparing bids. If, for the best interest of the project, extensions of the time for bidding becomes necessary, bidders should be so notified well ahead of the orginally scheduled opening date. It is recommended that a prebid conference be held, when practical, to resolve questions bidders may have.

Addenda: If a prebid conference is not practical or questions arise after the prebid conference, addenda to the RFP should be issued. No addenda should be issued later than four working days before time for receipt of bids. Contractors should submit questions to the requesting agency as early as possible to allow sufficient time for the agency to respond. Answers to questions from bidders should be in writing, in the form of addenda, with a copy sent to *each* bidder. The agency should allow for sufficient time to prepare and distribute addenda. The contractor should be allowed sufficient time to review the addenda in order to prepare a responsible bid.

6. AWARD OF CONTRACT.

Actions: Except in very special cases and for good cause, action should be taken within ten days of receipt of bids (i.e., contract drawn up, losing bidders notified, etc.).

Error in bid: If, after bids are opened, the accepted bidder claims he/she has made an appreciable error in the preparation of the bid and can support such a claim with evidence satisfactory to the agency, the bidder should be permitted to withdraw the bid. In such an event, action on the remaining bids should be considered as though the withdrawn bid had not been received.

Under no circumstances should a bidder be permitted to alter his/her bid after bids have been opened except in accordance with the first sentence of the following paragraph.

Changes: Minor changes required before signing of the contract should be negotiated only with the selected bidder. If major changes are necessary, they may be negotiated with the selected bidder or the original bids can be rejected and new bids secured from the orignal list of bidders on the basis of revised specifications and maps.

Rejections of bids: The agency has the right to reject all bids for good and sufficient cause. However, this should not be done as a subterfuge 1) to accept a bidder who did not submit a bid before the prices and proposals of the others were made public, or 2) to obtain an estimate of the cost of the work and proceed to award it in segregated or separate contracts or to a bidder definitely selected in advance.

7. COMPLAINTS

When a contractor becomes aware that an irregularity has occurred during the bidding process, he/she should immediately call the irregularity to the attention of the persons involved and should file a formal letter of complaint with the highest officers of the organizations involved — and with NMAC.

In the case of vague or inadequate descriptions of the scope of work, etc., a detailed letter of complaint should be sent to the agency's regional contracting officer, with a copy to the agency's highest official. A copy also should be sent to NMAC.

Carol J. Condie

Quivira Research Center

New Mexico Archeological Council Committee on Native American Relations

General Report to Council Membership

The first meeting of the Committee on Native American Relations was held at the Indian Pueblo Cultural Center, Albuquerque, on January 21, 1980. Attending were T.J. Ferguson, Pueblo of Zuni Archaeology Program; Bruce Harrill, Bureau of Indian Affairs; Laurance D. Linford, Navajo Nation Cultural Resource Management Program; William A. Dodge, Indian Health Service; Joe Winter, Office of Contract Archaeology, University of New Mexico; and Anders Romancito, Pueblo of Zuni Archaeology Program. Not attending, but expressing an interest in participating on the committee, were George West, National Park Service; and Tom Merlan, State Historic Preservation Officer. T.J. Ferguson is serving as committee chairman, and Bill Dodge is serving as committee secretary.

Three topics were discussed at this meeting. First was an assessment of the current state of archaeology and Native American relations in New Mexico to determine the need for the committee. Second was a definition of the purpose, goals , and objectives of the committee; and third was a discussion of the specific actions the committee should take to achieve those goals and objectives. This report on the committee meeting was prepared to share our thoughts about archaeology and Native Americans with the general membership of NMAC, and to seek your advice and comments as to how to continue the work of the committee.

The assessment of the current state of relations between archaeologists and Native Americans was that things in New Mexico are currently very healthy and positive. There are no overt problems or tensions between Indian communities and the archaeological profession as there are in other states such as California. Two tribes in New Mexico (Navajo and Zuni) have archaeological programs engaged in cultural resource management. A lot of good archaeological research is being conducted on Indian lands, including both cultural resource management and academic studies. In general, things are O.K.

Nonetheless, the committee thought that there was room for improvement in the relations between archaeologists and Native Americans. Archaeological research is more often "tolerated" than understood by Indian peoples, and this is detrimental to our reseach. The use of Indian archaeologists, researchers, and consultants is accordingly underdeveloped, and our research is thereby not reaching its full potential. All to often archaeological research is not relevant to Indian interests, and the results of that research are not shared with Indian communities. Archaeological research carried out in or near Indian communities is conducted in a cross cultural context, and sometimes the field behavior and activities of archaeologists presents a distorted view of our profession.

Archaeological research associated with cultural resource management on Indian lands presents its own problems. Often the administration of this research causes delays in project implementation, and this results in ill will and bad feelings. Sometimes local residents are not aware of proposed developments unitl the ar-

chaeologist arrives to conduct his field study, and the archaeologist by necessity has to assume information dissemination functions that are really the responsibility of project planners. Occasionally local residents are opposed to a project, and everything associated with it, including archaeological research, and the archaeologist finds himself in a conflict between Indian individuals and their tribal governments.

Indian values towards archaeological sites are not well understood by many archaeologists, and this limits the ability of the archaeologist to fully assess site significance. A lack of consideration of Indian beliefs and values sometimes leads to the design and implementation of research that is considered inappropriate by Indians.

Another problem for archaeologists in cultural resource management of Indian lands is the consideration of sacred areas or sites as required by the American Indian Religious Freedom Act (PL 95-431). The location and identification of sacred sites is often difficult, and poses special problems for both Indians and archaeologists. Archaeologists are often not qualified to assess project impact and the significance of sacred sites, or to recommend mitigating measures. Closer cooperation with tribal leaders is needed in this area.

Two other areas of concern for archaeologists and Indians were mentioned. One of these was the archaeological excavation or disturbance of burials. The other was the development of archaeological training programs for tribal members.

Following the general discussion and assessment of the current status of relations between Archaeologists and Indians, a Statement of Purpose for the committee was prepared. It reads:

> The purpose of the Committee on Native American Relations is to increase the awareness and understanding of archaeology conducted on Indian lands; to provide a better means of communication and sharing of information between Archaeologists and Indians; and to facilitiate and promote archaeological research on Indian lands that is appropriate and relevant for Indian communities.

Five initial goals or objectives for the committee were identified:

1) To identify Indian concerns about archaeology on tribal lands, and, similarly, to identify the concerns of archaeologists who work on tribal lands or with tribal governments.
2) To inform archaeologists working on Indian lands about tribal laws and procedures pertaining to cultural resources, and to inform them of Indian resource organizations that might be of assistance in research.
3) To provide information to Tribal Councils, tribal planners, and federal agencies about cultural resource management on tribal land, Federal laws, and the general approaches taken towards research by the contemporary archaeological profession.
4) To work towards establishing professional archaeological training programs for tribal members interested in archaeological research and cultural resource management.
5) To explore procedures for preventing potential problems from becoming conflicts between Archaeologists and Native American communities.

To accomplish these goals, the following actions were suggested:

Goal 1 (a) Make initial inquiry into the concerns of the archaeological community through a discussion at a general NMAC meeting; and to follow this up by mailing a questionaire to institutions, agencies, and individuals working on Indian lands requesting circulation among staff to elicit responses from both archaeological administrators and field personnel.

(b) To elicit the concerns of various tribes about archaeology by offering to meet with Tribal Councils or other tribal representatives; or by offering to meet with supra-tribal groups such as the All Indian Pueblo Council, the Six Sandoval Tribes, or the Eight Northern Pueblos. The concerns of Indian individuals will probably best be elicited informally from personal acquaintances of NMAC members.

(c) Where points of concern overlap between the two groups, these points would be the first to receive the attention of the committee.

Goal 2 (a) Obtain tribal codes and procedurtes relating to archaeology on tribal lands.

(b) Compile a list of federal statutes pertaining to archaeology and cultural resource management on Indian land.

(c) Compile a list of tribal museums, historical organizations, tribal historians, and other tribal resource centers that might be helpful in designing and implementing research and in disseminating its results.

(d) Sponsor a symposium or special meeting to discuss the experiences of archaeologists in dealing with tribal agencies.

(e) Draw up general guidelines for working on Indian lands to help archaeologists work smoothly within the tribal structures.

Goal 3 (a) Offer workshops on historic preservation and archaeological research to interested tribal groups or agencies. We hope NMAC will be able to fund some of the expenses of these workshops.

(b) Prepare written statements and other literature and pamphletes which are oriented towards Indian communities, and which explain the goals of archaeological research, and the current Federal laws dealing with cultural resource management.

(c) To serve as a contact point and information source for Tribes experiencing problems or difficulties with archaeology.

Goal 4 (a) To help prepare a curriculum of classroom training and practical experience that will lead to professional archaeological certification for tribal members. The Zuni tribal members of the Zuni Archaeology Program staff think that NMAC should serve as the certifying organization for this program. This is because members of NMAC are employers who will be hiring certified archaeologists. This idea should be discussed at a general meeting of NMAC, and be considered at the next meeting of the committee.

Goal 5 (a) This was the most ill-defined goal, yet one of which was of concern to everyone. It was thought that if the committee was successful in achieving the other goals, there would be little need for Goal 5. It is unclear how much mediation power or authority the committee has, although it was generally agreed that it has very little or none. It was thought that the best position will be to provide informal counseling to head off potential conflicts. The committee hopes that if an archaeologist or tribe foresees a problem they will bring the matter to the attention of the committee for discussion and consideration.

Any discussion, remarks, responses, reactions, suggestions, or other comments about the purpose, goals, and objectives of the Committee on Native American Relations, and how it should continue its work, are heartily solicited from the NMAC membership. Written comments and suggestions should be directed to the committee chairman, T.J. Ferguson, Box 339, Zuni, NM 87327.

T. J. Ferguson

William A. Dodge

ARCHAEOLOGICAL SOCIETY OF NEW MEXICO CERTIFICATION PROGRAM

A presentation of the ASNM Certification Program for amateur archaeologists was given at the NMAC meeting held at UNM on Friday, 22 February, 1980.

The certification program has been in operation for seven years for the purpose of achieving the two following goals:

1. to encourage the development among amateur archaeologists of a broad archaeological and ethnological knowledge that will further the Society's goals relating to the conservation and preservation of our historic and prehistoric heritage.
2. to develop a cadre of experienced archaeological support that can be made available to the professional community in carrying out archaeological assignments.

The request was made at the meeting that names of participants be listed so that institutions carrying out archaeological work in the state will have information concerning potential support capabilities in given areas. However, rather than listing all paticipants, it was felt that it would be more useful to name key people from various parts of the state who have participated in the certification program or its management; who know the archaeological backround of their locales; and who know the types of local talents that may have been developed.

LOCALE	NAME	ADDRESS
	Bain, James G.	1111 Jefferson NE, Alb., NM 87110
	Bice, Richard A.	8714 La Sala del Centro, Alb., NM 87111
	Hayden, John S.	Box 463, Tijeras, NM 87059
	Sundt, William	6707 Mossman Place NE, Alb.,NM 87110
Cochiti Lake	Renwick, Rochard A.	Box 198, Cochiti Lake, Pena Blanca, NM 87041
Crane, TX	Wehrli, Norman	Box 1213, Crane, TX 79731
Dallas, TX	Steed, Paul, Jr.	5543 Yale Blvd., Dallas, TX 75206
El Paso, Tx	Ayer, Elizabeth W.	901 Galloway, El Paso, TX 79902
	Hedrick, John A.	9576 Pistachio, El Paso, TX 79924
Farmington	Hadlock, Harry L.	P.O. Box 397, Fruitland, NM 87416
Gallup	Kelley, Elizabeth	319 Zecca Drive, Gallup, NM 87301
Ghost Ranch (Abiquiu)	Shibley, Darlene	Ghost Ranch, Abiquiu, NM 87510
Hobbs	Runyan, John	2740 N. Northwest Dr., Hobbs, NM 88240
Las Cruces	Beckett, Patrick	P.O. Box 3CD, Las Cruces, NM 88003
Los Alamos	Poore, Anne V.	111 Andananda, Los Alamos, NM 87544
Midland, TX	Stikney, Francis C.	Rt. 2, Box 109-D, Midland, TX 79701
Raton	Robertson, Nancy	Box 10, Raton, NM 87740
Santa Fe	Peckham, Stewart	P.O. Box 2087, Santa Fe, NM 87503
Socorro	Weber, Robert H.	Box 2046, Campus Sta., Socorro, NM 87801

It is hoped that this information will be useful furthering the archaeological programs within the state.

R. A. Bice
Chairman, ASNM
Certification Council

ZUNI ARCHAEOLOGY PROGRAM PUEBLO OF ZUNI

The Zuni Archaeology Program has been conducting several projects over the past year. Small and medium sized cultural resource management contracts have been completed both on and off the Zuni Reservation. An archaeological overview of the Zuni culture area is in its final stages of preparation under the direction of T.J. Ferguson. In addition, an architectural and ethnohistoric study of the Zuni farming villages is currently in progress. Summaries of the results of some of our more significant projects are provided below.

Andrew P. Fowler prepared a report on a survey of 390.6 ha. in Cheama Canyon, located 9.67 km east of Zuni Pueblo. A total of 114 archaeological sites, 82 prehistoric and 32 historic, were located. The prehistoric sites, analysed by A. P. Fowler, indicate occupations of the canyon from ca. A.D. 850 to 1125, with a peak around 1000 to 1050. Sites include both pithouse and pueblo villages. The historic sites, analysed by M. McCarthy, are mostly sheepcamps, corrals, and trash dumps, dated between 1950 and the present.

Andrew Fowler also directed several smaller archaeological surveys for range improvement projects on the Zuni Indian Reservation, and coauthored, with Barbara Holmes, a report of a survey of two dam areas in Nutria and Pescado, being considered as alternatives to the Yellowhouse Dam. A 20 percent sample survey of the two dam areas was designed and implemented with the assistance of statistical consultant Mark Harlan (Office of Contract Archaeology, UNM). Several hypotheses concerning site location and environmental strata were tested, and ethnohistoric research on sheepherding and farming in Zuni was conducted. Research results indicate a prehistoric occupation of Nutria from ca. A.D. 1000 to 1125 and of Pescado from A.D. 1175 to 1300. The two areas were also used intensively for sheepherding and farming during the historic period.

A survey was done of the cultural resources found along a 10 km stretch of the Zuni River, Archaeological survey was done by Barbara Holmes; interviewing on the sacred areas and sites found in the project was done by Edmund Ladd, a Zuni Tribal member and archaeologist with the National Park Service. Besides one site on the National Register (Zuni Pueblo) and two sites eligible for nomination to the Register (Mats'a:kya and Pinna:wa), 5 small prehistoric sites were recorded. In addition, three sacred areas and three shrines were located in the project area. The implications of both types of cultural resources, archaeological and sacred, for CRM recommendations are considered in the report.

Terry Banteah directed a survey for the Eriacho Reseeding Project in the southeast portion of the reservation. Although no prehistoric sites were located, historic occupation was documented. Project results

include the definition of Zuni temporary sheepcamp sites based on archaeological and interview data.

A report on a survey conducted of Miller Canyon (4,883 ha) and the adjacent southeast reservation boundary fenceline (15.7 km) was prepared by Keith Kintigh. Ninety-one sites were recorded in Miller Canyon, while 15 were recorded on the boundary fenceline. The 52 prehistoric sites in Miller Canyon were divided into three chronological periods based on ceramic associations: A.D. 1050-1140, A.D. 1125-1200, and A.D. 1175-1275. The heaviest periods of occupation were the latter two. Site locations were found to be strongly associated with slope, exposure, soil association, and proximity to the treeline.

Test excavations were made under the direction of Katharina J. Schreiber at a small, disturbed site (NM:12K3:122-ZAP) along the Ojo Caliente Road. Those portions of the site remaining at the time of the excavation consisted of a low denisty artifact scatter and several features, including a prehistoric one room masonry structure, one possible structure, two historic hearths, and two human burials. The prehistoric occupations at the site date to ca. A.D. 1050 and ca. A.D. 1150.

Funded by the National Endowment for the Humanities, an architectural and ethnographic study of the Zuni farming villages was begun last year. Photogrammetric maps of each village were prepared by Perry Borchers of the Ohio State University. Ethnohistoric research is being conducted by Barbara Holmes, including archival research and interviews with local residents. Important documentary materials utilized include an 1881 census prepared by F. H. Cushing listing every member of the pueblo and their farming village associations. Three months were spent last fall intensively recording architectural details of two of the six villages. Under the field direction of Barbara J. Mills, every structure at Upper Nutria and Ojo Caliente was drawn, measured, and photographed. The architectural attributes of each room was recorded and all exterior activity areas were plotted and described. In addition, all non-milled structural wood was sampled; 515 cores are presently being analysed by the Laboratory of Tree-Ring Research. Architectural seriation of the villages will be accomplished with the aid of the dendrochronological results, the Mindeleffs' 1885 plans and photographs, other known historic photographs from 1879 to 1923, and interviews with local residents. Our goal on this project is to prepare a social and architectural history of the villages combining all of the above mentioned data bases.

Public Service Co. of N.M.

Public Service Company of New Mexico (PNM) has conducted a number of small projects requiring archeological survey, testing, and mitigation. This work has been carried out by contracting institutions, individual consultants, and in-house staff.

PNM and the State Historic Preservation Bureau have announced the publication of their joint project: ANASAZI COMMUNITIES OF THE SAN JUAN BASIN. The study documents 80 major Anasazi sites in the San Juan Basin and will be used for planning purposes. A copy of the book may be obtained by sending a self-addressed stamped mailer to: Thomas Merlan, SHPO, 505 Don Gaspar, Santa Fe NM 87503. The book measures 8 1/2 X 11 inches, and postage is $1.45. Appreciation is extended to all the agencies, individuals, and organizations who helped make possible the completion of this project.

The larger projects of the past have included: Baca Geothermal (UNM), New Mexico Generating Station near Bisti (DCA), and Seboyeta Pumped Storage (in-house). Reports on Baca and Bisti have been prepared by the contracting institutions. A report on Seboyeta is currently in-press at PNM; copies will be available on request.

The University of New Mexico, Office of Contract Archeology has been selected on the basis of an excellent proposal to conduct mitigative research for the Seboyeta Pumped Storage Project. Field work will begin in 1981, and the project promises to be extremely interesting, particularly in its approach to pre-Bosque Redondo Navajo material.

This Spring (when the snow clears) UNM will complete the Baca project with a survey of a proposed transmission route from Redondo Canyon to Los Alamos. Upcoming and as yet unassigned work for this season will include a major transmission project (Four Corners — Ambrosia — Pajarito 500 kV), and several small distribution projects should also occur.

This may be as good a time as any, as sort of an annual review, to thank the contracting institutions and independent consultants for their excellent work over the past year, and the clearing agencies for their professional advice, understanding, and cooperation. We are particularly grateful to senior members of the archaeological and historical community for their interest in our projects and for sharing their experiences.

C. H. Carrol
Environmental Scientist

R. W. Loose
Environmental Scientist

The Center for Anthropological Studies

The Center for Anthropological Studies has recently published several new volumes related to local archaeology as a beginning to their new, more active publications program.

The new volumes are *The Jemez Canyon Dam Survey* by James B. Rodgers (Number 1 in the Archaeological Reports Series) and *Indian Use of the Santa Fe National Forest: A Determination from Ethnographic Sources* by Eva Friedlander and Pamela J. Pinyan (Number 1 in the Ethnohistorical Series). Both are available from the Center by sending $5 for the Jemez Report or $4 for the Santa Fe Report to P.O. Box 14576, Albuquerque, NM 87191. In addition to the already published works the Center anticipates the publication of the first volume in their Spanish Borderlands Research Series, *Spanish Colonial Frontier Research*, compiled by Henry F. Dobyns, early this summer.

The new publication program has been made possible by the purchase of a Compugraphic 7500 Editwriter typesetting system which allows the Center to prepare all of their publications in-house instead of sending them out to commercial typesetting companies. This has reduced their cost per volume, allowing the production of more publications. In addition to their in-house work the Center is now doing work for other institutions to help pay for the Editwriter and the other recent equipment purchases made for the publication program. Some of their outside work includes the NMAC Newsletter and Pottery Southwest.

For more information on any aspect of the publication program contact Pat McGrew at the Center at 296-4836.

The Archaeological Conservancy

The Archaeological Conservancy is a national, non-profit membership conservation organization dedicated to preserving the best of the remaining sites of prehistoric cultures. Each day these sites are being lost forever along with the information they contain. Professional looters, modern agricultural methods, and urban development all play a significant role in the destruction of our past. Mainly through acquisition, the Conservancy preserves these ancient sites for posterity.

Gifts of money, land containing archaeological sites, securities, etc. are tax deductible under section 501(c)(3) of the Internal Revenue Code. Specific details regarding major gifts should be sought from the Conservancy and your attorney.

Funds for The Archaeological Conservancy come from membership dues, individual contributions, foundation grants and government grants. Money to purchase sites is raised locally on a project by project basis which is sometimes matched by grants from the Historic Preservation Fund administered through State Historic Preservation Offices. Where necessary lines of credit through commercial banks are employed to meet immediate needs.

The Archaeological Conservancy takes immediate action to preserve endangered archaeological sites. Working with local archaeologists and governmental officials, the Conservancy identifies sites most in need of preservation and moves to protect them, usually through acquisitiion of the property. Because the Conservancy is private, it is able to operate more quickly and with fewer constraints than public agencies.

The Conservancy turns over most of the sites it acquires to public agencies for permanent curation. Such agencies include universities, museums, and governments. To insure permanent protection, the Conservancy places very stringent legal restrictions on the property. Archaeological research is permitted, but only within strict limitations that insure the site will be permanently preserved for future generations to study and enjoy.

To save archaeological sites throughout the nation, the Conservancy:

—identifies the most important remaining prehistoric sites that must be preserved,

—permanently protects the sites through either gift, purchase, or by assisting government:

—seeks to educate the public about the destruction of our cultural heritage and how best to preserve what is left.

Steven LeBlanc

Navajo Tribal Museum

In August 1979, J. Lee Correll passed away after serving as Navajo tribal historian for more than twenty-five years. He left behind a legacy of dedication to the people of the Southwest, especially to the Navajos, and a reputation for scholarly research in the areas of Navajo history and culture. Throughout his long association with the Navajo Tribe, Lee Correll was very much involved with the archaeology of this region, starting with the intensive Navajo Land Claims surveys in the 1950's, which covered large portions of the Navajo Reservation and surrounding areas, including the Dinetah region of New Mexico.

In recognition of Correll's many contributions to the Navajo people, the Navajo Tribal Museum, has established the J. Lee Correll Memorial Fund. Proceeds of this fund will enable the museum to acquire a limited edition portfolio of early southwest photographs, to be desingated the J. Lee Correll Memorial Collection.

In light of Lee Correl's long involvement with the archaeology of this region and his many contributions to an understanding of Navajo history, the museum would like to enlist the support of the New Mexico Archaeological Council and of its members for this memorial fund.

Tax deductible contributions may be forwarded to the Navajo Tribal Museum, P.O. Box 308, Window Rock, Arizona 86515. Checks should be made payable to the Navajo Tribal Museum and designated for the J. Lee Correll Memorial Fund. Your support will be greatly appreciated.

Russell P. Hartman

Director
Navajo Tribal Museum

Texas Tech University Department of Entomology

The initial contact has been made to pursue the archeoentomology research of looking at insect fragments appearing in suspected grain storage facilities. A stored product pest entomologist at the University of Minnesota says she has SEMs of the elytra, throax, and a few other structures of the major pests. The elytra micromorphology is particularly species specific and she sees no problem in getting to species level if we have elytra fragments. Fortunately, there are only about a dozen species involved. It is important that I can only do stored product pests from suspected graneries. Beyond that, ther are too many species involved and the SEM technique will not work.

I would like to hear from archaeologists who might be interested in submitting fragments to me. Contact; William P. Morrison, Texas Tech University, Department of Entomology, Box 4169, Lubbock, Texas 79409; (806) 742-2828.

William P. Morrison

Associate Professor

Job Announcement

NMCRMP

The Navajo Nation Cultural Resource Management Program (NMCRMP) is now accepting applications for the position of Assistant Coordinator. Requirements for the position include a Masters Degree or equivalent, experience in Southwestern Archaeology (preferably on the Colorado Plateau), and at least one year experience in contracting management and administration.

The position should be filled sometime in March, 1980, but this is flexible. Salary is very competitive with other such programs. All inquiries should be directed to Manager, NMCRMP, P.O. Box 689, Window Rock, Arizona 86515. By telephone, call 602-871-4941, extension 1540.

David E. Doyel
Manager
Cultural Resource Management Program
Navajo Nation
P.O. Box 689
Window Rock, Arizona 86515

New Mexico Archeological Council, Inc.

Membership Application Year_____ Amount Enclosed _____

Name _____

Address _____

City _____ State _____ Zip Code _____

NMAC Members shall receive a quarterly Newsletter, occasional publications, and NMAC membership privileges. Cost per year: Individual Membership, $7.50; Institutions, Organizations and Sponsors, $25.00.

Please Make Checks and Money Orders Payable to the New Mexico Archeological Council.

Send membership inquiries and/or payment to the New Mexico Archeological Council, c/o Frances Levine, Secretary/Treasurer, 1677 Cerro Gordo Road, Santa Fe, New Mexico 87501.

NOTES

New Mexico Archeological Council
c/o Frances Levine
Sectretary/ Treasurer
1677 Cerro Gordo Road
Santa Fe, New Mexico 87501

Newsletter

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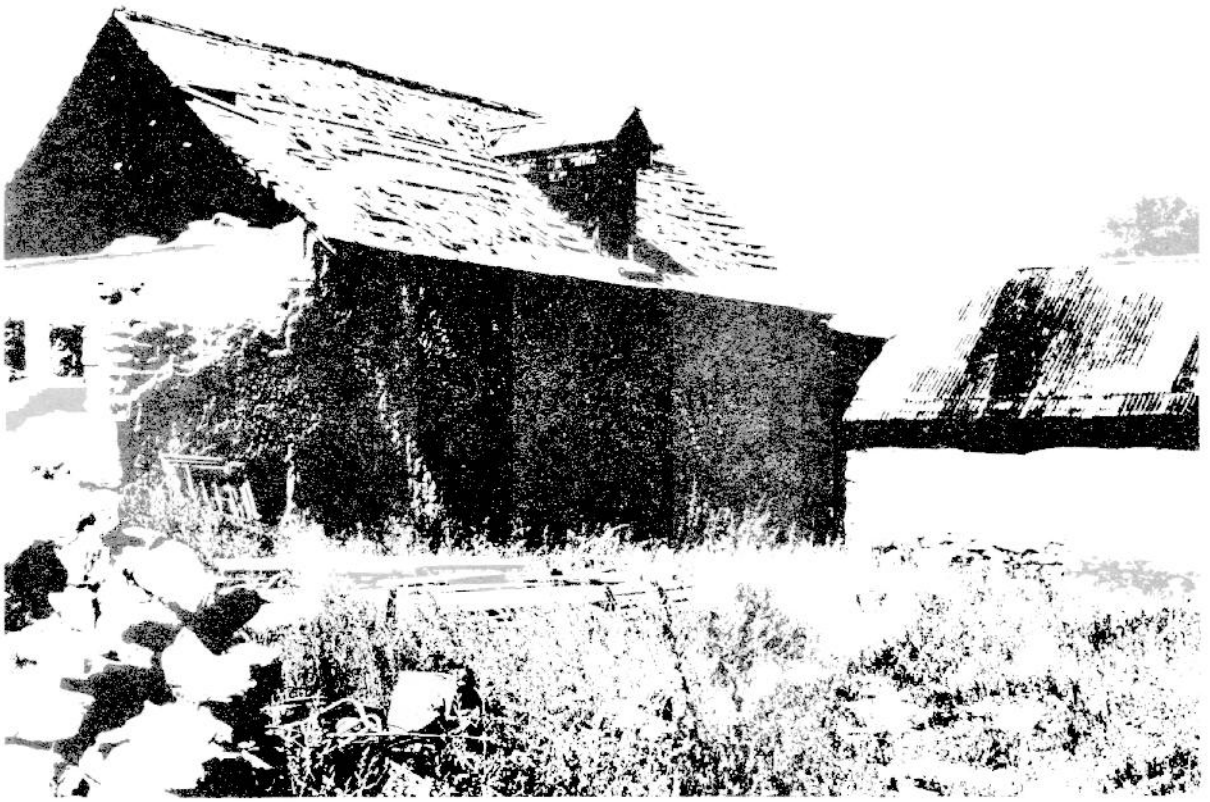
New Mexico Archeological Council



President's Message

On April 25, the first Annual Meeting of 1980 of the New Mexico Archeological Council was held in Santa Fe in conjunction with the New Mexico Archaeological Society. Unlike past meetings of the Council, this one focused on the presentation of research papers. Included in the meeting was an excellent workshop on archeological and architectural survey procedures, organized by Tom Merlan. This was the second in our continuing Workshop Series.

In all, the meeting was a huge success. Attendance by both NMAC and Archeological Society members was good, and the papers were of uniformly high quality. A list of the papers presented is given below.

Much of the reason for the success of the meeting was due to Stew Peckham, who served as chairman and went to considerable effort to arrange a meeting place. We all owe him our thanks.

Joseph A. Tainter
President, NMAC

Workshop and Meeting

July 11, 1980
State Capitol Building Room 339
Santa Fe, New Mexico
10 AM - 4:30 PM

This workshop will focus on stabilization as a means of p heological resources. Speakers include:

Larry Baker - Salmon Ruin Museum
Tom Caperton - Museum of New Mexico
Monuments Division
Larry Nordby - National Park Service
Frances Levine - BLM

A short business meeting will also be held to bring members up-to-date or Council activities.

Items for submission to the summer edition of the Newslet must be sut mitted by *August 1, 1980* Please send your typewritten cop to:

Frances Levine, Editor
1677 Cerro Gordo Road
Santa Fe, New Mexico 87501

Catherine Aves, E
P.O. Box 4301
Albuquerque, NM 87106

Letter to the Editor

A debt of gratitude is due to Stewart Peckham for his excellent handling of the arrangements for the joint New Mexico Archeological Council and Archaeological Society of New Mexico meetings. These meetings provided some excellent papers and stimulating conversation for those in attendence.

As a non-speaker for both meetings, I noticed one facet that did not please me as a professional archeologist. This was the poor showing that the New Mexico Archeological Council members had at the ASNM meeting. The papers presented by amateurs and professionals at the ASNM meeting equalled and in some cases excelled those presented in the Council's annual meeting.

Perhaps it should be pointed out to my professional collegues that the ASNM is older than the State of New Mexico; it was one of the organizations instrumental in the founding of the School of American Research and the Museum of New Mexico; it has had a long standing reward for turning in pot hunters; it is one of the few societies in the nation that has an active certification program; it provides an annual scholarship for outstanding anthropology students within the state of New Mexico; and last but not least their annual publication is one of the few publication outlets within the Southwest for professional archeologists.

What I am trying to tell you (my learned collegues) is that there are a lot of interested amateurs within New Mexico that are willing to share data and ideas with you if you let them. A great many share the same ideals about site conservation and their protection and many pursue it with greater zeal than those of us who make our living from our chosen profession.

Let the individuals within the Council renew their commitments to our state's archeological resources and join hands with those interested public spirited individuals who have preserved and protected New Mexico's Archeologial and Historical past for almost a century.

Respectfully submitted,

Patrick A. Beckett
Vice-President NMAC

Training Course

The New Mexico Historic Preservation Bureau is contemplating sponsoring a three-day training course on how historic preservation laws and regulations relate to the planing and execution of federal projects.

The course will be conducted by personnel of Harbridge House, Inc., Boston, Mass., a firm widely respected for its work in developing training programs. The cost per participant will be $200, based on a minimum of 30 persons. The course is therefore contingent upon the registration of 30 people.

The course will explore three basic areas: 1) principals and benefits of historic preservation; 2) a thorough review of the Advisory Council regulations (36 CFR Part 800) for Section 106 of the National Historic Preservation Act, and other applicable laws; and 3) actions required by Federal, State, and local officials and others in obeying these laws and regulations. Such actions include identifying cultural resources, assessing project effects, and developing mitigation measures.

Lectures, slide shows, films, and case studies have been combined to provide a varied program. Case studies represent actual situations that have arisen under Section 106 of the National Historic Preservation Act of 1966. The course encourages discussion and participation by course members.

The course was designed for professionals who encounter preservation-related Federal law in their jobs. These persons include Federal and State agency official, local government recipients of Federal Grants, staff members of State Historic Preservation Offices, representatives of historical societies, an consultants whose work in architecture, engineering, environmental issues, or cultural resource management brings them into contact with Federal preservation law.

Before an exact date for this training course can be set, we need the commitment of at least 30 individuals. possible dates might be the last week in August or the first week in October.

If you are interested in such a course, please contact Jim Bieg in Santa Fe at 505/827-2108.

New Mexico Archeological Council

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Newsletter Staff:

Co-editors:
Frances Levine
Catherine Aves
Maria Teresa Garcia

Layout & Design
Pat McGrew

All material will be published as submitted, albeit subject to editing for length and clarity.

List of Papers Presented

New Mexico Archeological Council
Annual Meeting — April 25, 1980

Paleo-Indian Occupation of the Cebolleta Mesa Region [John Broster, B.I.A.]
Lithic Analysis and the No-Collections Procedure [Paul Grigg]
Amaranth and the Southwestern Seasonal Round [Marc Thompson, N.M.S.U.]
Anasazi Communities in the San Juan Basin: An Environmental View [Richard W. Loose, P.N.M.]
Cultural Evolution and the Chacoan Interaction Sphere [Joseph Tainter, U.S.F.S.]
Another Cheap Shot at Normative Thought [Andrew Gomolak, Navajo Nation, C.R.M.P.]
The Cebolleta (Seyboyeta) Navajo [Charles Carroll, P.N.M. — presented by John Stein]
Archeological and Historical Survey Workshop [Thomas W. Merlan, S.H.P.O., Chairman]
Sampling and Archeology [William J. Judge, U.S.N.P.S., Chaco Center]
Archeological Survey and Recording [Mark Wimberly, H.S.R.]
Large Scale Architectural Survey [John Petronis, A.R.C.]
Architectural History of New Mexico [Ellen Threinen, N.M.H.P.P.]
Discussion: Archeological and Historical Survey Workshop [Discussants: David E. Stuart, Consulting Anthropologist; Edith Cherry, School of Architecture, U.N.M.; Thomas W. Merlan, S.H.P.O., N.M.H.P.P.]
Processes of Architectural Change: Examples from the Historic Zuni Farming Village [Barbara J. Mills & T.J. Ferguson, Z.A.P.]
The Growth of Zuni Pueblo: Change and Continuity in Architectural Form and Space [T.J. Ferguson & Barbara J. Mills, Z.A.P.]

Papers Presented at the Annual Meeting Workshop

Sampling and Archeological Survey

The paper presented at the New Mexico Archeological Council workshop was extracted and synthesized from a manuscript entitled, "Transect Sampling in Chaco Canyon — Evaluation of a Survey Technique." The entire report will be published in a collection of papers, entitled *Archeological Surveys of Chaco Canyon*, now in press, as the first in a series of NPS reports on the results of the Chaco Project.

In this paper Judge compared the results of two archeological surveys carried out in Chaco Canyon; one, a transect survey designed by Judge in 1971, and the other, an inventory survey performed by Al Hayes in 1972. The two surveys offered an unusual opportunity to compare the empirical results of different survey orientations, as well as a chance to evaluate the effectiveness of a specific sampling technique in estimating the parameters of a population of archeological sites.

A large discrepancy between the estimated values derived from the transect sample and the true population figures was revealed in statistical calculations. Judge believes that these differences are due not to the results of sampling error in the transect design, but to the intensity of the two survey techniques. He believes that the more man-days spent per unit of area sampled, the greater the number of sites recorded.

W. James Judge
National Park Service

Brief History of New Mexico Architecture

The history of architecture in New Mexico spans centuries. Some of the finest forms and structures were created nearly a thousand years ago at Chaco Canyon, for example. For the purposes of this discussion, these will be left to the archeologists. Although important historically, the arrival of the Spanish in 1598 did not have an overwhelming effect on architecture. New architectural forms, such as the church and associated structures, were introduced as was a technological improvement, the fired adobe brick. Because very few unaltered Spanish Colonial structures remain, this period also will be left to the archeologists.

This study of historic structures in New Mexico begins with the opening of the Santa Fe Trail in 1821. This important event increased available technology in New Mexico and affected traditional architectural forms. Consumer goods became more readily available and less expensive; for example, more glass was accessible for use in windows. Structures, however, did not change a great deal. A modular quality, due to the limit of a viga length, remained. The town of Las Vegas was founded in 1835 and portions of South Pacific Street reflect this modular quality.

What began as a trickle of goods on the Santa Fe Trail became a flood after the American occupation of 1846. Not only did the amount of goods increase, but suddenly, the technology and industry of the United States were available to New Mexico. The growth of the Santa Fe-Chihuahua Trail influenced a larger portion of the Territory. Four innovations greatly affected architecture: 1) the construction of the first sawmill in Santa Fe in 1848; 2) brick making in Santa Fe; 3) the shipping of glass for use in larger windows; and 4) the arrival of easterners with their conceptions of architecture, generally in the Greek Revival Style.

Greek Revival was the pervasive style in the east and midwest from the 1820's through the Civil War. In New Mexico not only were new buildings constructed in this manner, but older buildings also were remodeled and modernized in the territorial version of this style. Milled lumber allowed greater spans and pitched roofs; brick allowed for brick coping and glass for larger windows.

Santa Fe retains an almost unique Territorial Style with its use of brick coping along parapets. Pedimented moldings are a nearly universal feature of this style. The Tully House in Santa Fe also shows the desire to have buildings look even more up-to-date.

Las Vegas' South Pacific Street again illustrates a more common form of the Territorial Style. The gable roof, covered with corrugated metal, was often placed on top of a flat roof of vigas and latias. Larger windows with milled lumber moldings are another frequent feature. Examples of this form of the Territorial Style are found up and down the Rio Grande Valley.

The house form developed in the Ter-

ritorial Period is characterized by a small, rectangular plan, a corrugated metal-covered gable roof, and double hung, wooden windows surrounded by milled lumber moldings. This house type is found throughout New Mexico and was built from 1865 until World War II.

After the Civil War and the burgeoning of a multitude of romantic, picturesque styles in the east, a folk Territorial Style combined basic Territorial adobe with picturesque details such as bay windows, brackets, more steeply pitched details and portals supported by turned columns. As an example, a Picturesque cottage is found in Las Vegas.

The term and elaborateness of this folk Territorial Style depended on an an area's economic base, its proximity to a railroad, and the date of the railroad's arrival. In Albuquerque and Las Vegas, both AT&SF towns, this type was outmoded in 1879 and 1880. The southeastern part of the state was not served by a railroad until close to 1900 and folk Territorial was predominant until then. Remote areas of northern New Mexico never had rail service and here this construction type persisted until World War II

In some localities one detail would predominate; for example, in the Taos vicinity the twisted column became popular. This is an early 20th century detail which probably originated with the men who worked on Mabel Dodge Luhan's House, built in 1918. Mabel had lived in Italy before coming to Taos and it was presumaby there that she became familiar with this detail.

One of the most important characteristics of New Mexico's adobe architecture, its modular quality, was described by Bainbridge Bunting in *Early Architecture of New Mexico*. One finds it from the Pueblos through the later folk territorial. It is this style of adobe architecture we think of as being typically New Mexico.

This tradition was disrupted by a major event in New Mexico's history, the coming of the railroad. The effect of railroads on architecture was profound. One need only look at Old and New Town Las Vegas, Old Town and Downtown Albuquerque, or Mesilla and Las Cruces to see this change. An eastern and midwestern romantic, Victorian Tradition of some twenty years suddenly appeared here. The Mansard, Victorian, Italianate, Richardsonian, and Queen Anne Styles appeared simultaneously.

Although the Southern Pacific and other lines had a similar, if less dramatic effect, architecture along the Achison, Topeka and Santa Fe Railroad has been most studied. From the coming of the railroad in 1879 through 1881, changes were immediately evident both in existing and new towns. Streets were set in grid plans; houses were built of wood frames and brick or stone with pressed metal detailing. There are many examples, such as Las Vegas' Plaza, Bridge Street, and Library Park or Albuquerque's Huning Highlands, Downtown, and Downtown Neighborhood. With few exceptions, they were created by contractors using pattern books, rather than by architects.

The romantic tradition in American architecture was orignally a reaction to the classicism of the Greek Revival. Alexander Jackson Davis and Andrew Jackson Downing were among the early promoters of such a shift. After the Civil War, and the start of the Victorian Era, these concepts entered the mainstream of American architecture. These styles are fascinating because they so clearly represent their time. What Louis Mumford calls the "Brown Decades" was a period of tremendous industrial growth and accumulation of individual wealth. The commercial buildings and private homes of the period were meant to be show places of the new found wealth.

Commercial buildings took their stylistic detailing from historic European structures, the Renaissance urban villas being the most popular source. The end result of the combination of commercial drive, mass production, and historicist detailing is distant from its source, but fascinating. A building constructed of rubble masonry, a cheap material, was put up. An elegant facade of brick or finished stone covered the front and occasionally one side. Mass produced details, window hoods, pilasters or cornices were then added. In New Mexico these architectural elements were brought by rail. There are numerous examples of this building type in Las Vegas.

Another example of this period and its contradictions is the Queen Anne style. This style was initially conceived in England by Richard Norman Shaw as a revival of the English Manor House. It was first seen in the U.S. at the 1876 Centennial Exposition at Philadelphia. Architects such as McKim, Meade and White, H.H. Richardson, and even Frank Lloyd Wright, worked in this style. For them, and other major architects, it was a hand-crafted, carefully detailed reaction to the industrialism of earlier Victorian styles.

For good or bad, the same industrialism overtook the Queen Anne style. Many designs were details from pattern books — an oriel window here, a Palladian motif window there, fishscale shingles above, and brick below. One major characteristic of mainstream Queen Anne is the open plan, which is non-rectangular and created interesting, picturesque shapes. In mass-produced examples, the effect is faked with the addition of dormers, bay windows, verandas, oriels, or towers to a rectangular house plan.

The Queen Anne and its off-shoots were popular through 1905. The length of tenure indicates the popularity of the style and the accuracy with which it reflected American taste. By the end of its term, however, this romantic, picturesque tradition was replaced by a new set of theories, not surprisingly, a return to classicism.

After the turn of the century, a new force affected New Mexico's architecture. This, the Period Revival, had two distinct effects. The first was the found across the country: revival of the Classic, Gothic, Tudor, and other European architectural traditions. The major event which precipitated this fairly abrupt change from the romantic, Victorian styles to the period revivials was the 1893 World's Columbian Exposition in Chicago. The initial plans, laid by John Root of Burnham and Root, a Chicago architectural firm, called for imaginative use of romantic and picturesque forms popular at the time. The Queen Anne style is the height of this tradition and the Montezuma Hotel near Las Vegas, designed by Burnham and Root, is an excellent example. Root, however, died in 1891 and Daniel Burnham took sole responsibility for the plans. In a reversal, the fair became the first expression of the City Beautiful Movement in urban planning and the Beaux Arts in architecture. Monumental Neo-classical Revival structures lined broad tree-lined streets with vistas and reflecting pools. Washington, D.C., is a good example of the City Beautiful Movement.

New Mexico has none of the monumentalism of the Columbian Exposition, rather, a few buildings reflect small expressions of it. Churches and schools of the period frequently show Gothic detailing. Detailing on residential structures reflects the Classical, Medieval and Tudor periods. The essence of this period is eclecticism, a use of detailing from historical period in contemporary structures.

The second effect of this period revival, and that most important to New Mexico, was the revival of earlier adobe architecture. The origin of the revival has not been adequately traced, but appropriately the earliest such structures seem to have been the California and New Mexico pavillion at the Columbian Exposition in Chicago. The major popularizers were the Santa Fe Railroad and Fred Harvey Hotels with the attempt to advertise the Southwest through architecture. La Casteneda Hotel in Las Vegas was among the earliest of these and La Fonda in Santa Fe the most elaborate. The remodeling of Hodgin Hall in 1908 was one of the actions which led to the southwestern Pueblo Revival character of UNM. In Santa Fe the southwestern Revivals are ubiquitous since the 1957 historic district ordinance.

Because these styles have been popular from ca. 1910 to the present, they are found in every city and town. Generally the styles

break down as originally: The Spanish-Pueblo Revival, the Territorial Revival, and the California Mission Revival. Examples of these range from small to large, homes to hotels, and simple to complex.

Contemporaneous with the eclecticism of the Period revivals was the introduction of other diverse styles. Among these were the Art Deco and Moderne, both developed in Europe as reactions against the prevailing historicist design. In New Mexico both were used for small commercial structures. The Art Deco frequently incorporated terracotta tile panels, which were generally mass-produced. Another example combines Art Deco and Gothic detailing. The Moderne, popular in the 1930's and 1940's, is common as highway architecture of the period. This streamlined look was appropriate for strips such as Route 66.

Another of these early 20th century styles was the Prairie School, developed in the Midwest by Frank Lloyd Wright and his contemporaries. Although there are few examples in New Mexico, the detailing, especially in the windows, was used fairly frequently during the 1920's.

One residential style popular from about 1905 through the 1930's is the Bungalow. This style was developed independently in California as an off-shoot of the Western Stick Style, and by Gustov Stickley in Syracuse, New York. The style is generally characterized by small wood frame or masonry houses with broad pitched roofs and exposed rafters, brackets, or purlins and porches supported by tapered columns. The California Bungalow, the most common type, used pattern books and mass-produced details. The more recent, craftmanship-oriented, eastern variety relied on Stickley's *Craftsman* magazine.

Essentially, this takes us to 1945, in terms of general stylistic development. The reason this year is the cutoff is the difficulty of appraising the quality and importance of more recent structures. These are left to the architectural historians of the future.

Knowledge of American architectural history is essential to the survey process. Analysis allows the surveyor to place a particular structure in a historic and artistic context and appraise its relative significance. This approach presents few problems in the east and midwest where stylistic trends have been identified and studied, and fairly pure examples appear in chronological order. In New Mexico, problems exist; among them are 1) incomplete knowledge of the state's architecture, 2) an architectural history based on the northern Rio Grande Valley, and 3) a mixture of styles. These problems make any appraisal system somewhat tentative, but exciting in formulating the architectural history of New Mexico.

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Characteristics and Issues of Large Scale Architectural Surveys

I. Introduction

Under contract to the New Mexico Historic Preservation Program, Architectural Research Consultants, Inc. (ARC) completed a critical evaluation of the proposed Historic Building Inventory Process (HBI) developed by the U.N.M. School of Architecture and Planning.[1] The evaluative procedure identified certain basic issues concerning local survey performance, comprehensiveness, and implementation of statewide survey. (Figure 1.) HBI processes and alternative field procedures were identified and were field tested in Mora County, New Mexico. Two or three surveyors collected historic building information in identical areas and results were compared for reliability and effectiveness.

As part of this evaluative process it was necessary to clearly identify the purposes of architectural survey and uses of information collected. The intent of this paper is to present this information so archeologists and others might gain an overview of the architectural survey process and the issues involved in collection and use of survey information at the statewide level.

II. Comprehensive Statewide Survey

The State Historic Preservation Officer (SHPO), assisted by a professional staff and a State Review Board (in New Mexico, the Properties Review Commission), has specific responsibilities which include direction of a Comprehensive Statewide Survey of Historic Properties; registration of historic properties through preparations and submission of properties to the National Register; cooperation in the integration of historic preservation planning with all levels of planning; and cooperation in development and maintenance of a review procedure for publicly funded and federally assisted and licensed undertakings that may affect historic properties included in or eligible for inclusion on the National Register.

The institution of the Comprehensive Statewide Survey is an important responsibility of the SHPO as it provides a sound data base for making cultural resource management decisions as required by federal and state law. It also provides an invaluable resource for present and future research into the architecture of the State.

Because the Statewide Survey process is largely funded by federal monies, an architectural survey must meet managerial requirements mandated by federal regulations. Specifically, the Comprehensive Statewide Survey had the objectives of identification, protection, and preservation within the state of all districts, sites, buildings, structures, and objects potentially significant in American history, architecture, archeology and culture at the national, state and local levels.[2]

Although it is clear that the State is required to collect and maintain records of all properties potentially eligible to the National Register, with the end result the nomination of properties to the National Register, great latitude is given to respective states in the scope of the survey, precise collection and documentation methods, and specific uses of information to make appropriate cultural resource management decisions.

Regulations state simply that the State survey shall include, but is not limited to, data on properties listed on the National Register or determined eligible by the Secretary for listing on the National Register, and data on properties that may meet National Register criteria. State survey data must be maintained in an accessible location and be kept up to date so that the information is readily available to federal, state and local planners during decision making. Regulations further state survey data must be evaluated continually as determined by the State Historic Preservation Officer to identify properties for nomination to the National Register and to make predictions about distribution of historic properties or property types that may meet the criteria for listing on the National Register.

III. Large Scale Architectural Survey: Characteristics and Issues

A reasonable operational goal of any survey is to provide the highest quality of information to make cultural resource management decisions and the broadest research data base at an acceptable level of reliability for the lowest cost. Even in the absence of specific implementation requirements, it is possible to identify general characteristics any survey at a state level must accomplish to meet survey purposes and operational goals. These characteristics and issues associated with each step will be discussed in turn. (Figure 2).

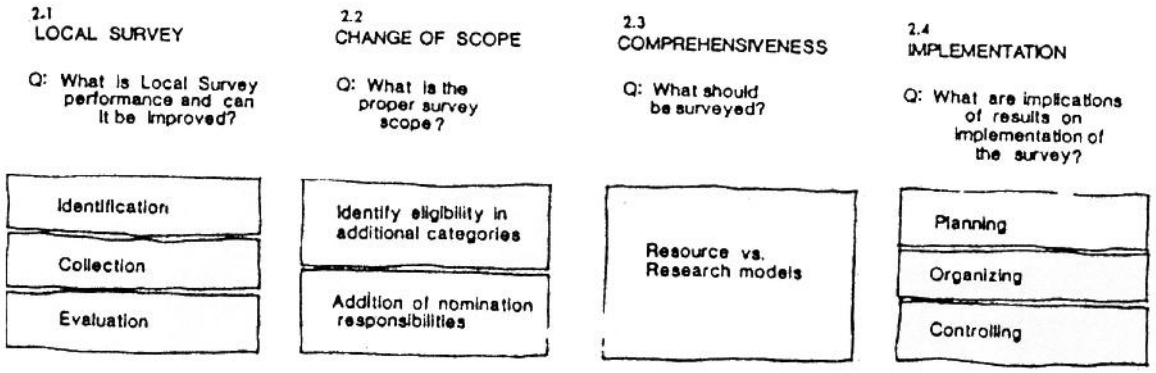

Figure 1: Evaluation Categoies of the Proposed Historic Building Inventory Process.

A. ORGANIZATION

Before initiation of a statewide survey the SHPO must make basic decisions concerning survey comprehensiveness, scope and implementation procedures. Since all subsequent survey work is based upon these decisions, they are ultimately the most important policy decisions that must be addressed.

1. COMPREHENSIVENESS: The SHPO must decide what buildings should be surveyed. That is, of all the buildings in the State, which are likely to yield information important to history or pre-history? The answer to this question involves determination of the nature of significance of a property or structure. While criteria exist for determining eligibility to the National Register, these standards are very broad and are not particularly useful for field evaluation of buildings.

There are at least two possible approaches for determining significance. The *resource approach* would collect information on all buildings in a particular time period. Significance would be ascertained by comparing the qualities of a specific building to the universe of which it is a part. Significance of any particular building, for instance, rises and falls in reference to knowledge and condition of other buildings in the universe. Turn-of-the-century panel brick railroad period commercial buildings in New Mexico, for example, have gained in significance, as destruction has limited their number to a few remaining examples. While post-1945 tract homes have little significance at present because of their relative youth and the quantity of extant examples, it is probable that in 50-100 years they will gain in significance as examples become scarce.

The *research approach*, on the other hand, sets explicit criteria in advance and only collects data on buildings which satisfy the criteria. Significance is therefore related to the research questions asked. Values in the research model rise and fall as research questions are answered and new ones asked. An Historic Building Inventory based upon a research model would seek to identify only those structures which meet specific criteria posed in advance. It is possible in this model to survey and inventory only significant buildings such as Victorian Railroad stations built between 1880-1920.

The approach chosen has great implications on data collection techniques, surveyor training and qualifications, and overall survey cost. The research approach collects data on potentially a fewer number of buildings; surveyors must be highly trained and well paid to assure reliable field identification of significant buildings. The resource approach collects information on all buildings; surveyors need not be as highly trained and survey costs are potentially lower. Each approach has costs and benefits that must be carefully assessed against overall survey goals and reliability of field procedures.

At present the New Mexico Historic Building Inventory is based upon a resource model of significance and survey teams collect data on every building in New Mexico built between 1540-1945.

2. SCOPE OF SURVEY: The SHPO must decide on the type and amount of information collected on each building. An Historic Building Inventory can be designed to identify and nominate eligible properties in one or all of the categories of the National Register.

Properties eligible in terms of appearance, distinctive design or construction can, for the most part, be identified visually and the architectural and design features simply described. However, for other categories, (association, information, integrity) levels of directed historic research are necessary in addition to field work.

The choice of survey scope has broad

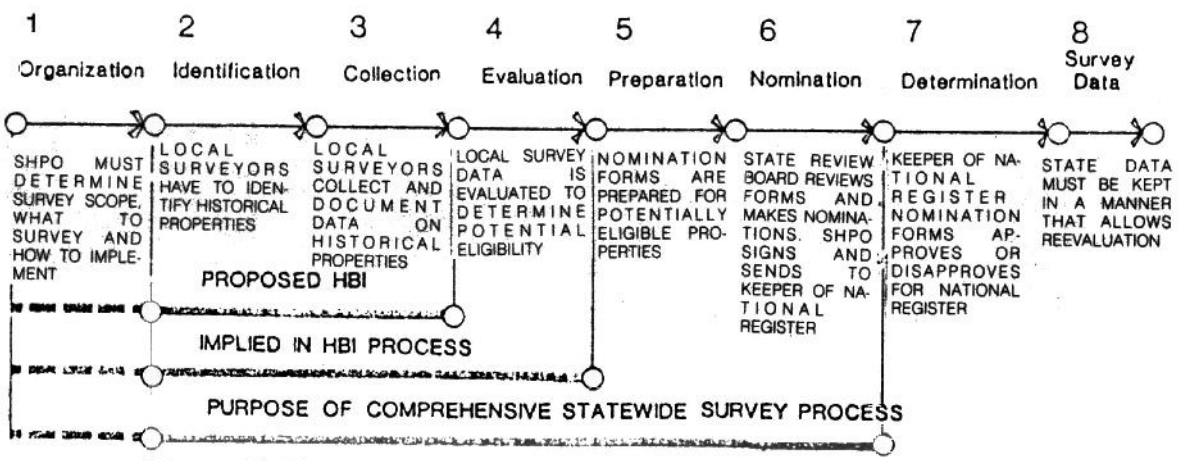

Figure 2: Characteristics of Statewide Architectural Survey.

implications on overall cost and implementation procedures. At present the New Mexico HBI process is a visual survey that identifies potential eligibility in terms of significant architectural or design features. Data compiled in the Mora survey indicates that although widening the survey scope to include eligibility in all National Register categories will approximately double current survey costs, improved reliability and a more effective data base will likely result.

3. IMPLEMENTATION OF THE STATEWIDE SURVEY: Results of the Mora Survey indicate tighter controls are necessary. At present the New Mexico HBI process is implemented on a county-by-county basis by local survey teams. While local surveyors are expected to have some experience in historic architecture, the main instruction manual in data collection procedures and methods is a manual developed by U.N.M. The SHPO must institute managerial procedures to insure reliable and cost effective collection of survey data. Identification of specific goals and objectives must be followed by determination of realistic plans for achieving goals.

Human and documentary resources must be assessed and procedures developed to organize and direct resources to carry out plans. Basic decisions concerning who will survey, where to survey, and coordination of survey activities have been addressed. Finally, the SHPO must institute procedures to control the survey process to insure that projects are completed as planned, organized and directed. Important responsibilities include the institution of training procedures to insure field surveyors and transmit information in a reliable and consistent manner.

B. IDENTIFICATION

Field survey can begin after organizational decisons have been made. The first survey procedure is field identification of buildings meeting survey criteria. At present buildings are identified by use of United States Geological Survey (USGS) maps of the pertinent area.

Evaluation of existing architectural procedures undertaken in Mora County, N.M.,indicates there exists a high probability (37 %) of failure to identify potentially eligible buildings.

Failure to identify buildings correctly results in either collection of unnecessary data, raising overall costs needlessly, or the possibility of overlooking potentially eligible buildings.

A large part of potential error is failure to locate buildings in the field. The balance involves judgmental decisions as to whether a building is old enough to survey or should be surveyed at all (i.e., outbuildings, garages). Results indicate procedures should be devloped to: 1.) better allow pre-evaluation of any given area by use of maps and aerial photographs to eliminate structures that need not be surveyed; 2.) insure surveyors systematically canvass any given survey area; and 3.) improve surveyor's judgement concerning building age and quality.

C. COLLECTION / DOCUMENTATION

Once a historic building is identified, surveyors must collect and document certain information meeting survey criteria: the property's location; its architectural feature; and/or historic and qualitative information concerning judgments about age, condition and relative significance. The New Mexico HBI at present utilizes a data collection form based on a narrative format.

Results of the Mora survey indicate there is high potential for disagreement on descriptive and judgemental decisions made by survey personnel based on original HBI assumptions. Improvement is possible by small changes in data collection format. Results of the Mora evaluation show that by simply utilizing an enlarged photograph instead of a narrative description, descriptive reliability is improved. While improved judgemental reliability still depends largely upon qualifications of the surveyor and/or training received, the revis-

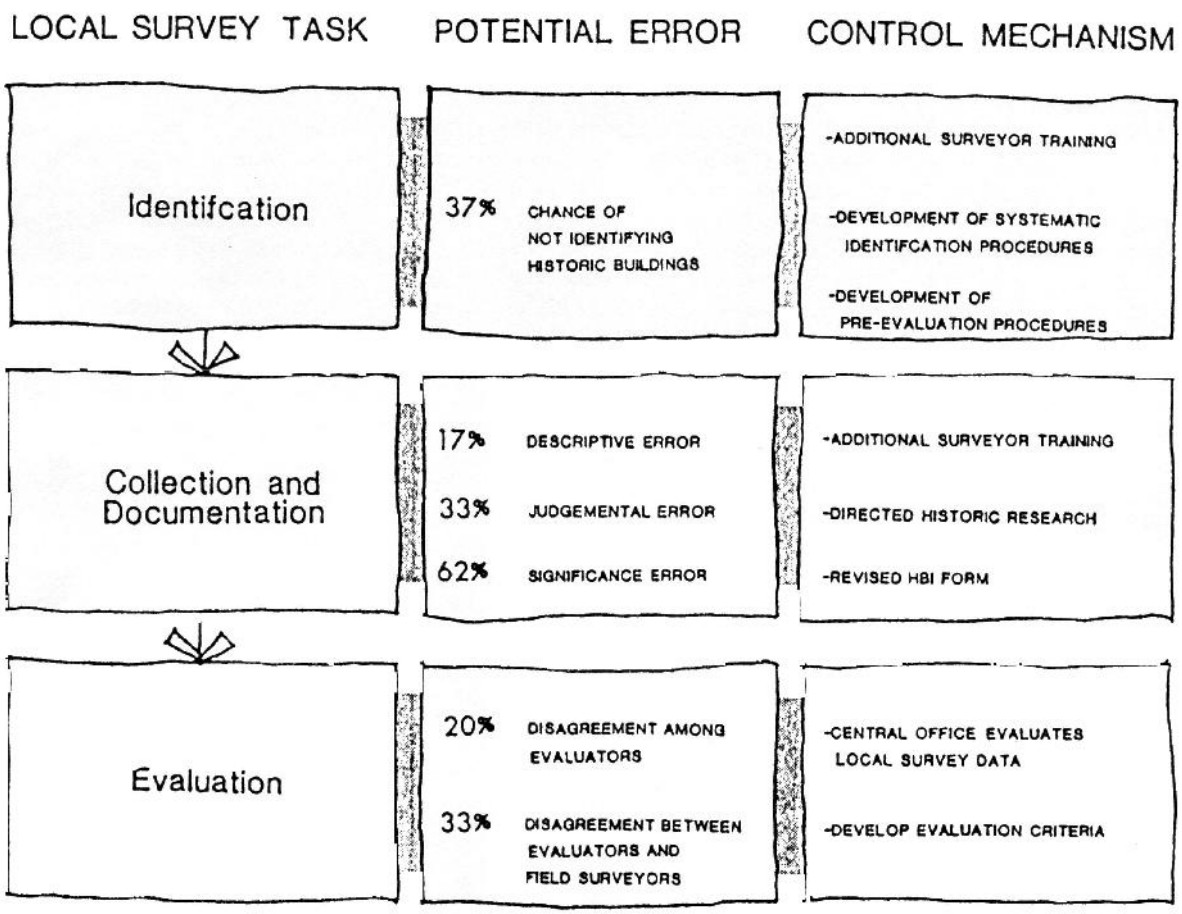

Figure 3: Potential error in the Proposed HBI Process and recommended managment control mechanism.

ed format allows a higher quality of information to be transmitted so third parties have a better chance of identifying a property's potential eligibility to the National Register. Because the revised form required less field time for completion, it also lowers overall survey costs.

D. EVALUATION

After historic properties are identified and data collected on each property, information must be evaluated to determine potential eligibility to the National Register. The SHPO must make management decisions concerning who should make evaluative decisions and how they should be applied.

Results of the Mora survey indicate that while post-evaluation of survey results improve the chance of identifying potentially eligible buildings, there still remains a relatively high probability of disagreement concerning identifying buildings potentially eligible to the National Register. (Figure 3.). Results point to the necessity of the SHPO's developing explicit evaluative criteria and applying them in a consistent manner.

E. PREPARATION OF NOMINATION FORMS

For those buildings judged potentially eligible, nomination forms must be prepared. The SHPO must decide who should prepare nomination forms and when additional information should be acquired. These decisions depend largely upon reliability of identification and collection procedures.

F. NOMINATION

The State Review Board must nominate properties to the National Register. The SHPO must sign the nominated properties forms and send these to the Keeper of the National Register.

G. DETERMINATION

The Keeper of the National Register must determine eligibility and place the approved properties on the National Register.

H. STATE SURVEY DATA

The SHPO must keep appropriate records of these activities that allow periodic re-evaluation of data.

IV. CONCLUSION

A Statewide architectural survey is a large undertaking, involving coordination of resources to collect, interpret and store massive amounts of information concerning individual properties and districts. Since the process is made up of many interrelated activities taking place over time and designed to accomplish specific purposes, even the smallest changes in scope, or failure in performance of any component or activity will have important implication in reliability and cost when implemented on a large scale. Results of the Mora Survey indicate potential error exists in identification, collection and evaluation of architectural data. A successful survey depends upon development of explicit goals and sound management decisions to mitigate potential problems and control costs.

John Petronis

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COMMENTS OF THE PROPOSED MARRIAGE OF ARCHEOLOGISTS AND ARCHITECTS

My comments assume an audience of archeologists, to whom I would like to introduce some very eligible architects. The sub-culture, Architects, has many subgroups like any sub-culture. The three types of architects that would be compatible with archeologists in a long term relationship are those interested in (1) architectural programming, (2) architectural preservation and adaptive re-use of buildings or (3) architectural history. Architects who feel that the design of new structures is their life interest and expression would be less likely to make archeologists happy.

I would like to begin by describing what things architectural programmers, preservationists, and historians have in common with archeologists, since having things in common seems to be what leads to the overworked phrase — "A meaningful relationship". The most important thing we have in common is that *we both see artifacts as social evidence!* Be they lovely or humble, large or small, those products of human time relate us to the person who made them, and so we want to know more.

My own speciality in architecture is architectural programming. This step of the design process is the early one where the problem to be solved by the design is defined. For example, people who build buildings, whether they are today's tract home designers, today's corporate clients, or yesterday's Chaco dwellers make a conscious effort to "build something". Exactly which of all the "somethings" they need is finally executed is arrived at by some decision making process. Usually there are limited resources, or at least resources that are easier to use than others; so priorities must be set. Who sets the priorities is related to the politics of the group. Architectural programming attempts to make that decision making process explicit. The product of the architectural programming process is a set criteria, in people's minds and/or on paper, that the building design (or town or village plan) must meet. The requirements in terms of functions and images which are decided upon then guide the design of the facility.

I have often thought, perhaps naively, that archeologists, when they examine a site, are trying to find out what the architectural program for the "facility" was. Archeologists work with the artifact in order to describe the society. Architectural programmers work with the society in order to describe a program for the design of the artifact. Surely, this area is rich ground for exchange!

There are less thrilling things we have in common. These are common logistical problems in dealing with our subject matter. While archeologists wonder "What is the minimum definition of a site?", we who are working on the New Mexico Building Inventory wonder "What is the minimum definition of a building?" We both seem to find that our field study methods have reliability problems, and we can't seem to define the significance of "significance".

We have differences, too, and like any mature partnership, we will likely have a happier time if we accept our differences rather than try to change one another. The biggest difference between us is in our attitudes toward the replicability of our work. To put it bluntly, architects never do anything according to the scientific method. Our artisitc heritage dictates that each successive effort be a departure in some way from the one before. Repeated testing of an hypothesis is not in our repertoire. If we approach our marriage creatively, I believe that we could make these differing approaches gve our work a breadth of

insight matched by few other interdisciplinary efforts.

We can begin by learning each others language. For example, I noticed in the papers Judge and Wimberly provided that when archeologists say "survey" they mean a study done in some depth, which architects refer to a "survey" as a cursory glance at something. I am sure there are many other minor differences we can identify and translate.

Just before our panel formed at the Council Meeting to attempt to summarize the relationships between out two disciplines, David Stuart and I mentioned almost simultaneously to each other, that during the presentation we had both been reminded of the story of the several blind men examining an elephant. One though it was a wall as he felt the side, one thought it was a rope as he felt the tail; one though it was a tree as he felt the leg. All were correct in their individual perceptions, but only together would they be able to completely describe the object of their study.

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COMMENTS:
ARCHEOLOGICAL AND ARCHITECTURAL SURVEYS

The April 25, 1980 meeting of the New Mexico Archeological Council included a workshop on archeological and architectural survey methods, for which I served as Chairman.

Historic preservation programs around the country are coming to understand that while we are working for a physically stable America, one in which conservation of the built environment is looked on as the rule, and destruction of sites the undesireable exception, archeology and architecture are in some fundemental ways as far apart as ever. The conservation of adaptable architectural sites is gaining public favor and is now getting encouragement through tax incentives. The archeological resource base is under increasing attack as a result of growning populations and the need for energy.

Our workshop talked about a rapprochement between methods of recording architectural and archeological sites, and a better understanding of their fundemental similarities. Edie Cherry, from the UNM School of Architecture and Planning, pointed out tht architects and archeologists " both see articafts as social evidence." She also pointed out that the architects prefer to look at each new construction as a departure and an effort of the imagination, unlike archeologists, who generally look on culture as determined and predictable.

We will keep on working for a wider and more unified perception of prehistoric and historic resources. This is, as always, a basic element of a State historic preservation program. One way of approaching it, as I said in the workshop, is through more comparable methods of recording. The Historic Preservation Bureau and the Laboratory of Anthropology are partners in an archeological/architectural site computerization program. I continue to believe, though, that the two disciplines will find their best common ground as *political* allies in the attempt to establish a conservation-oriented society. The Historic Preservation Act of 1966 has a pronounced historical and architectural bias. New historic preservation legislation, now in Congress and with a chance of passage in the session, gives more thought to identification and preservation of prehistoric resources, through codi fication of Executive Order 11593, a better recognition of the theoretical basis of site significance and other initiatives.

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NOTES

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Newsletter

New Mexico Archeological Council **Vol. 3, No. 3**

MUSEUM OF N.M., MONUMENT DIVISION

PRESIDENT'S MESSAGE

9/23/80

The next meeting of the New Mexico Archeological Council will be held on November 7 in Albuquerque. Pat Beckett has assembled a fine workshop program on the topic of research quality in cultural resource management. There will be an important business meeting following the workshop. The major item of business will be nomination of officers for next year, as well as nominating new members to the Council's committees.

Joseph A. Tainter
President

NEW MEXICO ARCHEOLOGICAL COUNCIL

VOL. 3 NO. 3

NEWSLETTER STAFF:

Frances Levine
Catherine Aves

All material will be published as submitted, albeit subject to editing for length and clarity.

RECORDING ARCHEOLOGICAL SITES

As an opening statement, I have one major definitional problem in presenting this paper. Specifically: When is a site a site? Or, what is a site? This question seems to be the crux of major difficulties between and among both public land managers and archaeologists. The National Register appears to have no difficulty with such a question, it simply deals with the spatial location of significant materials and information *as places*. Whether or not such locations of significant remains are sites appears to be secondary to a question of the significance. Among the on-the-ground-people, the archaeologist in the field and the manager in the field or office, the question of sitehood has taken on the weight of a pendulum and swings to and fro, creating winds and eddies of controversy. Apparently, the single factor most directly contributing to the controversy is one of time. Not the age of the resource, but rather the time which must be spent in adequately recording the resource, analyzing its relationship to other resources and information, making management recommendations and actually managing locations given such status.

It is not my intention here to take on a problem which has apparently consumed hundreds, probably even thousands of person days over the past few years. Suffice to say that the argument, when ultimately reduced, is not a cultural one, but rather, one of economics. As we are becoming increasingly aware under today's economic conditions, time is money. Therefore, definition of site, if it is to be removed from the professional archaeologists purview as a field decision, must then become a subject for contractual agreement. Under such a definition, the arbitrary, contractual definition of site becomes the prime factor in arriving at the cost of archaeological surveys. For our purposes here today, let us assume that site has been defined, and that through an agreed upon or contracted manner, survey coverage of land area is undertaken (a subject that could also stand considerable discussion).

It can be assumed that in the course of survey coverage (walking the landscape) of any substantial portion of the Southwest (say one square mile), cultural materials will be encountered. From all indications of record, the exceptions to this in New Mexico will be extremely rare. There are 121,666 square miles in New Mexico. If there are an average of ten isolated prehistoric items per square mile, we are dealing with a population of isolated occurrences in the millions. If there are one hundred isolated items per square mile, we are faced with a number of items in the tens of millions. This does not consider the populations of items which are concentrated at locations which we will choose to call sites. Considering this population, we are undoubtedly into the billions of prehistoric items within the boundaries of this state. Obviously, all argument, questioning, discussion or controversy aside, the problem of examination of the prehistoric record is a statistical one (realize that even if there are only one billion prehistoric cultural items in the state, it would take more than six thousand person years to look at each one for one minute). In the past one hundred years, the approximate period in which some semblance of formal record has been kept of archaeological explorations in this state, less than one percent of the total land area has been systematically covered and something on the order of 30,000 sites have been recorded (we are all more or less aware of the nature and condition of that record). To say that archaeologists, in compiling even the most brief, concise and emperical of records of the cultural resources, are faced with a monumental task is a most blatent understatement.

Let us further examine the above statement: . . . *the problem of examination of the prehistoric cultural record is statiscial.* I do not mean to imply that we must disregard the unique, the beautiful or the rare, whether it be object or place. Rather, I simply point to the fact that as archaeologists we are concerned with the behavior of past human populations. Since it is populations we deal with, we must predict that there is regularity or patterning in the vast categories of material items and facilities which these past human populations have produced and left behind. It is through recognition and examination of this patterning that hypotheses concerning past human behavior may be derived and tested (called by Taylor the conjunctive method), and it is through deduced questions concerning the variability in this patterning that explanations may be tested (western society calls this science).

It is an untested assumption of archaeology that patterning in the technologically produced items and facilities, called *material culture*, is evidence of similarities in behavior of populations. Ethnicity of the human populations responsible for these patterns should neither be implied nor denied solely on the basis of this technological information. However, production and use of cultural items and the by-products and facilities of these activities are considered to be a basic aspect of human culture as a dynamic and evolving system. As such, observations of the broad patterns of variability in material culture, or archaeological remains, monitor the evolution of human culture, an adaptive response of the human species, and therefore reflect behavior (remember, the thing we are trying to predict as scientists).

The above summarizes the scientific concern which must be entertained in recording archaeological sites. Historical (in the conceptual sense) aspects of archaeological site locations, including sociological developments, geographical organization, artistic expression, and economic interaction must be considered. Physical evidence of the species must also be included. Finally, or I should say last but not least, the present day and future cultural resource value must be evaluated so that conservative and/or preservative management policy can be formulated by land managing agencies and determination of value can be made by state and federal mechanisms.

Either fortunately or unfortunately, the above considerations are usually the furthest thing from the archaeologist's mind when he or she arrives on a site location. For this reason, guidelines have been formulated. In the last few years, agencies and organizations within the state have made a commendable and substantial effort to standardize the basic requirements for reporting cultural and related resources found on the public lands. These standardized guidelines have resulted primarily from the study (both formal and cumulative) of the literal flood of variously, but almost inevitably inadequate, cultural resource management reports submitted to public agencies. Perhaps out of self defense, but certainly out of a concern for the resource, these agencies have issued a basic annotated list of the informational categories which must be recorded or measured at each site location, and included in summary form in every report. However, although helpful, especially in terms of preparation of summary reports of archaeological work, archaeologists in the field are faced with an entirely different magnitude of information. To reduce the infinity of information available at a well preserved 300-room pueblo to a few pages of data in boxes on field forms, or to try to stretch 22 flakes from a nondiagnostic lithic scatter over the same boxes on the same few pages, can be a prodigous problem. Some sites are well preserved, some almost completely buried, some are beautifully exposed, some are vandalized, and some are completely redeposited. Some sites consist of a very limited kind of cultural record such as a single large panel of rock art. However, the majority of sites consist of spatial distributions of material cultural items (artifacts) and in some cases some limited evidence of structural features. So, what does an archaeologist do to convert the observed prehistoric manifestations to recorded data in a consistent, systematic and replicable (reproducible) manner? The answer: archaeologists, like all scientists, ask questions. The rigor demanded of the answers to these questions classified them into three general categories. (As you are aware, the presence of a trinity in explication is somehow a measure of validity to western scientists. I define these categories only for the purpose of putting us all into the same arena for further discussion.) So, for the purpose of general orientation, these categories are:

- Universal: That information which can be gathered from all archaeological sites, or relates to high level behavioral explanations.
- General: That information which can be gathered from broad groupings of sites and that contributes to regional or area centered explanation.
- Specific: Observational information which may relate to individual characteristics of sites or personal research problems.

This organization of information should in no way be considered to be in conflict with the kinds of data required by the various institutional or agency forms. In fact, a large portion of the information gathered for these general categories is covered in some manner by the existing forms. However, it is in the use of this information that a great many of the recent cultural resource management reports

fall short. Shortcomings in problem orientation, in fact, outright lack of a general research design in many cases, has nullified the value of the most careful data collection by the best fieldworkers.

In fact, the most alarming trend in today's field archaeology is the increasing number of individuals and institutions who are using the supposed limitations of so-called management level evaluations as an excuse to avoid general questioning, explication and explanation. In the past five years, more than seventy percent (70%) of the sites recorded within this state lacked adequate consideration of past research and generally prevailing explanations, and lacked research orientation. This has resulted in the submission of inadequate information for management level decisions of significance. Therefore, the vast sums of monies being expended for cultural resource conservation and preservation are in danger of total misdirection. This is not the fault of public resource managers but, rather, a shortcoming of the archaeological profession.

Principal investigators and research directors must know the background information for the areas in which they are working. This information must be considered in light of major, ongoing research questions. Both high level questions of the profession and specifically oriented research problems must be continually evaluated in light of the ever-growing body of field information. The doubling time in number of sites recorded within the state is under ten years and shrinking. In the last ten years, we have recorded as many sites as were previously recorded in the history of New Mexico archaeology. Where is the interpretation of this information? Where are our new explanatory models? Where are the tests of previous models?

As a final consideration in this paper, I will briefly consider the question of field method. As was mentioned earlier and covered in Judge's paper to some degree, actual land coverage method is a subject in itself. Some institutions, in fact, do not distinguish land coverage from site recording. However, a majority of institutions and individuals distinguish site locations in a field context and conduct at least part of the site recording procedure at designated site locations. Both my personal and institutional bias is toward this latter method. Therefore, the following discussion is predicated on the need to standardize the first-time field recording of newly discovered sites.

First, it should be noted that although there are some *renaissance* people who can carry out a full recording procedure singlehandedly, exploration, formal survey and site recording is, today, primarily a team effort. Archaeological survey teams can be organized under many different criteria. These criteria may include economic considerations, logistical methods, research orientation, management problems, or other expected special requirements. Whatever their composition in terms of special skills or abilities, these teams must also function as a unit which yields a final product, the completed site inventory form. In terms of all present management requirements, the information imparted by this final product must answer our earlier discussed criteria. The team must collect and impart the information *universally* demanded for each site location, information *generally* applicable to existing models of explication, and information *specifically* oriented to reveal the nature of both the observed and the observer.

All problems of the determination of site as a formal definition aside, the recording process itself must be organized into a systematic and logical procedure. The forms used during this process must reflect the organization of the survey team. Survey forms and procedures should allow scheduling of activities at a site location which yield successive levels of information gathered by the diverse capabilities and interests of the survey team (a complex way to say you cannot sample until you know how big the universe is, and you cannot summarize until all the counts are totaled). Now we come to the hard part. A site — what do you do? Every institution, every individual, and to some degree every project, is different. Most importantly, every site is different. Amazing to the uninitiated, but true. Even in the cases of institutional standardization, this must be true. If it is not, chances are that important information is being lost. In addition, techniques improve through time. However, here I will discuss only the basics, pointing out that my personal bias is present.

I. DETERMINATION OF SITE:

It is my opinion and denifition of a site, per se, is and should remain strongly dependent on field observation. Upon first examination, the problems of multiple components (in terms of activities or time) at a site are secondary to identification of the scene of past human actions. The archaeologist's first observations on such a location should result in the gathering of information in mutually exclusive, descriptive data categories answering the following basic questions: Where is it? How big is it? How deep (high) is it? How many ____ does it have?

Determination of site size is prerequisite to all future recording procedures. In some cases, the area over which cultural materials and features are distributed is easily marked. In other cases, the problem of establishing site boundaries is prodigious. HSR, like most other institutions, has tried a large number of techniques for deriving a nonarbitrary definition of site boundary. Depending upon the area (both in terms of size and noncultural physical characteristics), it is often appropriate to designate the extremeties of the distribution of cultural materials as the site boundary. However, in certain situations, this method leads to greatly exaggerated site areas which can affect all future uses of the site description information. We have therefore derived a technique for measuring the gross distribution of materials and using a standardized version of this data to designate site boundaries. I say *derived* since this method is a result of refinements by several individuals and institutions. This method requires the measurement of the surface density of cultural litter (Cultural Litter Density, CLD). Cultural litter is defined as all material remains of objects manufactured or modified by humans (this would include, but not be limited to, ceramics, chipped stone, ground stone, fire-cracked rock, bone, shell, metal, glass, plastic, etc.). HSR samples maximum CLD across presumed site area. Several different techniques have been used, depending upon (1) time available, (2) size of area to be considered, and (3) amount of material to be examined. The systematic application of CLD sampling can be used to define site boundaries in cases where sites are so large and physical characteristics so confusing that other means are inadequate. To apply this strategy, HSR covers the approximate site area in a simple N-S, E-W grid, usually employing a compass and chain, although we also use compass and pace units or, in cases requiring more accuracy, transit and chain. At each grid crossing a one meter sample is inventoried on a standard form. Samples are usually conducted as circles one meter in area. Density of cultural items within each sample is totaled and a mean density for the entire site area is thus obtained. The standard deviation of each sample location is then calculated, and from this a map of the density of cultural materials over the site area is constructed by plotting the standard deviation scores in appropriate groupings as isograms. Site boundary can then be specified as a line defining an appropriate minimum standard deviation score (most commonly two standards below the mean).

II. DEFINING SITE FEATURES OR PROVENIENCES:

Once the site boundaries have been defined and mapped, a sample universe has been defined. Various subdivisions of this universe (the site) may then be defined. The most obvious of these potential subdivisions are any evidences of prehistoric structure apparent on the surface. Structural evidence such as roomblocks, depressions, wall alignments, or hearths should be measured, mapped and briefly described in terms of method of construction, remains of structural elements, and condition. In addition to structural remains, certain other features of the site may most appropriately be dealt with as independent units within the site. These features may be cultural in nature, such as especially dense distributions of particular kinds of materials (i.e., primary detritus from lithic core reduction or thick layers of ash and burned bone). Designation of separate proveniences may also be appropriate for natural phenomena within the site such as *blow* areas, areas of sheet erosion or arroyo cuts which might not normally be observable during surface survey. Designated proveniences or structural units of the site should be placed on the site map and described. Decisions concerning cultural material descriptions within the site area are appropriate only after reasonable understanding of the internal distributions of those materials has been achieved.

III. INVENTORY OF CULTURAL MATERIALS

The cultural items distributed across site areas are key to further archaeological study or use of the site information in any interpretive or explanatory scheme. Great care must be exercised to insure that inventory of this material is conducted in a manner which assures recognition of distributional context. Archaeological materials are sometimes so densely represented or, because of site size, so great in number that total inventory is impossible in an economic sense. A systematic method for sampling these materials is therefore appropriate.

Sampling the distribution of material items across the surface of sites is of course a subject for entire treatises and cannot be taken on in detail in this short paper. A few general observations, though, are appropriate. First, do not expect to specify in advance a particular method or percentage of sample which can be applied to all sites. Each site is its own universe, its particular

characteristics must be independently considered and a sampling system custom *Taylored* to meet its individual attributes (a ten percent sample of one site may yield 100 items, while another may yield 10,000). In some cases a total inventory of one or two hundred items in a particular provenience may be much easier than defining a sampling strategy. The separate totals of particular materials obtained through a CLD sample can give an approximation of the total to be expected on a site and thus give a planning level impression of the size of area which will need to be inventoried to obtain appropriate sample sizes. It should also be observed that in the case of very large, dense and complex sites, the CLD sample itself may be a very reasonable source for material samples for more detailed analyses. A survey method may specify that the systematically conducted CLD sample be analyzed in detail, thus producing *typologized* CLD totals and, in this manner, compiling a single generalized statement of on-site materials and a distribution map of each type in the same analysis step.

Sampling of cultural materials exposed on the surface of sites should always be goal oriented. A clear goal of sampling is site description (numbers of kinds of materials and items, temporal studies, interpretation of past human action). In addition, sampling can also meet the goals of specific portions of the research design in a cost effective manner. For example, if an explicit research design has specified a hypothesis requiring information on the percentage relationship between number of material types and frequency of utilized items, a sample of total lithic materials distributed on the site can accurately produce this information in a cost effective manner whether there are 100 or 10,000 lithic items on a site.

Sampling, then, is a tool, not an end point in archaeological site recording. As a tool, it is suitable for many purposes, and also can be modified to suit new purposes. Its purpose is to gain reliable, metric information concerning the behavior of humans. Don't forget.

IV. DESCRIPTIVE SUMMARY

As a final step in the field procedure, a short, concise description should be composed. This description should be, in effect, an abstract of the metric and mapped data available on the site record. Physical characteristics of the site and setting should be briefly presented. Evidence summarized from the site recorded should be used to produce a best approximation of site interpretation. Avoiding speculation and, in a conservative frame, any evidence for time of occupation and past human activities, should be presented.

SUMMARY

Archaeologists are today, playing a dual role. On the one hand, as anthropologists, we are scientists concerned with the behavior of human populations; on the other, we are technicians conducting an inventory of locations of past human activity. As technicians we must compile accurate, descriptive records of each location and, as scientists, we must derive questions, seek the data to answer these questions, and through generalization of our studies, seek to predict human behavior. In this paper I have tried to limit the discussion to the technical aspects of actual site recording. However, we must not lose sight of the goal of scientific understanding in the midst of efforts to compile the ultimate site record. As in any science, the key concept beyond repeatability-replicability (play it again, Sam) is flexibility. Supervisory archaeologists and technicians alike must be prepared to meet the challenge of variability. To gain a record of the constants in the archaeological record is a simple matter of standardization and the guidelines now specified will accomplish this given practice and consistency in recording procedures. However, differences in the material evidence of human behavior are the raw material for explanation. Don't hesitate to devise new methods to measure these differences.

Mark Wimberly

Mark Wimberly
Human Systems Research

Papers Presented at Stabilization Workshop

(July 11, 1980)

STABILIZATION AND THE PRESERVATION OF MASONRY STYLE AT THE SALMON RUINS

ABSTRACT

A program of comprehensive stabilization has contributed to the preservation and development of the Salmon Ruin as a cultural, educational, and economic resource. The strategy for stabilization has placed equal emphasis on two conflicting objectives, permanence and authenticity, thereby attempting to preserve both the structural and stylistic integrity of the masonry. Fundamental procedures and techniques are outlined as well as a discussion concerning the preservation of masonry style.

INTRODUCTION

Extensive excavation was conducted at the Salmon Ruin in Bloomfield, New Mexico, from 1972 through 1978. During that time, excavation exposed the massive walls and elaborate architecture of an 11th century Chacoan community. The prospectus for excavation and development included leaving the masonry exposed for future curation and visitor interpretation. A total of fifty-eight rooms were partially or completely excavated exposing several different types of walls as well as several different masonry styles. The condition of the architecture was widely varied, including areas in an excellent state of preservation as well as those badly deteriorated. Generally, deteriorated masonry included collapsed roofs and walls, exposed rubble core in cored walls due to the exfoliation of the veneer, misaligned walls, deteriorated building stone, and collapsed or deteriorated architectural features as well as inherent structural faults.

As anticipated, exposure of the architecture following excavation has accelerated weathering of the masonry and caused renewed deterioration in structurally weakened areas. Preliminary stabilization was initiated during the 1973 field season with the cooperative supervision of the National Park Service. An independent program of comprehensive stabilization has been underway from 1974 through 1979.

Stabilization at the Salmon Ruin has focused on preserving areas which are in an exaggerated state of deterioration, however, the priorities for stabilization were sometimes limited by the exigencies of excavation. The orientation for stabilization has placed equal emphasis on permanence in masonry repair and accurate replication of masonry style. Such an orientation has insured the effective preservation of both the structural and stylistic integrity of the architecture.

FUNDAMENTAL PROCEDURES AND TECHNIQUES IN MASONRY REPAIR

The basic procedures and techniques employed in comprehensive stabilization at the Salmon Ruin generally conform to the guidelines established by the National Park Service for maintaining prehistoric masonry structures in Region 3, National Park Service, Department of the Interior (Vivian and Richert, 1962). Some methods currently used by the National Park Service have been modifed to meet the specific needs in masonry preservation and the maintenance schedule for stabilization at the site. In maintaining and repairing the masonry, two conflicting objectives, permanence and authenticity, have been effectively resolved in order to provide durability as well as accurate replication of masonry style. Stabilization has employed basic principles in contemporary masonry construction and adapted them to the maintenance and repair of prehistoric Puebloan architecture. This has provided the best overall results structurally and insures a standard for quality control in making repairs. The following outlines the fundamental procedures and techniques which have been employed in comprehensive stabilization.

Wall Building and Reveneering

Complete rebuilding of collapsed sections of cored walls has been necessary in many areas of the site. Deteriorated veneer and unconsolidated rubble core are removed from the remaining articulated masonry. If masonry adjacent to the collapsed areas needs realignment, the misaligned veneer is removed prior to the reconstruction of the wall. During the rebuilding of cored walls, the rubble core is repacked using sound stone and cement mortar. Tinted cement mortar is used for reveneering and the tinted mortar is brought forward to the wall surface. Walls are not rebuilt any higher than the level extant during excavation.

Capping of Wall Tops

Wall capping is completed in conjunction with wall building and reveneering. Approximately 20 to 30cm of rubble core is removed and repacked in areas with intact veneer along wall tops. The core is repacked using sound stone and tinted cement mortar. The tinted cement mortar is used to provide a waterproof seal along the top of the wall preventing moisture penetration into the wall's interior as well as replicate the original adobe mortar.

During construction of wall caps, the effect of an exposed rubble core is replicated on the wall top. The caps are left uneven and crowned in the center of the wall to aid in drainage and reduce potential seepage of precipitation into the wall. In addition, the uneven, crowned wall tops reduce visitor traffic across walls.

Replacement of Mortar (Repointing)

Reveneering and repointing in mortar joints between building stones is completed using a tinted cement mortar to replace the original adobe mortar (see Mortar Mixtures and Materials). During reveneering and repointing, tinted cement mortar is brought forward to the wall facing. The cement mortar provides additional strength in mortar joints at the point where it is directly exposed to weathering and is more durable than overgrouting with soil cements or adobe.

In areas requiring only repointing, loose or deteriorating adobe is removed from joints between stones. Joints are made wet prior to replacing mortar to reduce shrinkage and cracking during drying. The repointed mortar is stippled using wisk brooms to remove trowel impressions and add texture. As a final step, soil from the floor of the room is "dusted" on the repointed areas to stain fresh mortar and add in better replicating the original adobe. The application of soil to the wet mortar surface provides only a temporary stain dependent on the degree of exposure of the masonry and should never be used as a substitute for developing replicative mortars which will more closely approximate original adobe mortars.

Masonry Reenforcement

Due to structural faults inherent in prehistoric Puebloan architecture, e.g. lack of ties through walls, lack of wall bonding, etc., certain areas require additional reenforcement during stabilization. Concrete reenforcing rods are set in above lintels in doorways, ventilator shafts, windows, and features so that no structural weight rests on the wooden members. Adding the concrete reenforcing rods in these areas provides additional safety for visitor access.

Reenforcing rods are also used as structural ties at the corners of second story and high first story walls. The reenforcing rods are integrated into the wall cap and joined around the corners to provide structural bonding and maintain wall alignment. In all instances, reenforcing rods are obscurred from view in order to maintain authenticity and masonry integrity.

Photography

All photography is conducted using a 35mm format. When possible, wall surfaces are shaded in order to eliminate shadows and provide uniform lighting. Photographs are taken prior to stabilization, following completion of repairs, and in some instances, during repairs to document procedures.

MORTAR MIXTURES AND MATERIALS

Uncertainty of future scheduling for maintenance stabilization at the Salmon Ruin has necessitated the use and continued development of suitable cement mortars for masonry repair. Tinted cement mortars have been developed in order to effectively replicate the original adobe mortar, but provide cement mortar strength in wall building and repointing. The use of tinted cement mortars has been important in repointing to provide additional strength at the wall facing and reduce erosion in mortar joints. The wall capping mortars need to be strong enough to withstand the direct exposure at the wall top and visitor traffic. In addition, both repointed and capped areas are readily observable and need to resemble the original adobe as well as be strong. Therefore, it has necessitated that replicative cement mortars need to satisfy both permanence and authenticity.

In terms of satisfying both these criteria, tinted cement mortars have been successfully developed and used employing Ideal Portland-Type I and II and Tamms Mortar Color-Desert Tan No. 3621, exclusively. Ideal Portland and Tamms mortars colors have been consistently used in developing suitable replicative mortars and have been found compatible in terms of minimizing colorant problems following curing. The ratios of Portland, mortar color and masonry sand needed to be slightly modified with each new shipment of mortar color in order to maintain color consistency with the original adobe as well as previous tinted cement mortars. Slight differences in color necessitate such modifications to maintain high standards in quality control.

The tinted cement mortar consists of Ideal Portland, Desert Tan, and washed masonry sand. The Portland and mortar color are mixed as a "dry mix" prior to adding masonry sand and water. This has provided an effective means of insuring the proper proportions of mortar color and Portland and thorough mixing for the desired color. The ratio of mortar color to Portland has not exceeded 8 lbs. per 94 lbs. of Portland so as not to adversely effect the bonding properties of the Portland (manufacturer's specifications).

Every effort has been made to insure that the overall strength of the cured mortar has not exceeded the hardness of the building stone in the masonry being repaired. Mortars which are weaker and more porous than the stones they cement retard the deterioration of the building stone by allowing moisture leached toward the wall's surface to move through the weaker mortar (Vivian and Richert, 1962). The proportions of Portland mortar color and sand have been modified accordingly to satisfy these critical factors but yet maintain strong tinted cement mortars which replicate the color and to a degree, the texture of the original adobe. This has aided in the preservation of the stone at Salmon and obviously, simple repointing is less costly in terms of maintenance than stone replacement. (Proportions of constituents used in tinted cement mortars are available by writing the author.)

As an alternative cement mortar, tests are as yet incomplete employing Calcium-Aluminate Cement. It is manufactured in a "desert tan" color and therefore, does not require the addition of mortar color. Tests include combining Calcium-Aluminate with masonry sand and/or backdirt from excavation to obtain the desired strength, color, and texture.

PRESERVATION OF MASONRY STYLE

Conflicting objectives for preserving masonry style have been discussed in the past (Vivian and Richert, 1962), however, considering stabilization as a destructive process similar to excavation has received little attention (Terrel, 1977). Unless an exact reconstruction is attempted, unique masonry attributes are modified or otherwise rearranged during comprehensive stabilization. This becomes an important factor when considering Chacoan style sites as a finite cultural resource and the present rate of destruction of archaeological sites generally due to vandalism and commercial development. At the Salmon Ruin, concern over preserving subtleties in the Chacoan and Mesa Verda styles of architecture has focused the orientation for masonry preservation on maintaining the integrity of style of any one section of masonry and replicating the prehistoric style during repairs.

Exact reconstructions or detailed duplicates are extremely time consuming and prohibitively costly. This is not to imply that considerations with regard to style should be ignored or secondary in stabilization. At the Salmon Ruin, approaches to effective style replication have been resolved by employing two methods of classifying and understanding prehistoric Puebloan architecture: Hawley's typology (Hawley, 1938) for classifying Chacoan masonry, and Morenon's system (Morenon, 1977) later modified by Terrel and Burns (Terrel and Burns, 1978) for identifying specific masonry attributes.

Hawley's typology is used to classify wall facings or sections of veneer in terms of general stylistic considerations, e.g. banded verses unbanded styles or spalled verses unspalled. Comparisons at this gross level allow for typological consistency in masonry replication in any one area, thereby maintaining inter-style differences between Chacoan masonry as well as differences between Chacoan and Mesa Verde styles of architecture. However, the typological orientation is not an adequate measure of intra-style variability. Therefore, the attribute system (Morenon, 1977; Terrel and Burns, 1978) has been employed as a means to more tightly control style replication and preserve subtleties in the original prehistoric architecture. Attributes utilized to preserve intra-style variability include: stone shape, stone length, stone width, stone color and grain size, method of manufacture, and mortar joint thickness.

During reveneering and wall rebuilding, only those areas in which the style can be accurately determined are reconstructed. Those areas of cored walls in which the veneer has collapsed prohibiting accurate replication of the style are not reconstructed, however, the remaining rubble core is stabilized and left exposed. Care is taken to maintain the integrity, size, and orientation of architectural features. In addition, wall abuttments are noted as to butted, bonded, or partially bonded, and are stabilized accordingly.

SUMMARY

Overall, comprehensive stabilization at the Salmon Ruin has endeavored to preserve a

unique *in situ* architectural artifact and simultaneously, satisfy two conflicting objectives, permanence and authenticity. Equal priority has been placed on maintaining the structural and stylistic integrity of the architecture in order to achieve these ends. This has necessitated the integration of contemporary construction procedures and an understanding of inter and intra-wall variability at the site. The use of typological and attribute methodologies has provided an effective means for maintaining quality control in replication of masonry style.

Comprehensive procedures in stabilization need to be continued at Salmon due to the amount and condition of the masonry exposed. Plans are being prepared to continue work at the site. Future stabilization will not only preserve this unique architecture phenomenon but also aid in the continued development of the Salmon Ruin as a cultural, educational, and economic resource.

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Larry L. Baker

Director of Stabilization
Salmon Ruin

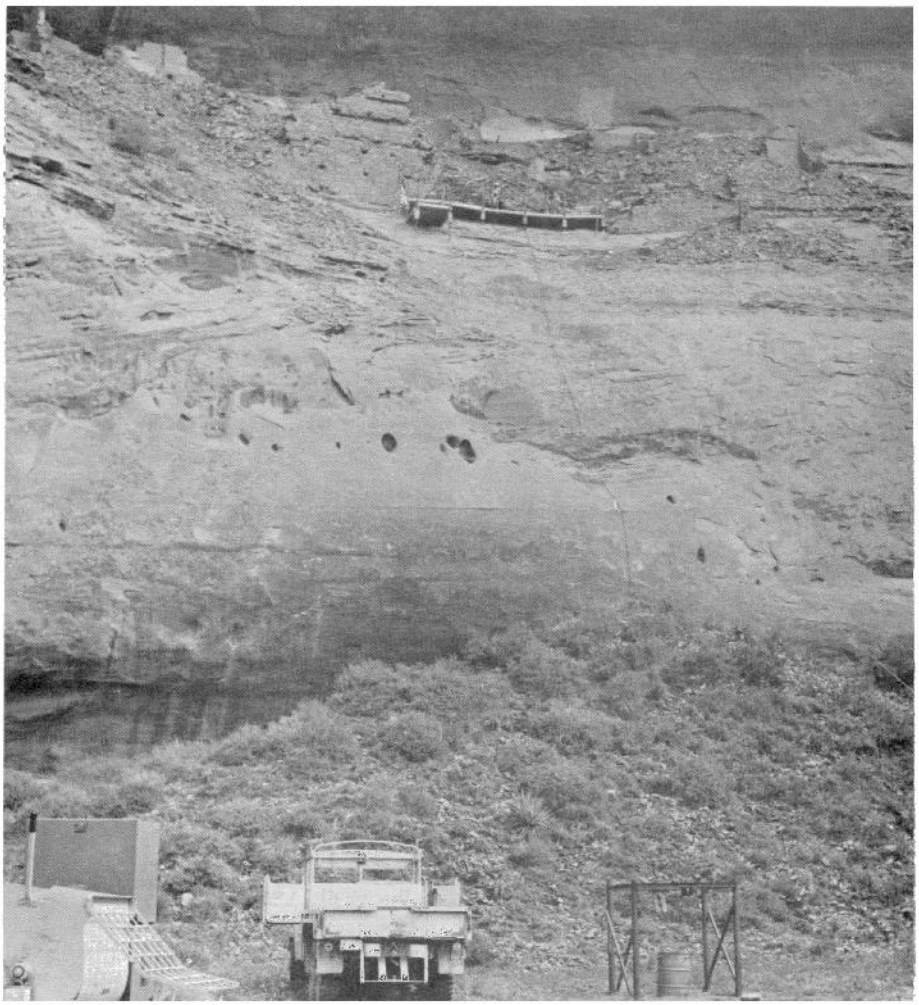
MUSEUM OF NEW MEXICO MONUMENTS DIVISION

Tom Caperton, Director of the Monuments Division, discussed the stabilization work undertaken by the Museum of New Mexico. Contact Tom, at the Museum, for details about the stabilization of the state monuments at Abo, Jemez, and Fort Selden.

ARCHEOLOGY AND PRESERVATION IN THE NATIONAL PARK SERVICE: AN EXAMPLE FROM THE SOUTHWEST

A more complete version of the part of this report dealing with Sliding Rock is currently awaiting publication and distribution under the following title:

Non-destructive Archeology at Sliding Rock Ruin: An Experiment in the Methodology of the Conservation Ethic



MUSEUM OF N.M., MONUMENT DIVISION

Figure 1. Sliding Rock Ruin, in Canyon de Chelley National Monument, Arizona, was the scene of stabilization work and the architectural analysis described herein. The stabilization scaffold is shown at the foot of the ruin, with work equipment in the foreground.

In the allotted space, I would like to accomplish two goals: These are (1) first to generally discuss a few aspects of the National Park Services' preservation programs for a few moments, and then to (2) present one way in which archeology and stabilization can merge to achieve sound cultural resource management, using a project at Sliding Rock Ruin in Arizona as a sort of case study.

The National Park Service Preservation Program

The National Park Service is mandated to achieve two management goals: to preserve and to provide for the use of those resources under this control. These two concepts often conflict vigorously during the selection of management strategies, and with respect to stabilization, there is no exception to the rule in spite of the strong semantic association of the term "stabilization" with the tenets of preservation. In N.P.S. stabilization work, the pendulum has often swung back and forth between these two objectives. Currently, we are primarily in the former mode: "to preserve," a position which is at one with many elements in the archeological profession as well as conservationists of our natural parks. For example, regarding ruins management, an increasingly invoked strategy to protect ruins is closure to the visitor, often by backfilling.

The N.P.S. stabilization (or preservation) program consists of several steps or stages, which I will now briefly outline in ideal terms. Often, the N.P.S. acquires properties or ruins under less than ideal conditions, and in these situations, the steps are often not performed in what might be construed as ideal order.

As with any bureaucratic endeavor, the program begins with planning. Planning documents most pertinent to stabilization include those listed below. The need for such documents and projects as are later enacted is identified by the Resource Management Plan.

1. *Historic Structures Report:* This document consists of a condition report which also details the history of construction (and excavation, when pertinent). It is both descriptive and analytical and often has extensive photogrammetric illustrations and graphic architectural details. Organization involves four principal sections: archeology, history, historical architecture, and preservation concerns. The last of these provides a structural analysis of the ruin in light of environmental and visitation characteristics most germane to the structure's welfare. With this in mind, it is *not* synonymous with the archeological site report. It also makes recommendations for future research and stabilization activity.
2. *Structure Preservation Guide.* This is the "hands-on" or maintenance guide for a structure, which will be used to aid the park's maintenance personnel in annual maintenance stabilization work. It also anticipates any other activities, such as shovelling snow in the ruin, in an attempt to prevent those activities from inadvertenly damaging the resource, and provides an annual schedule for work implementation.

The next stage of the N.P.S. program deals with projects of two major kinds: archeology and preservation/stabilization.

1. Archeological projects are here considered as excavations which would lead to stabilization. Execution is preceded, of course, by a research design which ideally would address alternatives as to what might happen to the ruin after the project has been completed. Any research perogatives which bear upon the physical welfare of the resource should be addressed. This includes some sort of preliminary assessment of whether the disturbed portion of the site would be backfilled, stabilized, or some combination.
2. Stabilization projects either follow such research or are inherited by the N.P.S. during acquisition that brings the ruin into the N.P.S. system. These projects also require the equivalent of a research design which lacks a formal name. I will term it a "preservation design." Contributors to the design include specialists such as historical architects, perhaps historians, structural engineers, soil chemists, remote sensing specialists, and archeologists. This cadre of professionals should function in the same way as ethnobotanists, geologists, and other professionals assist the archeologist during research. Based upon professional input, the design then selects from an arsenal of stabilization strategies, those most appropriate to the management goal of that ruin. It justifies the selections and describes how they will be enacted.

Finally, following any archeological research and stabilization work, the ruin enters maintenance status and the park staff uses the Structure Preservation Guide to care for it. Anything which is of too large a scope to be handled on an annual basis is dealt with via cyclical maintenance program, with such intervals as appropriate. For example, after every five years the roofs on covered rooms at Aztec might require extensive overhaul.

The foregoing summation has attempted to sketch the skeleton of the N.P.S. program. It should be apparent that stabilization work is an action which is virtually as complicated as modern archeology has become. The archeologist plays only one part in the orchestra which includes other professionals; however, I believe that this part is crucial to the development of resource management goals, and would now like to provide an example of the expertise that archoelogists offer in a preservation context.

Archeology and Preservation: An Example from Arizona

Sliding Rock Ruin, in Canyon de Chelly National Monument, Arizona is a moderate to large (ca. 75 rooms, 5 kivas) cliff dwelling situated in an alcove with a sloping floor. The slope of this floor approaches 45 degrees from the horizontal in some places, and has contributed both to the structural demise of the ruin and its name. A series of aboriginally constructed retaining walls were designed to prevent major structural failure, but some tiime prior to the first Anglo contact, they partially collapsed from the weight of the structures behind them and the fill materials emplaced to level the living area. About half of the ruin still remains, and with the goal of preventing further wall collapse and architectural loss, it was decided to rebuild part of the collapsed wall. To do so would require the excavation of small portions of unconsolidated trash behind the wall. Besides the objective, archeological work was designed to:

1. conform with conservationist thinking as closely as possible. Traditionally, archeologists involved with prestabilization archeological salvage have occasionally been paradoxically guilty of destruction of those very resources that they are supposed to be preserving.
2. provide baseline structural information at one point in time in conformance with future preservation needs. In this regard, photogrammetry was attempted both from the ground and the air, but it was a failure for several technical reasons.
3. suggest directions for future archeological research by taking visible data and making inferential hypotheses that could be operationalized in the event that Sliding Rock is ever excavated. In this capacity, the work provides the roots of an optional but structured research design.

Stabilization work was principally to rebuild the retaining wall and refill behind it. Other needs included work at sporadic locations throughout the ruin, where wall abutments had separated or embrasures had formed. This was a challenge because of substantial safety problems involved in constructing work platforms and scaffold along the sloping cliff face prior to building the wall itself. All materials had to be winched up to this area, about 30 meters above the canyon floor. These and a variety of other severe logistics were solved by Steve Adams (Archeologist, Navajo Lands Group Office, Farmington, NM), who was in charge of the stabilization effort.

Returning to the archeological work, it consisted of the development of a formal architectural model from the available surficial evidence. The model was also based, in part, upon ethnographic data (Mindeleff, 1891, and others) and archeological information compiled by others at cliff ruins in other areas (Dean, 1969; Rohn, 1971). Once model components were defined, they could then be manipulated in various ways to suggest the answers to questions such as site growth and chronology. It is important to recognize that the model and its applications at Sliding Rock do not provide the answers to these questions in the absence of excavation.

The Architectural Model

The model is illustrated in Figure 2. Hierarchical architectural units were generated as noted previously, and are listed in the left column. Analytical aspects of each kind of unit are listed in the right-hand column, and pertinent extraneous data not endemic to the lower model levels are introduced in the second column. Incidentally, I am under no illusions as to the novelty of this approach; I am simply attempting to formalize an architectural approach used by archeologists for years. Doing so creates a more succinct analytical environment and therefore a more specific result.

Beginning at the bottom of Figure 2, then, leads one to look at the most basic of the units examined at Sliding Rock. The attributes of wall components were recorded in some detail on forms which stressed preconstruction preparation in various respects. Once combined, these elements form walls or wall segments: a continuously erected discrete unit which by inference was built during one activity episode. The walls themselves are evaluated in terms of masonry style. In perceiving masonry style, one becomes conscious of both the temporal changes in construction and attributes which relate to room function. Introducing roof and floor with any features generates a room.

The assessment of hypothetical room function was an interesting aspect of the analysis, since it considered attributes such as size, location, shape, and ethnographic and architectural data in assigning tentative functions of living, storage, mealing, or ceremonial rooms, or granaries. There is insufficient space here to present the reasoning behind each room class, however, an example would be:

If a room is a living room, then one would expect to find the following constellation of attributes:

1. Walls having:
   a. less than five coats of interior plaster;
   b. occasional *jacal* construction;
   c. a tendency toward poorer quality masonry composed of lower proportions of adobe;
   d. frequent sooting;
   e. features including wall niches, shelves along bedrock outcrops, and wall peg rack supports.
2. Doorways involving:
   a. locations through walls, with roof hatches in ca. 25% of Tsegi Phase rooms;
   b. preference for locations in *jacal* walls if such walls are present;
   c. higher sill-to-lintel doorway height than storage rooms;
   d. sills at or below exterior ground surface;
   e. evidence of interior closure preferred, although exterior closure may occur;
   f. horse-collar adobe mouldings around doors.
3. Floors with:
   a. central slab-lined hearths without moulded clay rims;
   b. mealing bins;
   c. indeterminate floor holes;
   d. careful leveling and plastering.
4. Sizes:
   a. exceeding five square feet (.5 square meters);
   b. relatively greater than storage rooms;
   c. more likely to have sufficient headroom for standing.

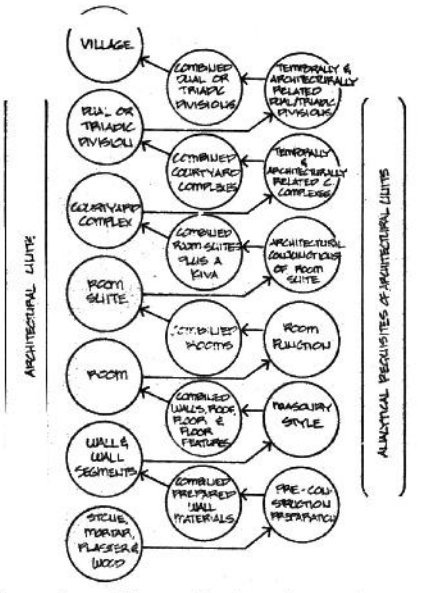


Figure 2: Hierarchical model used in the architectural analysis at Sliding Rock.

Following the examination of room function, combinations of rooms can be made in various ways. The least complex of these is the room suite, defined both by mutual accessibility of rooms and by their mutual isolation from other room suites. Besides

APPENDIX 1
BLM NEW MEXICO STABILIZATION PROJECTS
1979-PRESENT

Project	BLM Site No.	Year
Albuquerque District		
Shaft Ruin	NM-01-015	1973
Simon Canyon	NM-01-1167	1974
Christmas Tree	NM-01-2001	1974
Francis Canyon	NM-01-189	1974
Crow Canyon	NM-01-2002	1974
Largo School	NM-01-2000	1974
Hooded Fireplace	NM-01-012	1974
Tapacito	NM-01-04	1974
Split Rock	NM-01-005	1974
Casamero	NM-01-144	1976
Shephard Site	NM-01-829	1977
Reservoir Site	NM-01-821	1977
Guadalupe Ruin	NM-01-478	1977-present
Socorro District		
Promontory Site	NM-02-004	1975
Homestead	NM-01-1608	1975
Skull Site	NM-02-019	1976
Oak Tree Site	NM-02-017	1976
Dittert Site	NM-02-085	1977
Las Cruces District		
Three Rivers Recreation Area	NM-03-229 NM-03-1484	1976

APPENDIX 2
BLM NEW MEXICO DETAILED RECORDING PROJECTS
1977-PRESENT

Project	BLM Site No.	Year
Albuquerque District		
Azabache Stage Station	NM-01-3816	1977-1979
Daniel Cordova Homestead	NM-01-3312	1979-1980
Uriah Spearman Homestead	NM-01-3309- 3310	1979-1980
Chijuilla Community School House	NM-01-3311	1979-1980
Chacoan Communities		
Pierre's Ruin Community	NM-01-2990	1979-present
Kutz Canyon Ruin	NM-01-40	1979-present
Kin Nizhoni Community	NM-01-4946	ongoing
Halfway House	NM-01-3892	ongoing
Casamero Community	NM-01-144	ongoing
Guadalupe Ruin	NM-01-478	1977-present
Socorro District		
Newton Site	NM-02-167	1977-1978
Penole Site	NM-02-014	1977-1978
Narrows Site	NM-02-164	1979-present
"Teypama" Pueblo (LA 282)	NM-02-205	1979-present
Arroyo del Tajo Pictographs	NM-02-513	1979-present

Dr. Frances Levine

Archeologist
Cultural Resources Protection Team
BLM - State Office

INSTITUTION REPORTS

ESCA-Tech, Corp.

ESCA-Tech's Albuquerque Office has a new location: 930 21st Street NW, Phone: 242-6961. On November 21, we will be having an open house/office warming party (pot luck, for those who wish to stay for the latter) beginning around 2-3 pm. Please come by and see us.

There are two new members on ESCA-Tech's staff: Dr. Meade Kemrer and Catherine Aves. Dr. Kemrer came from DCA and joined us September 1 as Office Manager/ Principal Investigator. Ms. Aves, previously in the Albuquerque BLM, joined us the beginning of October as Assistant Manager of the Albuquerque Office and will be the contact for anyone needing project-related information.

Our field work will increase next spring with the start-up of some new projects. Work has just begun on the BLM's Bisti-Star Lake Class II Phase II Project. Preliminary computer and background work are already proceeding, field work to begin next spring. Another Class II survey is a predictive study for a portion of the Water and Power Resources System's Animas-La Plata Project. The objective will be to establish a confidence level for predicting the number and type of sites within areas of the total project. This survey will begin operation as soon as the spring melt allows. ESCA-Tech will also be performing a survey within the BIA's Navajo Forest in Northeast Arizona and Northwest New Mexico. Optimistically, field work will begin this fall and continue in the spring.

The report for N.I.I.P. Blocks VI and VII has been completed. Copies are on file at NPS in Santa Fe, BIA in Gallup, as well as this office; they can be obtained, for cost, from this office. Sections include: Biogeography (David Mayfield), Remote Sensing/ Environmental Stratification (Eileen Camilli), Geomorphology (Fred Nials), and Cultural History and Analysis (William Reynolds).

The inventory/site recording portion of the Ridges Basin Class III survey (also part of WAPRS's Animas-La Plata Project) was completed this fall, with more than 200 sites recorded. This project has been supported by University of Nebraska (Proton-magnetometer survey) and OCA (as subcontractor).

Catherine Aves

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Catherine Aves

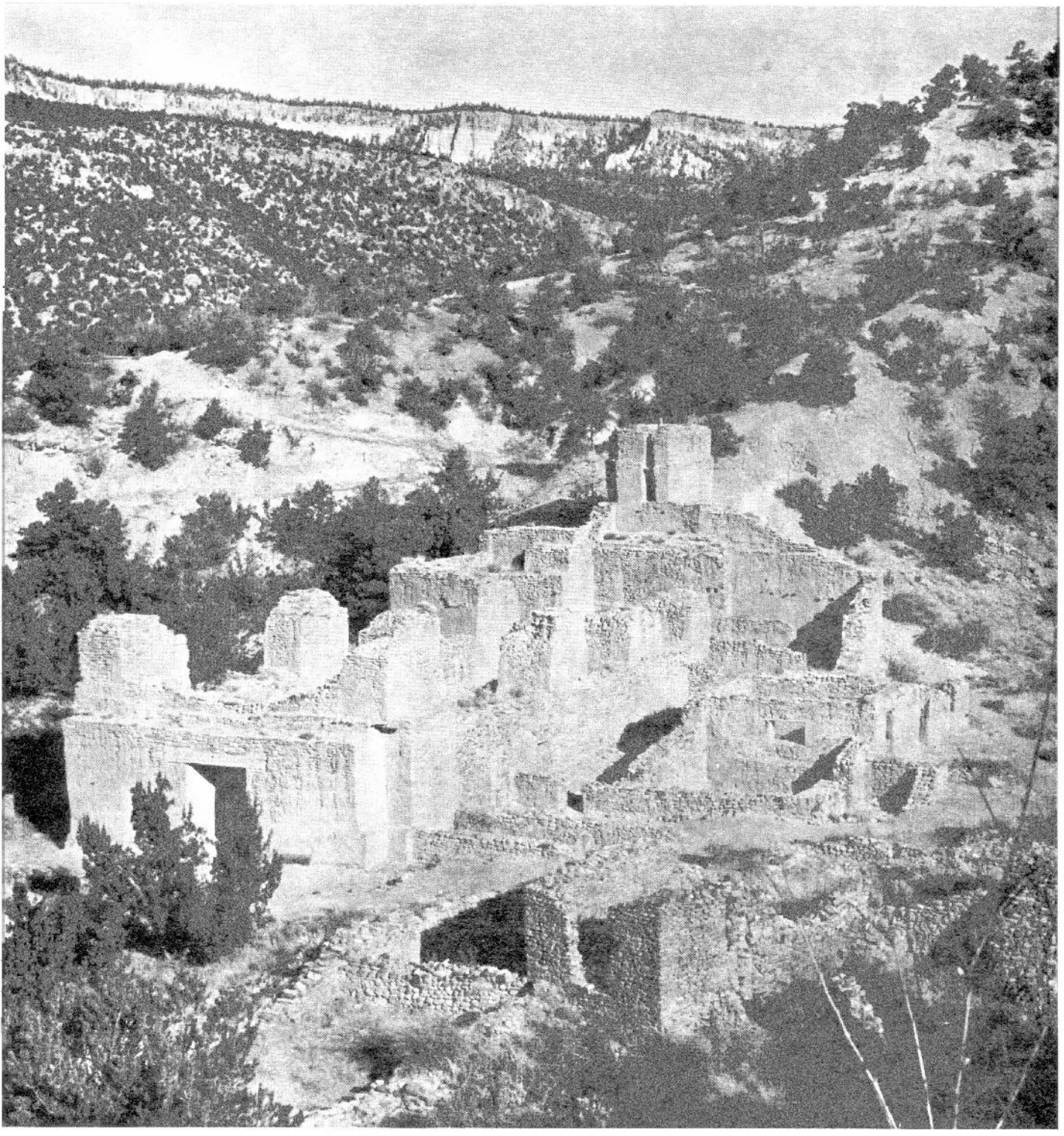
OBITUARY
GEORGE WEST

George West, Supervisory Archeologist with the Southwest Regional Office, died suddenly at the age of 34 of accidental causes while at home on August 21.

Mr. West began his Park Service career 13 years ago as a seasonal Park Ranger (Archeologist) at Mesa Verde National Park. He earned a Bachelor's degree in anthropology in 1969 from Adams State College, Alamosa, Colorado. In 1970, he was permanently appointed to Bandelier National Monument where he soon became Supervisory Park Ranger. He was reassigned to the Southwest Regional Office in 1975 where he served as Archeologist with Interpretation and Visitor Services, and, most recently, Chief, Branch of Indian Cultural Resources.

Memorial services were held on August 24, at his residence in Santa Fe, New Mexico. Contributions to the George West memorial fund for the Southwestern Association for Indian Affairs may be sent to P.O. Box 1964, Santa Fe, New Mexico 87501, in honor of his love and respect for the cultural resources of the southwest.

Mr. West was born in Guffey, Colorado, and is survived by his wife, Jackie, and daughter, Sarah.



MUSEUM OF N.M., MONUMENT DIVISION

In an effort to distribute the vast amount of information available within the NMAC, the Newsletter Staff will be publishing a separate issue of surveys performed and reports available. Everyone's cooperation and contribution will be necessary to make this a successful venture, whether Institution, Company, or Agency.

The information requested: Title, Publication Number, Date, Author, Area or Survey Location Description; Availability and Cost.

Send Lists to: NMAC Newsletter
c/o Catherine Aves
P.O. Box 4301
Albuquerque, NM 87106

NOTES

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Send membership inquiries and/or payment to the New Mexico Archeological Council, c/o Frances Levine, Secretary/Treasurer, 1677 Cerro Gordo Road, Santa Fe, New Mexico 87501.

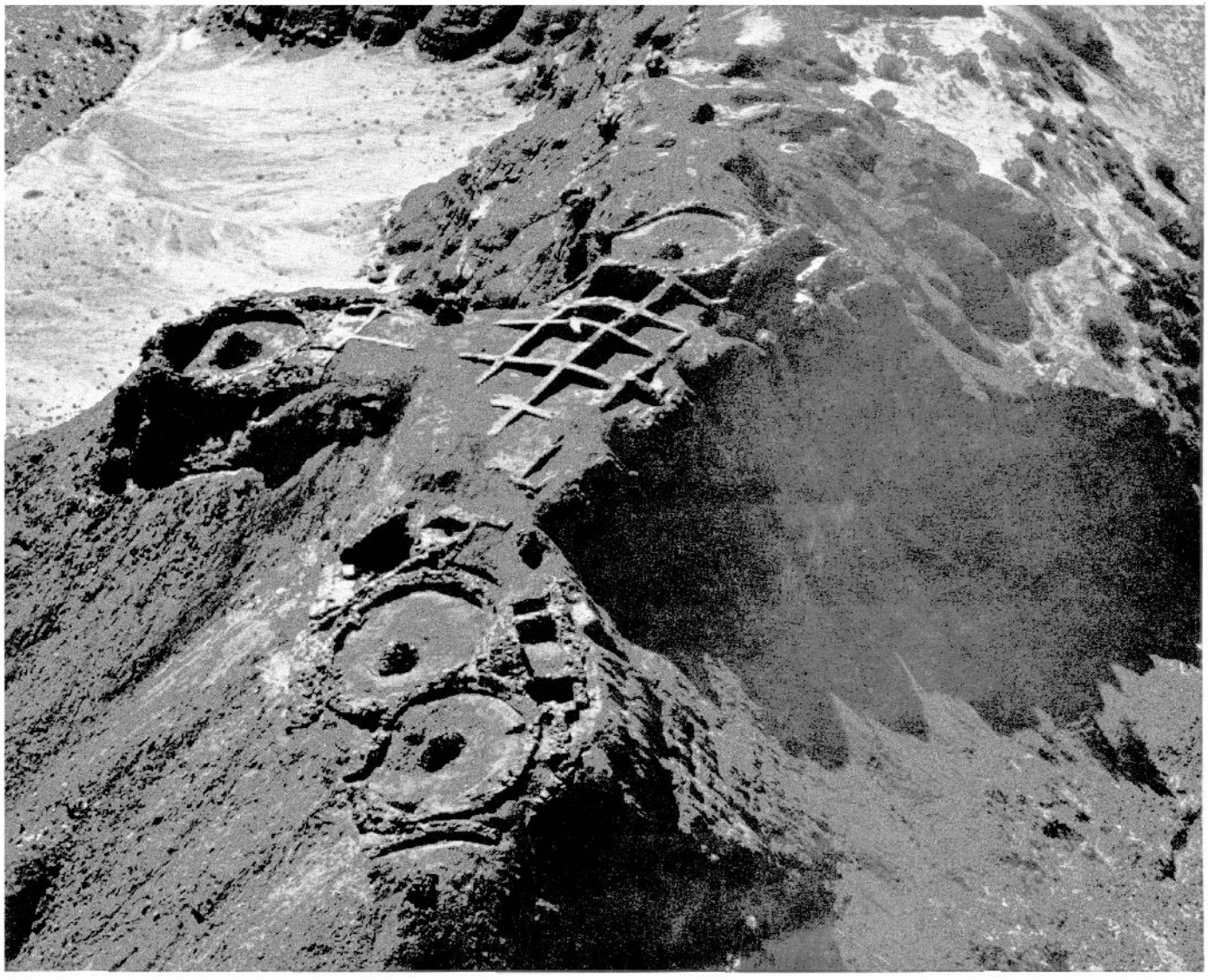
New Mexico Archeological Council
c/o Frances Levine
Secretary/Treasurer
1677 Cerro Gordo Road
Santa Fe, New Mexico 87501

THIRD CLASS

Newsletter

New Mexico Archeological Council

Vol. 3, No. 4



M. P. MARSHALL

Excavation at Bisa'ani, directed by M.P. Marshall under the auspices of the Navajo Nation and sponsored by Alamito Coal Company.

MEETING ANNOUNCEMENT

The next meeting of the New Mexico Archeological Council will be at 10 am, February 27 in Albuquerque. Rich Loose is coordinating this workshop; he can be reached at 848-2003 if needed for more information. The meeting will be held at Public Service Company of New Mexico in the "Reddy's Rendevous" Conference Room, 4th Floor of the Headquarters Building (414 Silver SW). Coffee and doughnuts will be provided. Paid public parking lots are available in several nearby locations.

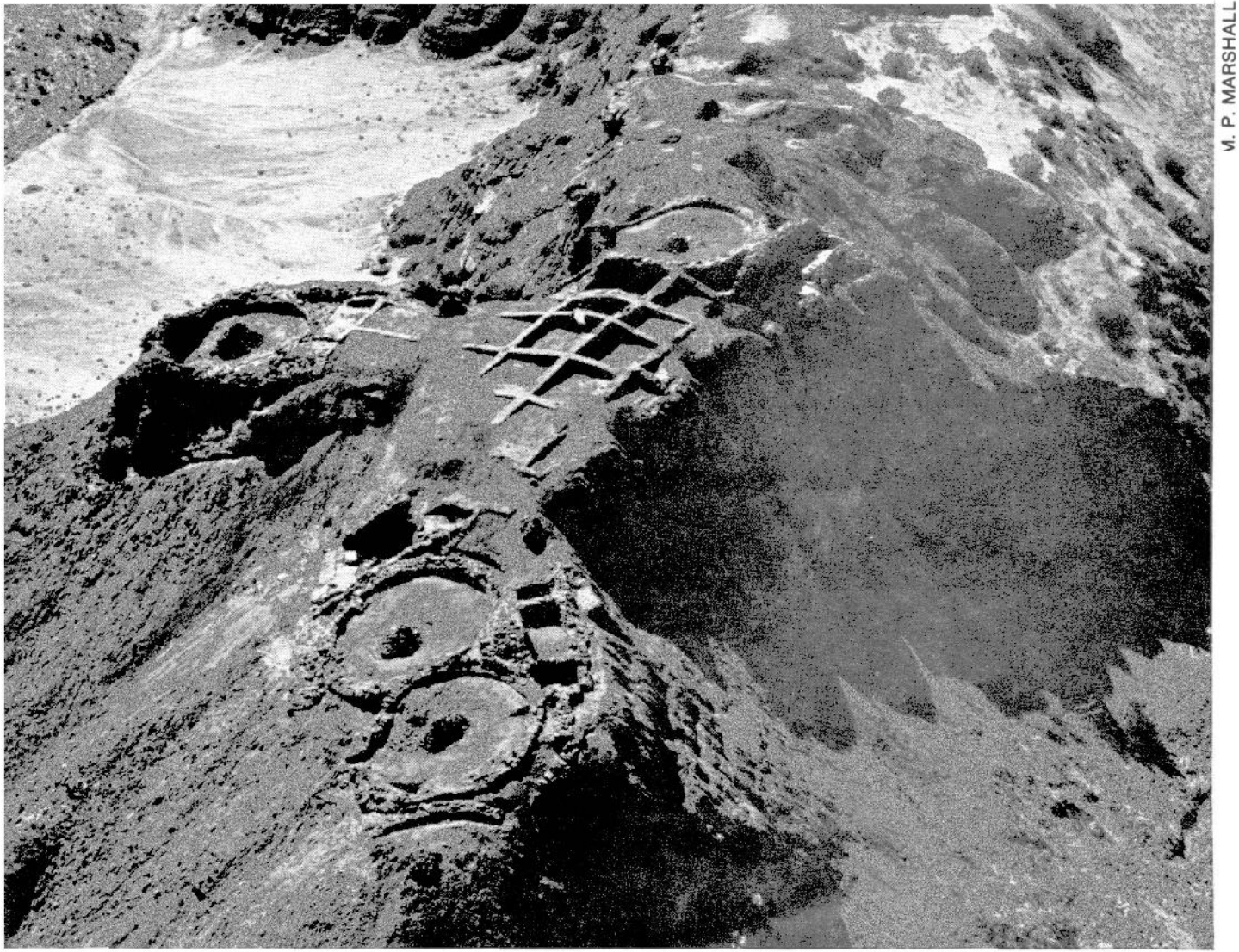
There will be a keynote address by James J. Shive, in-house archeologist for Georgia Power Co., and a panel discussion on the relationship of industrial and cultural resource management concerns. The discussion topic will be "Legislation, Development, Procedures, and Intervenors: What will the Reagan years bring?" We hope to outline some of the more typical problems and cost-effective approaches which industry can take if a non-adversary approach to cultural resource management is used.

NEW MEXICO ARCHEOLOGICAL COUNCIL

Vol. 3 No. 4

NEWSLETTER EDITOR
Catherine Aves

All material will be published as submitted, albeit subject to editing for length and clarity.



Excavation at Bisa'ani, directed by M.P. Marshall under the auspices of the Navajo Nation and sponsored by Alamito Coal Company.

FROM NOVEMBER 7, 1980 WORKSHOP

on Research Quality in Cultural Resource Management

Quality in Contract Archeology:

Management, Personnel and Organizational Consideration

INTRODUCTION

The premise from which this paper is developed is basically that the quality of an archeological contract research product ultimately varies with the quality of the management and staff who are directly or indirectly responsible for project implementation and completion. In contract archeology, management personnel are typically responsible for generating research objectives and for guiding and directing research through project completion. Clearly, the background and expertise of project managers as well as the amount of time and effort that those individuals can devote to a given project constitutes major variables which can regulate research quality.

Project support personnel, those individuals who generate the bulk of the primary data through their efforts in the field and laboratory, also influence the overall quality of the research effort. Their level of expertise and experience, commitment to the project and their level of commitment to the contract organization are significant regulators of quality in contract archeology.

In the context of project performance, management and support personnel also exist within an instutition/organization which is a system of relationships, the structure and operation of which also influences the quality of the research product. Here, factors such as the effectiveness of authority and responsibility distribution, the degree of information flow impedance, and the degree of flexibility in project performance that the contractor has achieved with the client can also regulate contract research quality.

Before embarking on this topic area, however, I would like to define what I mean by the term "quality" as applied to contract archeology, for my subsequent remarks derive from this definition.

Contract research is a highly restricted enterprise. Rarely do we have projects that fall into the "Golden Opportunity" category vis a vis research. Rather, the scope of most projects is constrained by season, time, money, agency/client needs, arbitrary size of the study area, and so on. These constraints, however, should not inhibit the formulation and fulfillment of research objectives.

Research quality, as I view it, is a processual outcome. I personally guage the quality of a piece of contract research by the degree to which the research product has entered into the process of making previous research in a given area anachronistic.

This definition encompasses the essential attributes of a healthy science; that each research effort builds on previous work, the phenomena studied become explicable from a wider range of perspectives, and eventually become explainable within a hierarchically ordered framework of relationships. At the same time, this definition takes into account the tremendous number of constraints on contract research, for I cannot expect all projects to offer the same degree of research opportunity.

This discussion, therefore, will focus on the goal of maximizing research opportunity as applied to management, support personnel, and organizational structure.

PERSONNEL

The selection of appropriate support personnel is probably one of the most difficult processes in contract archeology. Individuals with equivalent educational and experiential backgrounds and equivalent quality of recommendations from our colleagues do not necessarily translate into equivalency in quality of project performance. How can project managers select the best people for the job? Two previously mentioned factors are particularly important; the degree of commitment that an individual will make to the project and the degree of commitment that the individual will make to the contract organization.

With regard to support personnel, the manner in which contract archeology usually operates has created a population of gypsy archeologists who move from project to project, from organization to organizations, and who often accept widely ranging rates of pay. Under these circumstances, it is hardly surprising that levels of commitment vary and most organizations cannot sustain a particular level of research quality.

Commitment should be a two way relationship. Support personnel are more likely to increase their level of commitment to an organization if that organization will make a commitment to their lab and field crew members. This should include sustained longer term levels of employment, at decent wage/salary levels, and offer a program for advancement within the contract organization.

Similarly, individuals working within the context of such an organization will more likely exhibit a high level of commitment to a project, particularly if the individuals are fully integrated into the research effort. By this I mean that all support personnel be appraised of the research objectives, understand their role in fulfilling these objectives and have been encouraged to expand upon them.

MANAGEMENT

Several important areas of project and organizational management follow from the foregoing discussion. Contract archeology managers must often possess wide variety of skills including a strong archeological research background and experience, abilities in fiscal management, contracts, personnel relations and marketing. They are characteristically overworked and undersupported. Turnover in management is high, often rivalling that of field and laboratory personnel. These circumstances frequently make commitment to organization and research just as difficult for managers as for field and laboratory personnel, and thus research quality can be affected.

There are ways to alleviate these management problems. Institutional/organizational support is essential. Commitment to managers by being amenable to the establishment of a management system whereby authority and responsibility is decentralized or more widely distributed, and being nonparochial with regard to reaching research or fiscal and other related objectives via special services or consultants.

ORGANIZATIONAL STRUCTURE

The following are key structural and operational goals which require attention to reduce contractor-related variability in contract archeological research quality.

Decentralization of authority: For project management personnel this aspect of organizational structure would alleviate administrative burden and allow for more of their time and effort to be devoted to research. For field and laboratory staff this would mean the assumption of greater responsibility. But, if decentralization of authority is accompanied by integration into the organization, additional responsibility is consistent with additional participation in the organization, and establishes the means by which personnel can be evaluated.

Reduction of Information Flow Impedance: This follows from decentralization of authority and the delegation of responsibility. Communication is essential for the maintenance of the organization and the successful completion of research. Frequent project-specific and general staff meetings and other information exchange mechanisms are requisites to enhance information flow.

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Reporting Standards For Survey Archeologists: What Do You Write, and For Whom?

INTRODUCTION

During the past several years, I have reviewed several hundred of archeological survey reports. While many of these have been excellent, a goodly number have had quality problems such that it was necessary to return them to the writer for improvements. Others, while technically acceptable, often indicated a certain lack of professionalism and in some cases even naivete on the part of the author(s). I can identify five general areas that may help archeologists do a better job of reporting. These are: 1) audience; 2) reporting too little; 3) reporting too much; 4) accuracy; and 5) compliance vs. management reporting. Below I will devote a section to each of these issues.

AUDIENCE

More frequently than one would wish, archeologists fail to think through who it is they are writing for. There are at least five potential audiences for the survey report: 1) land or project manager; 2) client; 3) compliance officers such as the State Historic Preservation Officer (SHPO) or the Advisory Council; 4) the archeological community; and 5) a general public audience. Often the report is written for two or more of these audiences but sometimes such attempts cause confusion in a report or result in inordinately long or short reports to the wrong audience. Many of the problems reported below could be overcome if the archeologists would simply take the time to clearly define, in his mind, who the report is for, and what kinds of content will meet the needs of that audience(s). Sometimes, just the simple matter of dividing a report into properly organized sections or separating it into two reports is enough to solve the problem. The latter is particularly true when aspects of the report are both compliance and management oriented.

REPORTING TOO LITTLE

Over the years there has been a great deal of improvement in this area, however, problems remain. They are created, I think, by the following situations: when archeologists leave the academic world to set up private consulting firms, and when senior people fail to adequately review reports of new staff. It seems that the academic community is not properly preparing archeologists in the writing of survey reports. Thus, most archeologists do their first report writing in "real" situations, but without adequate preparation or review often resulting in a failure to include critical information. For example, the items most often neglected are those detailing how things are done, such as crew spacing. Generally archeologists seem to be better at describing *what* they saw rather than *how* a task was completed.

REPORTING TOO MUCH

At first blush it may seem that you can never over-report. However, there are circumstances where this is true. Let me give two examples in compliance reporting. Often material that is irrelevant will be reported. In compliance reports designed for the SHPO or the Council, some archeologists will go into pages of recitation on laws and regulations. This is simply unnecessary as the staff who reviews such material knows the regulations better than the reporting archeologist. A single sentence conveying your awareness of their existence is sufficient. A more common problem is over reporting of information available elsewhere. I once had a temporary summer archeologist who insisted on writing the same several pages of environmental data on every timber sale clearance he did. It was fine for the first report but subsequent reports should simply have referenced his earlier work, not repeat it. Archeologists sometimes get carried away with pages of culture history on projects where no sites were discovered. I believe this is unnecessary. On projects where no sites are discovered, a reference to an overview or other document which summarizes the culture history is sufficient. In documents where sites are found, it is likewise not necessary to discuss at length, for example, the Archaic when no Archaic sites are found.

ACCURACY

Archeologists need to learn when to count. I have reviewed reports where items such as site counts do not match from one section of the report to another or they differ in the text and on the map. Maps are probably the biggest problem. Sometimes they lack any reference to geographic space. They may be cut out of a USGS Quadrangle with no spacial reference transferred. North arrows are often lacking and legends if they appear at all are sometimes illegible. Another common problem is misstatements about laws and regulations. Archeologists generally have an imperfect understanding of how these operate and the differences between them and agency procedures. Proof reading and spelling errors occur, of course, but they weigh far less in judging how careful a job is being done than the errors of fact or misunderstanding about procedures that continually crop up.

COMPLIANCE VS. MANAGEMENT REPORTING

The most common problem with archeologists today is the misunderstanding that compliance and National Register nominations are the substance of cultural resources management. Nothing can be farther from the truth. The National Register is not a planning document and compliance procedures are not management. They are what they are, sheaves of paper which get shuffled about and those who deal with them are managers of paper not of cultural resources. The common word is redtape. The above is not an argument against compliance for I believe it is necessary. Rather, it is an effort to get archeologists thinking about the differences between compliance and management and not confuse the two or see management only as a compliance activity. Management of cultural resources has to do with on-the-ground decisions about, and allocation of, those resources. It does not have to do with paper about those resources. The paper which is produced may or may not influence decisions about the resource but it does not substitute for the decision. Nor will the decision necessarily be made simply on the basis of the content of the paper. In fact some parts of the compliance process simply report decisions. Archeologists, therefore, need to be keenly aware of what it is they are doing when a survey is reported. Compliance issues should be kept clear from management issues.

DISCUSSION

The above considerations are interrelated and need to be kept in mind when organizing and writing a survey report. Management agencies such as the Forest Service have requirements which go beyond strict compliance needs, in some cases, because we have management responsibility for cultural resources which go beyond the limits of compliance. Other agencies deal only with compliance and, in fact, some Federal archeologists function only as compliance officers and not as archeologists at all.

Some see the solution to survey reporting standards as the development of a single standard which can be applied across every agency and every situation. I think that is a pipe dream. No such standards can exist, for even in the Forest Service, we have different

levels of reporting depending on the kind of project and whether compliance or management or both are involved. What is needed is education of archeologists so that they can prepare the kind of documentation that will meet the needs of the user. Unfortunately the academic system does not appear to see such training as its responsibility. If this state of affairs continues perhaps NMAC could organize an occasional training session so that those members of the archeological community who need that kind of assistance can obtain it. Some would argue that it would be done by a Federal agency. I do not agree. The agency differences are too great. What most archeologists need is to undestand the differences as well as the similarities in reporting needs in a forum which provides all points of view, not that of a single agency. Besides all of which, clients have reporting needs also which, in some cases, may differ from agency needs.

Finally, what archeologists should keep in mind is that the process is dynamic. Management in particular and compliance to some degree will change and with that change will come changes in reporting to meet the changing needs. Archeologists need to remember some of their anthropological lessons about culture changes and be willing to apply those lessons to themselves and the social environment with which they deal.

Dr. Dee F. Green

USDA Forest Service

The Divergent Field of "Clearance Archeology"

Most of you know me as a real pessimist when it comes to a discussion of the quality of archeological research in a contract context. I do not believe that we are doing an overly professional job at it (present company excluded of course). Obviously, contract acheologists cannot study every facet of the record in three months, or two weeks, or two man days - but, what then are we doing....or perhaps better stated, what is it that we should be doing as contract professionals.

Carl Lambert, in his 1979 contract report on his excavations at LA 12778 states one very real goal. He stated that our efforts are primarily to "conserve data so that they may be used at a later date by researchers who are dealing with the larger system." He felt that the data he presented would not only provide avenues for future research but that someday the data could be placed in the perspective of some total prehistoric cultural system or picture.

If Carl's concept of contract archeology is correct, and I think that when viewed practically, we cannot find fault with it, our foremost responsibility as contract archeologists is the accurate, detailed and careful recording of information.

Let me dwell a bit on this responsibility. Perhaps I should first ask the retorical question - what is it that archeologists do? First, we describe sites and artifacts. Second we present interpretations of these sites and artifacts. Third, from these descriptions and interpretations, we develop reconstructions and theories concerning past and present lifeways. Each of these steps, description, interpretation, and systhesis can be further divided into high level and low level.

I would maintain that the archeological synthesizer, the developer of high level theory, the innovator...the "dreamer" if you will, is a comparatively rare breed in archeology - much as he is in any science. We "normal" archeologists, producers of the archeological archive - interpretors - follow established paradigms and procedures and conduct our business using familiar tools and even more familiar mental templates. This is well and good. However, It is this rare synthesizer that sees beyond the collected data and provides the rest of us with the means for our disciplines evolution, provides the new thoughts and directions for our collectively mundane, contemporary, go-with-the crowd ethic.

Let us assume for a moment that all of this is true and that the average contract archeologist will do little earth shaking archeology. This is not to say that some contract archeologists are not creative, simply that it has been my experience to observe that most contractual archeological work being done today in the Southwest is in the realm of the familiar - no surprises - and a very large portion of this work is, in my estimation, error prone and embarrassing.

Lambert has stated that contract archeology's major responsibility is to gather data. To this I would add my hearty endorsement. Now, if the average contract archeologist has lost interest in interpretation, synthesis, or high level theory, he must at least continue to maintain interest in the careful and complete recording of information so that someday his information can be utilized.

Let me cite an example that I used in talking with the UNM archeological field school participants this past summer. The UNM field school was digging at the 14th century pueblo of Rowe. The excavations were designed to provide information about specific research questions which originated through the study of Carl Guthe's 1917 field notes of his excavations at Rowe. These notes were "discoverd" in the Laboratory of Anthropology vault. Now Guthe's work was conducted over sixty years ago and in all fairness, was probably ahead of his time. However, if the site had been destroyed since his time, our study would have been left without useful collections, without faunal or lithic information, without information on midden deposits, or information on the differences between plaza areas, without information on differences in date or in building sequence and we would have been left with the erroneous impression that the site did not survive into the glaze paint period. This lack of data would in all likelihood have eliminated his work (or the site) from being incorporated into most current archeological investigations. He DID leave us a set of data and his data has been of great use. We can all think of site reports, excavations, and observations from which no information is left...The unwritten record of American Archeology. How many boxes of sherds do you have in your closet, or, come next year I've just GOT to write up that site...or get the damn thing out, we're out of time and money.

This brings me to a very important point. Without data our "inovators" or "dreamers" cannot function. Perhaps worse, with inadequate data, our dreamers will conjure up nightmares...and we as contract archeologists, will wind up in the future, living in one. Why? Because we, the contract professional, lacking time and facility for original thinking, MUST inevitably use the methods and theory currently available to us.

Let me return to my original argument. In the past three years of working for the National Park Service Branch of Indian Cultural Resources, several thousand archeological reports have gone past my desk few without fault. Fewer still with an original idea or interpretation. The same mistakes appear time after time after time.

Now what are these mistakes. First and foremost, and whether we like it or not - we are in the process of developing a new archeology called "Clearance Archeology." The people involved in this business are not, for the most part, working archeologists as I have defined it. Goodyear, Raab and Klinger state that across the entire discipline, archeologists are guilty of possessing only vague notions of research design, possess inadequate theoretical perspectives, and problem formulation abilities and remain ineffectual in developing research orientations. I would maintain that the "clearance archeologist" could (a) care less about these preported weaknesses and (b) are the most guilty parties when it comes to the formulation of "vague notions of effective research."

Now, before you get all riled up, I am not accusing all archeologists who are employed in contract work of being "clearance archeologists," or of being callous to the methodological and theoretical problems that Goodyear, Raab, and Klinger speak of. Glen Rice and Shilry McAllister's paper on the incorporation of small contract projects into regional sampling designs, Joe Tainter's work on settlement patterns and significance evaluation of low density surface sites, are but two of many examples demonstrating attempts to place contract work into a realistic archeological perspective.

The fact that such a thing as "clearance archeology" exists at all is not pleasant. That it is somehow distinct from archeology has been vehemently denied. But let's look at reality. Clearance archeology stops at the descriptive level. Interpretation of any kind is only found associated with very large projects. Even then, most interpretations are extremely low level, like, "Archaic peoples in this area were probably hunters and gatherers." Analysis, when it appears, is most often rushed, poorly thought out, and generally shop-worn. Again, I'll use Archaic studies, most tell us that our "probable" hunters and gatherers manufactured tools out of stone. Our larger reports generally detail how the tools were manufactured. Rarely does anybody mention what these tools were used for and why. The explanatory utility of many of these analysis are almost nil We cannot build on them.

Part of the clearance archeologist's problem is directly related to careless, quick and unedited data recording and report preparation. I will not cite a great number of examples of poorly thought out procuedure or poorly prepared documentation. I don't believe that I need to. The "what can I get away with" attitude of the clearance

archeologist is fairly widespread and is known to you all. If it is not "what can I get away with" then at the very least it is ignorance, lazyness, extremely cold hands, or possibly it is late Friday afternoon...whatever. The frustration of having to work with site reports which have no information, locations which are off by a quarter mile or more, descriptions that do not describe...like "there is a roomblock and a sherd scatter"...continue unabated.

Just two weeks ago, for example, Our office was asked to provide an opinion on the quality of archeological work performed prior to the start of a Dam (that's D.A.M.) project. The flood pool had been surveyed by contract archeologists in 1972. The work had been rechecked in 1973 and known sites reflagged in 1980. Surely you might think that the agency responsible for the project had had enough archeological survey done to carry on with its work. When the agency archeologist visited the project area he noted numerous locational errors. No survey boundaries had ever been recorded and he discovered and recorded several new sites. In our inspection we located seven additional sites and this, by chance. We still don't know where the original survey boundaries were or what portion of sites remain undiscovered. Additional construction will probably require a complete re-survey at considerable expense. Clearance archeology had been performed. Who pays the bill. I have distributed copies of an archeological "clearance" survey report which came to us last week. I have retyped it and changed a few names and numbers. The last page of the handout includes some questions which could be used to determine the reports adequacy. Now, YOU decide. I do it every day. The report is not unusual.

My feelings about reports of this nature is that they represent trouble. I have also enclosed a map showing the whereabouts of archeological sites that are known from other surveys for the area described in the report. The circle in the middle represents the location of one of the twenty drill holes that were reportedly inspected...Did the client get his money's worth? Did we, as professionals, get the information? Did we, as managers, get the data needed to make a determination? Again...who pays the bill?

Let me provide a brief demonstration of just how far "clearance archeology" has removed itself from the challenge of interpreting the past.

For this little experiment I made one assumption. That is, that an archeologist, about to start field work in a given area, would go to some trouble to understand the existing information about the immediate area surrounding his proposed work space. This background study could be expected to appear, at least as a footnote, in the report or product of his current project. With this assumption in hand, I randomly selected 14 "clearance" surveys, each having been conducted this past year—from the Branch of Indian Cultural resource files conducted two kilometer and five kilometer radius computer checks of each projects location, recording any archeological site and survey that fell within the search radius of each point. The San Juan Basin Archeological Data Base was used as my source of information. Out of the fourteen surveys checked, eight listed archeological sites within two kilometers of the projects boundaries. Of the remaining six, four had had archeological surveys conducted within the two kilometer radius. The computerized data base disclosed archeological sites within 5 kilometers of all surveys considered. One survey, which reported no sites, had 107 archeological sites within two kilometers of the project's boundaries.

I assumed, of course, that some mention of past work and nearby sites would be included in the interpretation portion of each of the clearance reports. Of the 14 reports, only one mentioned previous work. This was a drill hole survey where two sites had been located on a previous survey. None of the other survey reports had any mention of previous work, sites in the vicinity, or integration of the reported work with the local or regional cultural surroundings. These were just "clearance" surveys . . . done by "clearance" archeologists?

I think that we can do better.

OK, I have stated that we're building a new archeology called "clearance archeology" and that this field is not altogether compatable with archeology as a profession. How then, can we eliminate or re-orient this trend. I shall present five possibilities. There are: (1) Greater supervisory control, (2) greater attention to training, (3) Stricter evaluation of work by both cliental and land managers, (4) Development of a system of information background "checks", and (5) Development of systems that allow for easier access to pertinent information. Let me say a few words about each.

SUPERVISION

It has been my observation that supervisory quality control is by and large lacking especially in small and medium sized contract projects. I am aware of all the pat excuses...time crunch, business, politics, meeting schedules...but, our reports, our archeological product, is our only face to the world. If we, as program supervisors, project directors, site supervisors, permit unedited, poorly researched or poorly written or incomplete manuscripts to leave our collective desks, then we, as managers, are derelict. Demand high report standards, high work standards and reject work and employees that don't give it to you.

TRAINING

Program directors should give a lot more thought to the development of general in-house training and each employee's professional development. We cannot expect quality work from inadequately trained or inexperienced personnel. Pat Beckett's seminars last year are an extremely good example of both the organization and the compelling need for such programs.

STRICT EVALUATION BY THE CLIENT AND THE LAND MANAGER

The responsibility for determining project adequacy often lies with a Federal or State Land Manager. I would maintain that these organizations need to define clear standards and insist on the strict compliance with these standards. Land managers must also take into consideration that there is a possibility that contracted archeologists ignore, fail to recognize, or fail to record some parts of the archeological record. As demonstrated in my examples, in the San Juan Basin area, Federal land managers will soon have the ability to check the accuracy of reported "no site" situations by interactive consultation with the NPS computer data base. The Federal agencies, as land managing institutions simply cannot afford sloppy or inaccurate work. It costs too much.

BACKGROUND CHECK

The little demonstration of how clearance archeology tends to ignore past local and regional work and looks the other way when questions of interpretation come up can be remedied. I think, by developing an easy method for obtaining archeological background information. A "background check", which could provide limited information on all work previously conducted within or near a specified project area, could become a required part of any archeological report. Hopefully, the writer, confronted with the evidence of local site and survey information, would feel the need to provide some interpretation based on these findings and his own field work.

Now the ability to do background checks is currently available through the Branch of Indian Cultural Resources for New Mexico's portion of the San Juan Basin and will be available for the entire State through the newly developed Laboratory of Anthropology computer records system (ARM) in the very near future. The lab is currently coding site information at the rate of 1000 sites per month. Background checks of this information is available for a slight service charge. The NPS system is currently available to Land Managers, Federal archeologists or for Federally funded projects. Using this system requires the filing of Laboratory of Anthropology computer site forms with the Federal Land Manager.

Now, using these "background check" systems, any archeologist should be able to obtain information needed to make the interpretations which we so seldom see in our clearance reports...Once these systems are up-to-date, there should be no excuse left for "vacumous clearance reports."

DATA DISPERSAL

Finally, dissemination of data needs to be greatly accelerated. Once again the Laboratory of Anthropology is attempting to become the vehicle for this action. Curt Schaafsma is in the process of inaugurating an ambitious plan to produce micro-fische copies of all New Mexico archeological reports and link these reports to the background check information. Archeologists requiring full reports for an area will be able to request micro-mische copies for something on the order of 50¢ per 100 pages. These copies can be rapidly mailed upon request.

By employing the five points that I have described above, we can eliminate the "clearance archeology" mentality from our membership and get back to our primary responsibility of identifying, exploring and understanding the nations past.

Walter Wait

On Accuracy In Site Locations

In this era of cultural resource management, the archeological survey is still the basic means of locating and inventorying sites, despite contentions that the "techniques of the past" or "slow field methods of the past" are not meeting the needs of today, particularly from the standpoint of quality (Lyons and Ebert 1978: 17). Lately both the methods and the results from contract surveys have been broadly criticized and even attacked. If these expressions were interpersonal ones or even inter-institutional, they might be taken with reservations or passed off. However, the charges are mostly leveled by archeologists employed with federal agencies and may be read in Government Printing Office publications, so they can hardly be ignored. Instances include King (1978) and papers within the volumes edited by Lyons and Ebert (1978) and Mayer-Oakes and Portnoy (1979).

The theme of the criticisms seems to be quality, or the lack of it, and the perceived problems are with both conceptual and technical approaches. This is quite beyond the level of the old gripe, i.e. "why don't reports deal with the things that interest me?" One of the more explicit statements (Lyons and Scovill 1978) is pretty negative and a second (King 1978) is positive in its phrasing. I think this outspokenness is not malicious; perhaps it is a release of frustrations or a reaction to situations where, as one former agency archeologist put it,

> "... in most instances, governmental and private clients were not getting their money's worth from the contract reports which they were buying" (Fitting 1978: 12).

On the other hand, one of the most thoughtful treatments that I have seen is Mark Raab's article "Research Design and Resolution of Problems in the Contract Archeology Process" (Raab 1979).

In pinpointing problems, one archeologist stressed bias, particularly bias that related to the background or the research interests of the investigator (King 1978: 39-42). Another documented "survey error" by comparing two surveys in the same reservoir area of south Texas, where two parties came away with quite different findings (Thom 1979). My own pet complaint is probably accuracy, since I would hold that a site survey record should, at a minimum, allow an archeologist not familiar with the site or the area to find his or her way back to the proper location, and allow a straightaway identification of the site from among any others in the vicinity or of a similar type. The most important element is the plotted location, whatever the maps used.

Back in the dim, dark ages of the 1950's and the 1960's, archeologists rarely had the means to locate their sites accurately. USGS map coverage for the Southwest, with the 1:24,000 scale (7.5') topographic maps, was very incomplete; remote sensing (in the United States) had barely begun; and if aerial photos were available at all, they were probably old and with problems of resolution and contrast. People made use of what they had.

As an instance, the Navajo Land Claims surveys recorded hundreds of older Navajo sites (during the 1950's) and plotted these on New Mexico State Highway Department quad maps, which do show roads and drainages but of course not topography. One of the principals in that survey told me that they used the highway quads as the best maps which they could get, but he would not guarantee accuracy of the site locations within a mile (Personal communication, J. Lee Correll, July 11, 1977). A well-known survey in eastern Arizona (Longacre 1962) used the USGS 1:250,000 scale map series for plotting site locations; again as the best coverage available. The 1963 Chuska Survey in northwestern New Mexico used 1939 vintage (!) Soil Conservation Service aerial mosaic quads, at a scale of 2" = 1 mile.

The situation needn't have been quite so grim, at least for areas covered by public land surveys, since for these areas there are the General Land Office township plat maps, done at a scale of 1" = 40 chains, which is equivalent to 2" = 1 mile. These township plats, particularly from land surveys done in this century, often show landscape features such as roads, buildings and some topography. However, I do not know of an archeological project that has used this map series.

Nowadays, I would judge from the literature, most archeological surveys record site locations on USGS 7.5' quad maps, or on recent aerial photos, perhaps on special maps made by or for the client (as a coal company), or on more than one of the above. Map resources have vastly improved, but there are still problems. Lyons and Scovill (1978: 4) write that

> "They (archeologists) plot site locations with Brunton compass accuracy, a technique that often precludes rediscovery and positive identification of them at a future date."

Loose and Lyons (1976), and Morris and Manire (1976) met the problem of locating sites by using aerial photos in the field, the former at a scale of 1:12,000 and the latter project at 1:500 (for a much smaller area). Another recent survey which used aerial photos, at a 1:7800 scale, warned in their report about problems due to foreshortening, which led to measurement errors that "occasionally exceed 25%" in transferring site locations from the photos to USGS topographic maps (Powers 1979: 15). Foreshortening errors can of course be substantially reduced by using aerial mosaics, in place of prints made directly from aerial photographs.

Within the last three years, I have used site survey data from at least five previous surveys, all done in the 1970's, to compile data bases for land use planning in serveral parts of northwestern New Mexico. These surveys had been done by various institutions and individuals; one was an earlier project of my own. With one glorious exception which I am happy to mention by name — the NPS Bisa'ani survey by Bob Powers and others — my experiences only confirmed what the critics have said. Not only were some of the site locations wrong, most of them were wrong, and the errors were not necessarily small ones. I have no reason to think that the projects involved were unusual or exceptional, or that the situtation is much different today.

The accuracy problems were similar for all of the projects other than the Bisa'ani survey. Plotted site locations could not be relied upon. Some locations were completely accurate, others were off by relatively small amounts, and still others were in error by upwards of a quarter-mile. Because it was unreliable, the information as recorded couldn't be used for land use planning, where accurate locations were of any importance. One of the four projects was a major survey along the lower Chaco River drainage, where errors in site locations had been recognized early on in the original survey (Loose and Lyons 1976). Thereupon the investigators switched to the use of aerial photographs in the field, and reported the problem eliminated. However, their own "Master Archeological Site Location Map" shows that the problem wasn't resolved, for in the sample of their sites close by the Chaco River, the locational errors range from zero to a quarter of a mile. My own earlier project was in this same area, and the average error of location was about 100 meters.

The matter of finding sites again and identifying them is made more difficult by a high site density, or when many sites are small or have few if any features; also when survey descriptions are not all that might be desired. And once that first wrong location is found, how can you trust the others? The discovery of a site which doesn't fit any existing description or location adds another dimension. Were sites missed, in areas supposedly surveyed intensively? One finds oneself cursing one's colleagues and possibly even oneself, if the project area is a scene of your own earlier work. This last situation can lead to an inexpressably foolish feeling, if you suddenly realize that a non-conforming site is one of your own and not someone else's after all.

As I noted earlier, my own experience has been that locational errors were the rule more than the exception. What do you do, when you're the one in the field and come up against this situation? There would seem to be two choices; to correct the existing data or, if the conflicts are simply not reconcilable, to re-record the sites (including their locations). To try and reconcile matters can be very time-consuming, therefore expensive, and

productive of much frustration. Re-recording means a duplication of effort and leaves an unavoidable impression of time and money wasted.

There is actually another solution, which results in absolutely accurate locations with a minimum investment of time. I have been able to use this on at least four occasions, but it isn't always feasible, and in order to use it al all, *timing* is the crucial element. It goes like this.

Development projects which modify the landscape, such as roads, railroads, utility corridors, coal mines and the like, usually *start* with a map of the project area - an aerial mosaic, mosaic strip, or a close-interval contour map. The maps are made (for the project) from aerial photos - from stereo pairs, if contours are to be plotted - taken by aircraft at a known altitude. To construct maps from aerial photos one must have a means of scaling the photos, whether the final product is an aerial mosaic or a topographic/planimetric map made with a stereo plotter. The photos are scaled through ground controls, which means that before the photos were flown, land surveyors went out and placed aerial targets around the landscape (at section corners, for example) and measured both horizontal and vertical distances between these control points. Typically the targets are large white plastic panels, laid in some prearranged patter (X, L), but other materials may be used. The aerial photos can be taken at any time after the targets are down, usually within a few days. The land surveyors then identify their targets in contact prints (9" x9" in size) and the target locations are usually carried through to the final project maps.

Targets placed on archeological sites are just as visible as targets placed anywhere else. If the archeologist can be involved at the earliest stages of a project, before the land surveyors go out to place their ground controls, the archeologist should go out when the land surveyors do and place a target on every site that can be found. The rolls of white plastic are a minor extra burden for a pedestrian survey. Formal site recording can be held for later; time is usually short at this stage and the point is to get an aerial target on every site that can be found or (if a previously-surveyed area) that can be relocated.

When the aerial photography is flown, the archeological targets as well as the ground control points will show in the resulting prints. The archeologist will be called upon to identify his or her own targets in the prints, since the targets will be very minute in size and no one else will know where to look for them. Locations of the archeological targets are then carried along to the final project maps. A principal problem with the use of maps in the field is eliminated; namely a dependence upon the skill of the user.

If the final project maps are aerial photo mosaics, one will have to scale the site locations from other identified points or features (such as roads) on these maps in order to replot the locations on another map series, such as the USGS 7.5' quads. If the development project lies along a corridor, there will usually be a center-line and stationing, which can be a great help for measuring and replotting site locations.

If the final project maps are topographic/planimetric, there will probably be additional controls shown on them in the form of New Mexico (or Arizona) coordinate system 10,000 foot grid lines. This coordinate system is similar to the UTM system, but uses 10,000 foot grids and is employed in civil engineering projects (such as roads, railroads, coal mines). USGS quad maps have marginal tics for New Mexico coordinate system grid lines, as well as for UTM coordinates, so that a site location with New Mexico grid coordinates can be replotted with pinpoint accuracy.

The procedure just described is more than a theoretical possibility. Approximately 190 sites along one transmission line corridor were so located. Another 224 sites on the eastern Navajo Indian Reservation have aerial target locations, among which are 72 sites originally recorded by other projects. This latter group, when measured and compared with their prior plotted locations, was the basis for my earlier statements about the existence and the magnitude of errors in certain previous surveys. Finally, another 50 or so sites in the Alamito Cal Lease area had been found, and targeted, by the date aerial coverage was flown.

Targets can be placed by anyone; this requires no special skill. There should be a record made of at least the approximate locations so that correct identifications can be made later, and so that no sites are omitted. If the archeological recording is done following the target-placements, the site survey sketches should include the target locations within the site areas.

With accurate locations, engineers" decisions which will allow avoidance of cultural resources become much more feasible. The absolutely crucial part in all of this is for the archeologist to be involved with a project *early* enough to get into the field and get targets on site. To accomplish this, in turn, requires both awareness of the possiblilities and cooperation between the various parties. Serious attention to such an approach, I submit, will do much to relieve one of the charges against contract archeology, simply by making fuller use of a step (aerial photography) which already exists in the course of a development project. Gracias.

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John P. Wilson

HISTORIC PRESERVATION LAW TRAINING COURSE

The Historic Preservation Bureau and the Association for Preservation Technology will be jointly sponsoring a 3 day training course on how historic preservation laws and regulations relate to the planning and execution of Federal projects. The course will be held in Albuquerque on March 25, 26, and 27 at 517 Gold, SW, in Room 8214. The course will be conducted by personnel of Harbridge House Inc., Boston, Mass.; a firm widely respected for its work in developing training programs. The cost per participant will be $200.

The course will explore three basic areas:

1) Principles and benefits of Histc Preservations;

2) A thorough review of the Advisory Council Regulations (36 CFR 800) for Section 106 of the National Historic Preservation Act and other applicable laws; and

3) Actions required by Federal, State, and Local officials and others in obeying these laws and regulations. Such actions include identifying cultural resources, assessing project effects, and developing mitigation measures.

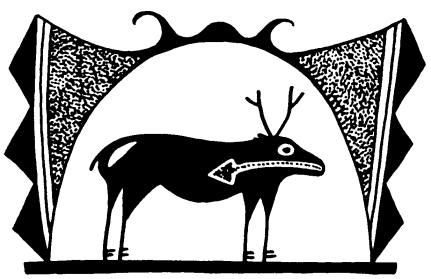
Lectures, slide shows, films, and case studies have been combined to provide a varied program. Case studies represent actual situations that have arisen under Sec. 106 of the NHPA of 1966. The course encourages discussion and participation by course members.

The course was designed for professionals who encounter preservation related Federal laws in their jobs. These persons include Federal and State Agency Officials, local government recipients of Federal grants, staff members of State Historic Preservation Offices, representatives of Historic Societies, and consultants whose work in architecture, engineering, environmental issues, or cultural resource management bring them into contact with Federal preservation laws.

This course is limited to 30 people, so register as soon as possible.

For registration, or more information, contact:

Jim Bieg
New Mexico Historic Preservation Bureau
505 Don Gaspar
Santa Fe, NM 87503
505—827-2108



1981 NMAC ELECTION RESULTS

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NOTES FROM THE EDITOR

A new year--A new group of officers and committee members--We thought it was time to add a new section to the Newsletter. "The Soap Box" - For anyone (paid member or elected official) who has anything to say on the subjects of archeology, history, ethnography, any of our professions; or NMAC itself. The only restrictions will be to keep it brief and don't say anything you can't prove in court. (The views expressed in this column are not necessarily those of the Newsletter Staff or any other member of NMAC.) All that considered - send your submissions to the Editor and they'll be in the next available issue of the Newsletter.

I'd also like to remind everyone of the already existing, but little used, sections of the Newsletter:

1) "Institutional Reports" - If you have done/are doing/will be doing any sort of work you'd like the rest of the profession to be aware of....here's a place to tell them.

2) "Job Announcements" - With a distribution including many of the major institutions within a four state area, this could be one of the best methods of finding people to fill those empty positions. To my knowledge, this column has had only one announcement since it began.

We still need lists of survey reports and publications from *ALL* groups for the special report issue (hopefully to be out by the end of the summer). To date, only four have been received. We'd like as much information as possible: Title, Publication Number, Date, Author, Area or Survey Location Description, Availability, and Cost. Please have these to the Editor by April 30, 1981.

One of the most important duties of the Newsletter (as well as the Publications and Public Relations Committee) is to gather and distribute information to our professional community. There are just under 100 paid members in NMAC (although in this year's election and at meetings, we consistently had only a 48-49% turn-out); there are another 100 names of individuals and groups on the distribution list. We can only distribute information -- it's up to everyone to make the gathering as easy as possible.

There -- the first "Soap Box."

Catherine Aves
Editor

Newsletter submissions should be sent to:

New Mexico Archeological Council
c/o Catherine Aves, Editor
P. O. Box 4301
Albuquerque, NM 87196

CORRECTION

In the last issue (Vol. 3, No. 3), the picture of Sliding Rock Ruin in Larry Norby's paper was incorrectly credited to the Museum of New Mexico. The correct credit should read Southwest Cultural Resources Center - N.P.S.

BOOK ANNOUNCEMENTS

THE ASSOCIATION FOR PRESERVATION TECHNOLOGY ANNOUNCES THE LONG-AWAITED PUBLICATION OF THE

1865.

RUSSELL & ERWIN MANUFACTURING COMPANY

ILLUSTRATED CATALOGUE

OF

AMERICAN HARDWARE

WITH A NEW INTRODUCTION BY LEE H. NELSON, AIA

An important benchmark in the development of the American hardware industry, this encyclopedic catalog is an indispensible reference tool for architects, preservationists, and others. Over 450 pages long and containing 3300 line engravings, the volume contains valuable information on virtually every article of American hardware manufactured in the United States in 1865. Locks, latches, hinges, bell trimmings, nails, screws, bolts, handles, tools, chandeliers, scales, saws, traps, hollow ware, cutlery, sleighs and hundreds of other items in every conceivable size and shape are described and illustrated.

While this paperback reprint slightly reduces the format (the original being 12 by 17 inches), it is unabridged and there is no loss in quality regarding the original art of the engravers and printers.

A concise introduction by Lee H. Nelson, AIA, provides insights into the growth of the hardware industry in America and an appreciation of this remarkable catalog, together with mention of its English and American antecedents.

Originally sold in 1965 for $25, available in reprint at substantial savings.

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$14.95 (U.S.) + $1.50 for postage & handling.

Mail Name and Address along with check or money order to: APT, Box 2487, Station D, Ottawa, Ontario K1P 5W5 Canada

Barbara Daniels Swannack
Editor - *Communiqué*

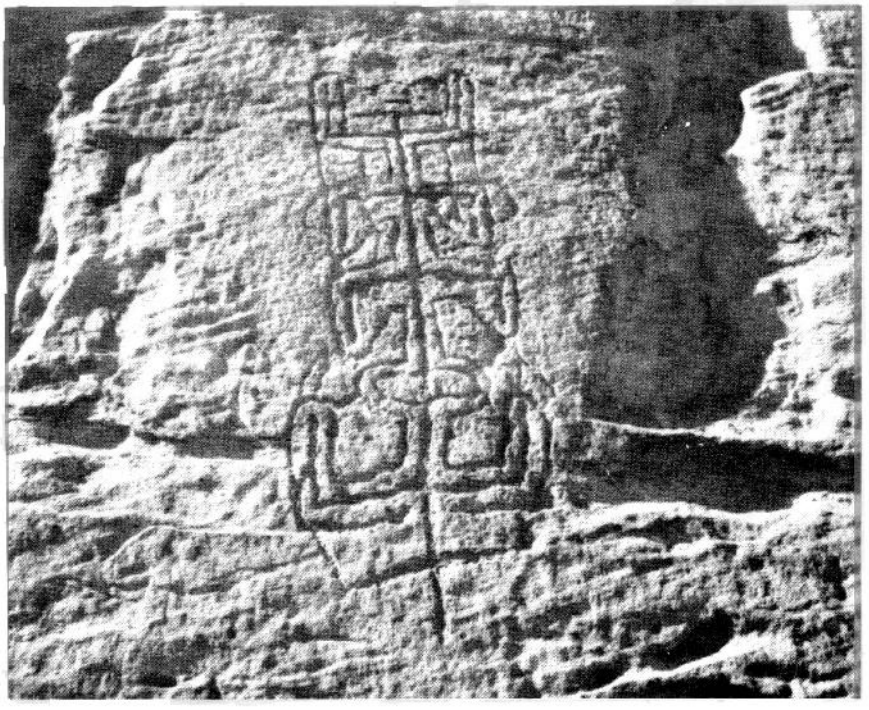
MT. Taylor Overview

The Mt. Taylor Overview, the third publication in the Forest Service/Bureau of Land Management Cultural Resources Series, has been completed by Joseph Tainter and Dave Gillio. The area of the Overview includes portions of Sandoval, McKinley, Valencia, and Bernalillo Counties.

Due to severe budget restrictions, only a limited number of copies were printed. Distribution will be by the BLM State Office to Federal Agencies, Contract Institutions, University Libraries, and researchers working in the area. For those wishing to obtain copies, Fran Levine (BLM - SO Resources Division) may be contacted, but no promises can be made as to availability.

BLM - State Office
P.O. Box 1449
Santa Fe, NM 87501
988-6227

T. LUTONSKY



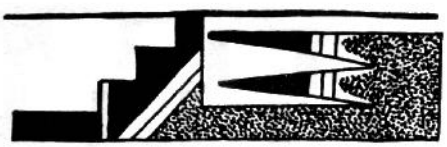
MEETING ANNOUNCEMENTS

Archeological Resources Protection Act of 1979

Public Hearings for HCRS Uniform Regulations (36 CFR 1215)

Public hearings will be held in Albuquerque; Saturday, February 21, at the Southwestern Indian Polytechnical Institute (9169 Coors Rd NW), beginning around 9:30. The local office of the Bureau of Indian Affairs is the host; Bill Allen or Bruce Harril at that office may be contacted for further information (766-3374).

Written comments should be sent to the Director, Heritage Conservation and Recreation Service, Code: W512, Department of the Interior, 440 G Street N.W., Washington, D.C. 20243.



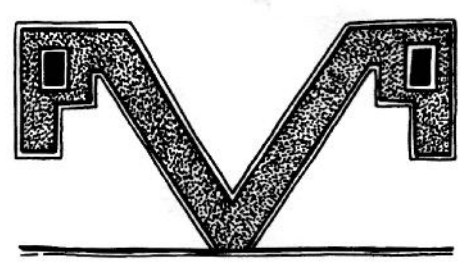
Coal Development Impacts

The Farmington League of Women Voters is sponsoring a public forum on the subject of coal development impacts. This meeting will be in Farmington at the San Juan College Auditorium, February 26, 1:30 - 3:00, 3:30 - 5:00. Areas of discussion will include:

- Coal Development Potential
- Water
- Heritage Resources
- Navajo Perspective
- Sociological Impacts
- Reclamation

The area of Heritage Resources will be discussed by William Clemens (University of California at Berkley) on Paleontology, and Ted Birkedal (NPS, Santa Fe) on Archaeology.

T. LUTONSKY



NOTES

MEMBERSHIP FEES FOR 1981 ARE DUE.

NEW MEXICO ARCHEOLOGICAL COUNCIL, INC.

MEMBERSHIP APPLICATION YEAR_____ AMOUNT ENCLOSED _____

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CITY_____ STATE_____ ZIP

NMAC Members shall receive quarterly Newsletter, occasional publication, and NMAC membership privileges. Cost per year: Individual Membership, $7.50; Institutions, Organizations and Sponsors, $25.00.

PLEASE MAKE CHECKS AND MONEY ORDER PAYABLE TO THE NEW MEXICO ARCHEOLOGICAL COUNCIL.

Send membership inquiries and/or payment to the New Mexico Archeological Council, c/o Catherine Aves, Secretary/Treasurer, P. O. Box 4301, Albuquerque, N.M. 87196

New Mexico Archeological Counci
c/o Catherine Ann Aves
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