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TECHNICAL REPORTS**

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Volume V, Chapter 16

Excavations at Ridge Line Camp (Site 5MT2242)

An Archaic-Anasazi Limited Activity Site

by Judith A. Southward

Prepared For

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TABLE OF CONTENTS

	Page Number
LIST OF FIGURES	iii
LIST OF TABLES.	iv
ABSTRACT.	v
EDITOR'S PREFACE.	vi
INTRODUCTION.	1
Acknowledgments.	1
Location	2
ENVIRONMENTAL SETTING	5
Climate.	5
Geology.	6
Soils.	7
Fauna.	7
Flora.	7
Potential Resources.	10
Historic Land Use.	11
SOCIAL SETTING.	12
SURFACE EVIDENCE.	14
Magnetometer Survey.	14
Surface Collections.	16
SUBSURFACE INVESTIGATIONS	21
Excavation Methods and Objectives.	21
Results of Probability Sampling.	22
Other Excavations.	23
Cultural Units	25
MATERIAL CULTURE.	31
Ceramics	31
Lithic Artifacts	33
Subsistence Data	38
Dating Samples	39
CONCLUSIONS	40
Chronology	40
Adaptation and Economy	40
Social Organization.	41
Summary.	43

	Page Number
APPENDIX A - GEOLOGY REPORT FOR RIDGE LINE CAMP	44
APPENDIX B - MAGNETOMETER REPORT FOR RIDGE LINE CAMP.	48
APPENDIX C - BOTANICAL REMAINS FROM RIDGE LINE CAMP	54
APPENDIX D - LITHIC REPORT FOR RIDGE LINE CAMP.	59
APPENDIX E - FAUNAL REMAINS FROM RIDGE LINE CAMP.	67
REFERENCES CITED.	70

LIST OF FIGURES

		Page Number
Figure 16.1	Topographic view of Ridge Line Camp showing spatial relationships of major cultural units.	3
Figure 16.2	Photograph of Ridge Line Camp prior to excavation, looking south.	4
Figure 16.3	Locations of selected sites contemporaneous with Ridge Line Camp	13
Figure 16.4	Site sampling plan, Ridge Line Camp.	15
Figure 16.5	SYMAP depicting surface distribution of flaked lithic artifacts, Ridge Line Camp	17
Figure 16.6	SYMAP depicting surface distribution of nonflaked lithic artifacts, Ridge Line Camp	19
Figure 16.7	SYMAP depicting surface distribution of ceramics, Ridge Line Camp.	20
Figure 16.8	Stratigraphic profile of probability square 32S, 36E, Ridge Line Camp.	24
Figure 16.9	Plan view of lithic concentration (Feature 1), Ridge Line Camp.	26
Figure 16.10	Plan view and profile of fireplace (Feature 2), Ridge Line Camp.	28
Figure 16.11	Plan view and profile of hearth (Feature 3), Ridge Line Camp.	30
Figure 16.12	Selected whole or nearly whole projectile points recovered at Ridge Line Camp	37
Figure 16.B.1	SYMAP depicting the magnetic field at Ridge Line Camp.	50
Figure 16.B.2	Line contour map depicting magnetic anomalies at Ridge Line Camp.	51

LIST OF TABLES

	Page Number
Table 16.1 Flora Identified at Ridge Line Camp During the 1979 Field Season	8
Table 16.2 Results of Probability Sampling, Ridge Line Camp.	23
Table 16.3 Summary of Ceramic Type Frequencies at Ridge Line Camp	32
Table 16.B.1 Magnetic Anomalies with Possible Archaeological Affiliations at Ridge Line Camp	52
Table 16.C.1 Botanical Remains from Ridge Line Camp.	56
Table 16.D.1 Lithic Analysis Data Summary for Ridge Line Camp, Flaked Lithic Tools	61
Table 16.D.2 Lithic Analysis Data Summary for Ridge Line Camp, Flaked Lithic Debitage.	62
Table 16.D.3 Lithic Analysis Data Summary for Ridge Line Camp, Nonflaked Lithic Tools.	63
Table 16.E.1 Faunal Taxa Identified at Ridge Line Camp	69

ABSTRACT

Investigations at Ridge Line Camp, Site 5MT2242, were undertaken during the 1979 field season of the Dolores Archaeological Program. The site is located in the Sagehen Flats Locality. Two firepits were discovered at the site, and flaked lithic, nonflaked lithic, and ceramic artifacts were recovered. The results of artifact analyses and a radio-carbon date of 3710 ± 90 years B.P. indicate that the site was occupied during the Archaic and Anasazi (Pueblo I, Pueblo II, and Pueblo III) time periods. No structures were found at Ridge Line Camp, suggesting that use of the area during both the Archaic and Anasazi periods was impermanent in character. Based on the artifacts collected, activities at the site may have included food procurement and/or processing, and flaked lithic tool manufacturing.

EDITOR'S PREFACE

This report describes the excavation of Ridge Line Camp (Site 5MT2242) and the results of analyses of the material remains from that site; it is included in the Dolores Archaeological Program report series for 1979. The author was no longer associated with the program when the report was reviewed and edited for submission; therefore, the Dolores Archaeological Program editorial staff assumes responsibility for the extensive alterations in text.

INTRODUCTION

Ridge Line Camp was investigated during the 1979 field season of the Dolores Archaeological Program (D.A.P.). One Archaic and two Anasazi components were identified on the basis of artifact analyses and radiocarbon dating results. The Archaic component belongs to the Great Cut Phase (3000 B.C.-A.D. 500) as defined by Kane [1]. The earliest Anasazi component dates to A.D. 775-800, which corresponds to the Dos Casas Subphase (A.D. 760-850) of the Sagehen Phase (A.D. 600-850). The second Anasazi component dates to A.D. 900-1050, which corresponds to and extends slightly beyond the Cline Subphase (A.D. 900-970) of the McPhee Phase (A.D. 850-970) (Kane [1]). Based on artifact analyses, it is believed that tool manufacturing and food procurement and/or processing may have been conducted at this limited activity site.

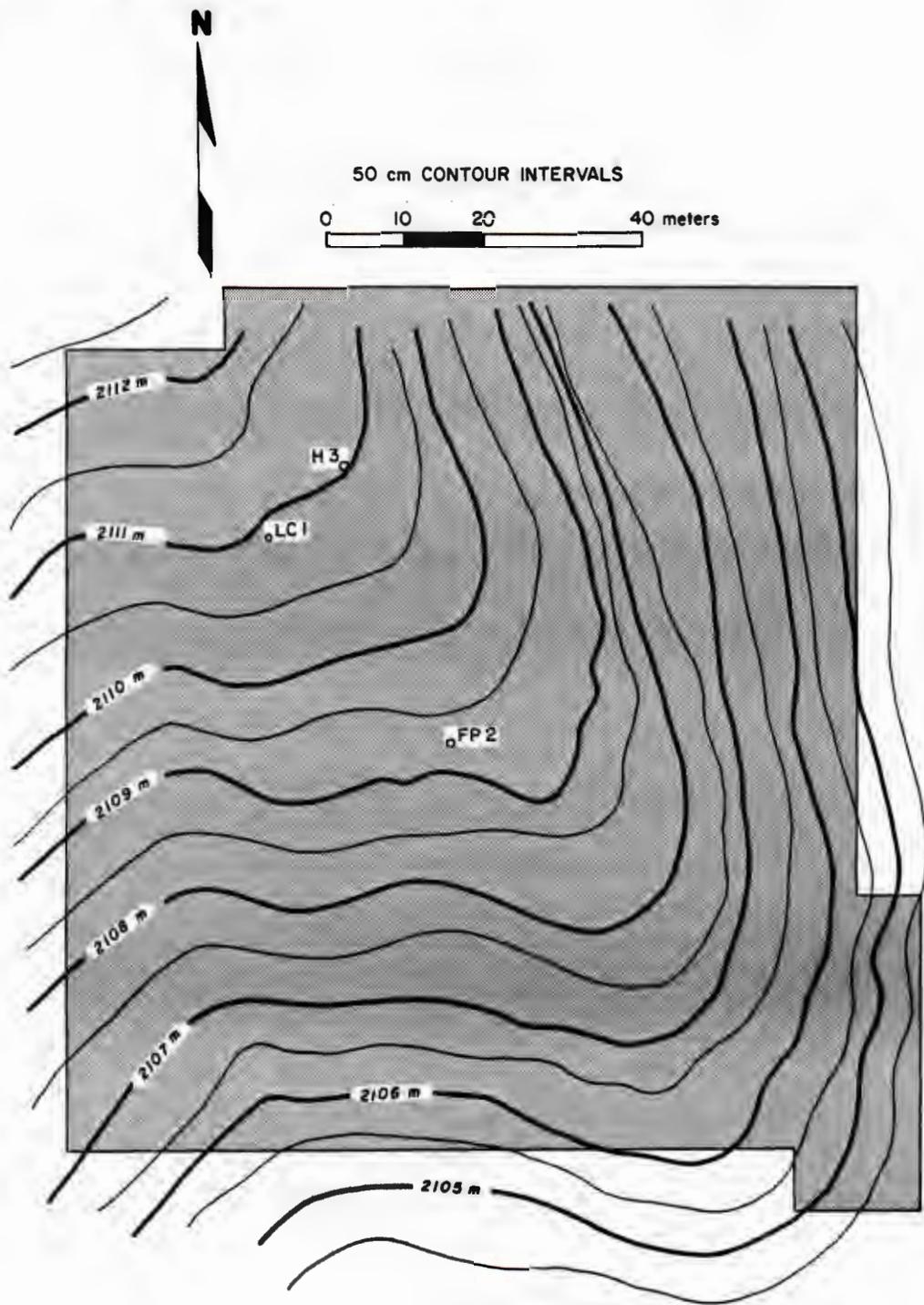
Acknowledgments

Fieldwork at Ridge Line Camp began on 6 June 1979 and was completed on 17 July 1979. Two hundred-eighty person days were spent investigating the site. Sincere gratitude for their work at Ridge Line Camp is extended to the Locality Supervisor, D.H. Greenwald; the assistant crew chief, M. Hovezak; and the following members of the D.A.P. field crew: D. Cifani, M. Kennedy, K. Kuckelman, B. Overturf, G. Pounders, and K. Wilson. Four members of the Youth Conservation Corps also participated in the investigation: D. Barr, B. Beck, E. Brown, and T. Maffety.

Discussion of the probability sample was contributed by Timothy A. Kohler. Senior Staff comments were provided by Kohler and Allen E. Kane.

Location

Ridge Line Camp consists of an extensive artifact scatter on a ridge overlooking Sagehen Marsh in Sagehen Flats Locality (Kane [1]). The site is located in the Northwest Quarter of the Northeast Quarter of Sec 36, T38N, R16W, in Montezuma County, Colorado. The Universal Transverse Mercator grid coordinates for the site are 4,154,640 mN, 715,410 mE. The elevation of the investigated portion of Ridge Line Camp ranges from 2105 to 2112 m above sea level (Figure 16.1). The location of the site - and most of the project area - is encompassed by the Trimble Point Quadrangle, Colorado, U.S.G.S. 7.5 Minute Series 1965 Topographic Map. A general view of Ridge Line Camp prior to excavation is shown in Figure 16.2.



EXPLANATION	
FIREPLACE	FP
HEARTH	H
LITHIC CONCENTRATION	LC
LIMITS OF INVESTIGATED AREA	

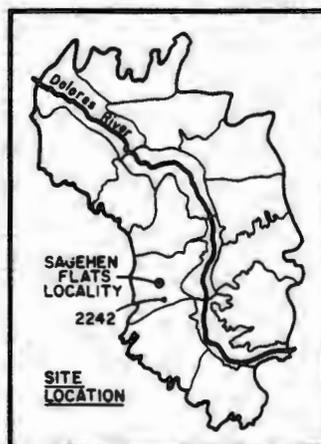


Figure 16.1 Topographic view of Ridge Line Camp showing spatial relationships of major cultural units.



Figure 16.2 Photograph of Ridge Line Camp prior to excavation, looking south (D.A.P. 007010).

ENVIRONMENTAL SETTING

Climate

Today, the climate of the project area can best be described as mild and semiarid, characterized by low precipitation and humidity, ample sunshine, and large daily temperature fluctuations. Climatic variations within short distances are ascribed to the frequent changes in topographic relief that occur in the area. The most noticeable climatic variations are increases in precipitation and decreases in temperature from the southwest to the northeast (Bureau of Reclamation [2]).

Most precipitation in Sagehen Flats Locality is obtained from summer thunderstorms and winter snows. The wettest months of the year are July, August, and October; the driest months are May, June, and November (Kane [3]).

Temperatures in the area can fluctuate rapidly and drastically, depending upon season, time of day, location, and elevation. The warmest month of the year is July; the coldest month is January. The mean annual temperature in the area is approximately 9°C (Siemer [4]). An annual average of 124 consecutive frost-free days was recorded at the United States Weather Bureau station in Yellowjacket, Colorado for the years 1964-1975 (Kane [3]). The first freeze usually occurs around 30 September; the last freeze usually occurs around 30 May (Bureau of Land Management [5:2-1]).

The major wind direction in the project area is from the southwest. For the most part, the winds are moderate with an average annual wind speed of 13 km per hour. However, stronger winds may occur during winter

and spring frontal systems, and in advance of summer thunderstorms (Bureau of Land Management [5]).

Geology

Ridge Line Camp is located on top of a prominent ridge in Sagehen Flats Locality. The south end of this ridge overlooks Sagehen Marsh. The site is located on the south toe of a dip slope coming off of the Dolores Anticline (Cline's Crest), and rests on three geologic strata: Dakota Sandstone, Sagehen Paleosol, and slope wash (Appendix A).

All drainage from Sagehen Flats Locality ultimately flows into the Colorado River. The largest tributary of the Colorado River in the project area is the Dolores River, located 1.9 km east of Ridge Line Camp. There are no perennial streams near Ridge Line Camp (Glaser [6]). One large arroyo is located 500 m east of the site. This arroyo contained a small amount of water during the time that the field crew worked at Ridge Line Camp. A smaller arroyo to the west of the site, draining much of the site area to the southeast, was dry during the fieldwork. Both of these arroyos drain south into Sagehen Marsh approximately 425 m from the site.

Sagehen Marsh currently contains water year round and supports numerous species of flora and fauna. Research is underway testing the prehistoric existence of the marsh. No springs or seeps have been recorded in the immediate area around Ridge Line Camp (Glaser [6]).

A detailed discussion of the geology of the project area is presented in Leonhardy [?].

Soils

Ridge Line Camp is situated on the Batterson-Gladel-Rock outcrop complex. Soils found within 100 m of the site include the Bowdish-Pulpit complex to the north and the Sagehen Paleosol to the south, east, and west. Soils of the Witt series are suggested to have the best agricultural potential of soils in the project area (Leonhardy [7]); however, none are present in the immediate site area. The next best soil type in terms of inferred prehistoric agricultural potential appears to be Hesperus Loam. The nearest Hesperus Loam is located approximately 500 m east of the site (Leonhardy [8]).

Fauna

Modern fauna noted by the field crew at Ridge Line Camp include cottontail rabbit (Sylvilagus spp.), black-tailed jackrabbit (Lepus californicus), marsh hawk (Circus cyaneus), turkey vulture (Cathartes aura), and numerous small birds, insects, and lizards. Rodent holes were noted in the southern portion of the site where sediments had accumulated. Refer to Emslie [9] for a complete discussion of fauna in the project area.

Flora

The flora at Ridge Line Camp was recorded during the 1979 summer field season by the Environmental Studies crew. Table 16.1 lists the flora recorded at that time. A discussion of project area flora is presented in Bye [10].

Table 16.1 Flora Identified at Ridge Line Camp
During the 1979 Field Season (Page 1 of 2)

Common Name	Scientific Name
<u>Herbs</u>	
aster	<u>Aster</u> sp.
no name available	<u>Ceratocephala testiculata</u>
beardtongue	<u>Penstemon linarioides</u>
birdbeak	<u>Cordylanthus wrightii</u>
death camas	<u>Toxicoscordion paniculatum</u>
fleabane (Coulter's daisy)	<u>Erigeron</u> sp.
prickly pear	<u>Opuntia polycantha</u>
prickly pear	<u>Opuntia douglasii</u>
peppergrass	<u>Lepidium</u> sp.
rabbitbrush	<u>Chrysothamnus</u> sp.
sow-thistle (milk-thistle)	<u>Sonchus oleraceus</u>
Utah thistle	<u>Cirsium arvense</u>
wild buckwheat	<u>Eriogonum lonchophyllum</u>
wild onion	<u>Allium</u> sp.
yarrow	<u>Achillea lanulosa</u>
common comandra	<u>Comandra umbellata</u>
western salsify	<u>Tragopogon dubius</u>
pinnate tansy mustard	<u>Descurania pinnata</u>
sawatch knotweed	<u>Polygonum sawatchense</u>
tumble mustard	<u>Sisymbrium altissimum</u>
larkspur	<u>Delphinium</u> sp.
milk vetch	<u>Astragalus</u> sp.
mullein	<u>Verbascum thapsus</u>

Table 16.1 Flora Identified at Ridge Line Camp
During the 1979 Field Season (Page 2 of 2)

Common Name	Scientific Name
<u>Herbs (cont.)</u>	
clover	<u>Trifolium</u> sp.
common dandelion	<u>Taraxacum officianale</u>
<u>Tree-shrub</u>	
big sagebrush	<u>Artemisia tridentata</u>
Utah juniper	<u>Juniperus osteosperma</u>
pinyon	<u>Pinus edulis</u>
cliff fendlerbush	<u>Fendlera rupicola</u>
<u>Grass</u>	
cheat grass	<u>Bromus tectorum</u>
Indian ricegrass	<u>Oryzopsis hymenoides</u>
bottlebrush squirreltail	<u>Sitanion hystrix</u>

Potential Resources

Clay Sources

Weathered, fine-grained shales or claystones are a good source of raw clay material. Mancos Shale, which contains clays suitable for ceramic manufacture, is today readily available in the Sagehen Flats Locality (W. Lucius, personal communication). Other nearby potential sources include the Burro Canyon and Morrison formations. Both of these formations have shale and claystone interbeds found along the Dolores River valley and are exposed in Sagehen Flats Locality (Glaser [6]).

Flaked Lithic Sources

Today the closest known flaked lithic raw material sources are the canyon walls of the Dolores River valley and river gravels found immediately east of the locality. These sources from the Burro Canyon and Morrison formations provide a wide variety of fine-grained, silicious materials, such as chert and banded chalcedony, as well as coarse-grained orthoquartzites (Glaser [6]).

Nonflaked Lithic Sources

Materials for nonflaked lithic artifacts are quite varied and range from thick-bedded, medium-grained sandstone to conglomerate sandstone. A possible source for nonflaked lithic materials is the Dakota Sandstone which outcrops on the site itself. The Dolores River valley and associated river terraces are also probable sources for river cobbles used for manos and hammerstones (Glaser [6]).

Historic Land Use

With the exception of grazing, very little is known about historic land use at Ridge Line Camp (D. Duranceau, personal communication). Ridge Line Camp is located in an area where bedrock outcrops do not permit plowing for cultivation. Bedrock is exposed at or near the surface in the area of higher elevation, so that mechanized farming would be difficult. The building of County Road X and the fence that parallels the road have probably disturbed the northern portion of the site. During the time that the field crew worked at Ridge Line Camp, the site area was used by hunters to gain access to Sagehen Marsh.

SOCIAL SETTING

Artifact analyses and a radiocarbon age of 3710 + 90 years B.P. from Feature 3 suggest that Ridge Line Camp has both Archaic (Great Cut Phase) and Anasazi (Sagehen and McPhee phases) components. This section deals only with sites believed to have Archaic components; for a discussion of Sagehen and McPhee phase sites in Sagehen Flats Locality, refer to Greenwald [11].

Eight sites with Great Cut Phase components are located within 1 km of Ridge Line Camp (Figure 16.3). Site 5MT2236 and Site 5MT4513 have been test excavated, Site 5MT4682 has been intensively surface collected, and the remaining sites have been recorded during survey operations. Both of the excavated sites, like Ridge Line Camp, are multiple-component, Archaic-Anasazi sites, and both are interpreted as having served as limited activity and/or base camp sites.

Surface-stripping operations by a grader at Site 5MT2236 uncovered four shallow, basin-shaped, rock-lined fireplaces (Chenault [12]). Test excavations at Site 5MT4513 revealed five slab-lined fireplaces, and the artifact assemblage indicates that food processing and flaked lithic tool manufacture took place at the site (Greenwald [13]).

Another Archaic site for which information is currently available is Site 5MT2202, located just over 1 km southwest of Ridge Line Camp (Figure 16.3). Grader operations at this site exposed a shallow, basin-shaped, stone-lined fireplace. It has been suggested that Site 5MT2202 was a resource procurement and processing locus during the Archaic Tradition (Schlanger [14]).

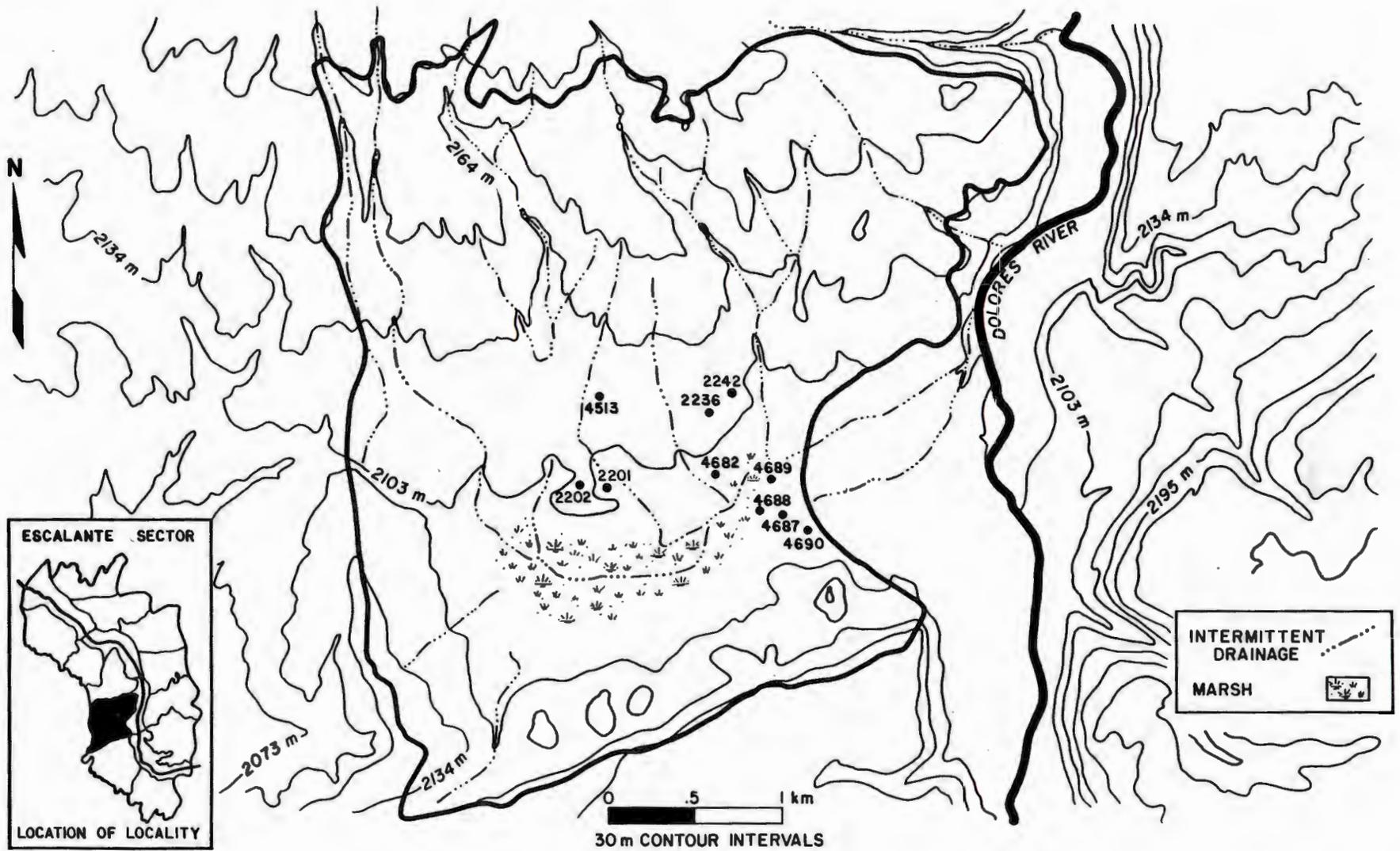


Figure 16.3 Locations of selected sites contemporaneous with Ridge Line Camp.

SURFACE EVIDENCE

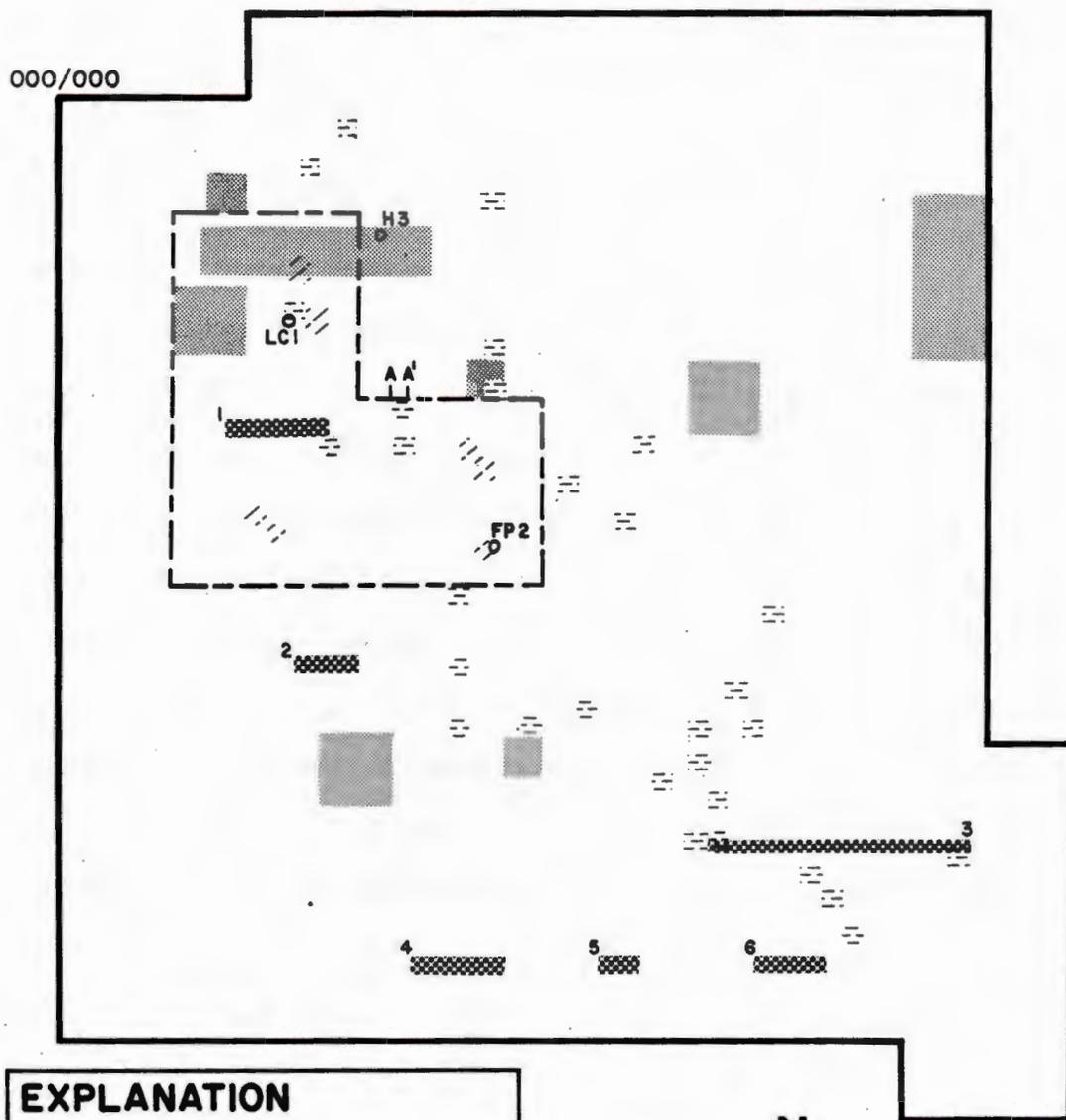
Ridge Line Camp was first surveyed on 5 November 1972 as part of the Dolores River Project survey (Breternitz and Martin [15]). The site was described as an area of scattered flakes, sherds, and manos on the slope above Sagehen Marsh.

During the 1979 investigations by the D.A.P., the long axis of Ridge Line Camp was found to run northwest-southeast, following the natural orientation of the ridge. Investigations at the site were restricted primarily to an approximate 100 by 100 m area where the major portion of the artifact concentration was located (Figure 16.4). It was recognized, however, that the artifact scatter did extend farther down the ridge, especially to the southeast.

The following sections provide a summary of the magnetometer survey and a description of the intensive surface collection conducted at Ridge Line Camp.

Magnetomer Survey

The magnetometer survey of Ridge Line Camp was completed in the spring of 1979; Figure 16.4 shows the limits of the magnetometer grid. The magnetometer map compiled from this survey indicated the presence of eight anomalies which were ranked on the basis of potential archaeological significance (i.e., suspected correlation with subsurface archaeological remains); five of these anomalies were tested (see subsurface investigations section of this report and areas keyed as "magnetometer sampling" on Figure 16.4). This map and a discussion of the magnetometer survey is given in Appendix B; refer to Huggins and Weymouth [16] for a general discussion of magnetometer studies.



EXPLANATION	
FIREPLACE	FP
HEARTH	H
LITHIC CONCENTRATION	LC
PROBABILITY SAMPLING	
BLADED AREA	
MAGNETOMETER SAMPLING	
MAGNETOMETER GRID	
LIMITS OF INVESTIGATED AREA	
TEST TRENCH	



Figure 16.4 Site sampling plan, Ridge Line Camp. AA' corresponds to AA' in Figure 16.8.

Surface Collections

Following the magnetometer operation, Ridge Line Camp was resurveyed to more firmly establish the site boundaries. This revealed the site to be much larger than had been determined during the initial survey. In particular, the south and southeast portions of the site were found to extend much farther than originally defined. An arbitrary 100 by 100 m grid was established to encompass the area of greatest artifact concentration; this grid was later expanded to accommodate additional surface collection units (Figure 16.4). The intensive surface collection of Ridge Line Camp took place in several stages. First, the area from 12S to 100S and from 12E to 100E was collected in 4 by 4 or 8 by 8 m units, depending upon artifact density. Based on the numbers of flaked lithic artifacts recovered from these units, the grid squares were ranked into "density areas" which were used to define the area of highest artifact concentration. This high density area followed the crest of the ridge in a northwest-southeast direction (Figure 16.5); most subsequent excavation was confined to this area. After excavation of the various test units was begun, the remainder of the gridded 100 by 100 m area, plus additional squares along the northern and eastern edges of the grid, were collected in either 4 by 4 or 8 by 8 m units.

Flaked lithic artifacts were the most abundant artifacts recovered from the surface at Ridge Line Camp (Figure 16.5). There were two areas of flaked lithic artifact concentration, one in the northwestern portion of the gridded area, and one in the southeastern portion of the grid (Figure 16.5). It is also apparent from the surface distribution map that the density of flaked lithic artifacts generally increased to the southeast.

Nonflaked lithics were the second most abundant type of artifact recovered during the surface collection at Ridge Line Camp (Figure 16.6). The nonflaked lithic artifacts were also distributed from northwest to southeast, following the ridge top. In addition, there was a concentration of nonflaked lithic artifacts on the surface in the northeast section of the site. There was a noticeable lack of nonflaked lithic artifacts on the surface in the southwest section of the site.

Sixty ceramic artifacts were recovered from the surface at Ridge Line Camp. The majority of the ceramic artifacts recovered from the surface were collected from the extreme southeast corner of the site (Figure 16.7).¹

¹The surface collection limits shown in Figures 16.5, 16.6, and 16.7 differ from those indicated on the site sampling plan (Figure 16.4) due to constraints inherent in the computer file. Because the top row of grid squares shown in Figure 16.4 was assigned a south grid coordinate of less than zero, it could not be printed as a separate line on the SYMAPs. The values for the squares in this row were incorporated into the zero south line on the surface distribution maps.



Figure 16.6 SYMAP depicting surface distribution of nonflaked lithic artifacts, Ridge Line Camp (D.A.P. 121010).

SUBSURFACE INVESTIGATIONS

Excavation Methods and Objectives

Test excavations at Ridge Line Camp were conducted to locate subsurface features and structures, and to determine subsurface artifact densities and distributions. Testing included the hand excavation of a series of 2 by 2 m probability squares and several 2 by 2 m squares in the vicinity of selected magnetometer anomalies. In addition, six test trenches were excavated with the backhoe and selected portions of the site were bladed in an effort to locate subsurface features (Figure 16.4). Bedrock was encountered at varying depths across the site (in some cases, only 1 cm below modern ground surface, and in others, 60 cm below the surface).

All 2 by 2 m squares were excavated in arbitrary 20 cm levels using shovels, trowels, and mattocks, and fill was dry-screened through one-quarter or one-eighth inch mesh. Each level was assigned a separate Field Specimen (FS) number. Field maps were made of each level of the test units and all horizontal and vertical measurements were placed on these maps. Bulk soil and pollen samples were collected from the fireplace (Feature 2) and the hearth (Feature 3); additional bulk soil samples were collected from selected probability and magnetometer squares. Results of the bulk soil analysis are presented in Appendix C. None of the pollen samples were analyzed because of the likelihood of contamination due to the pedoturbative processes which had occurred at the site, and because the contexts from which they were taken were not comparable to other sampled contexts on the D.A.P.

Results of Probability Sampling

After completion of the surface collection, Ridge Line Camp was sampled at a 3 percent rate by excavating a simple random sample of 30 2 by 2 m grid units from the area of highest lithic artifact concentration (Figure 16.4). This procedure was designed to collect a representative sample of the materials at the site, and to enable population estimates for those materials (Kohler [17]). The sample was not stratified and the squares to be excavated were selected using a table of random numbers. Fill from all probability squares was screened through one-quarter or one-eighth inch mesh.

Table 16.2 shows the population estimates for each major material type at the site, the 95 percent confidence intervals around those point estimates, and the percent of probability excavation units in which each artifact class is represented. It should be emphasized that these material population estimates apply only to the area within the sampling frame, which is a subset of the area surface collected, which is in turn a subset of the area of total scatter. Flaked lithic debitage is by far the most widely distributed and abundant material type, followed by flaked lithic tools. The ratio of flaked lithic tools to debitage (0.015) seems quite low, especially compared to project area Anasazi habitations where this ratio is typically ten times higher. The high proportion of projectile points in the flaked lithic tool assemblage (0.14) is also noteworthy, but must be interpreted cautiously due to the large confidence interval around the point estimates for both populations. Finally, the ratio of flaked lithic tools plus debitage to all ceramics (51.6) is much higher than at Anasazi habitations in the Dolores valley, which are typically below 1.0.

Table 16.2 Results of Probability Sampling, Ridge Line Camp

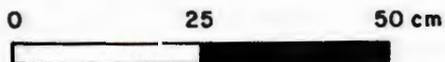
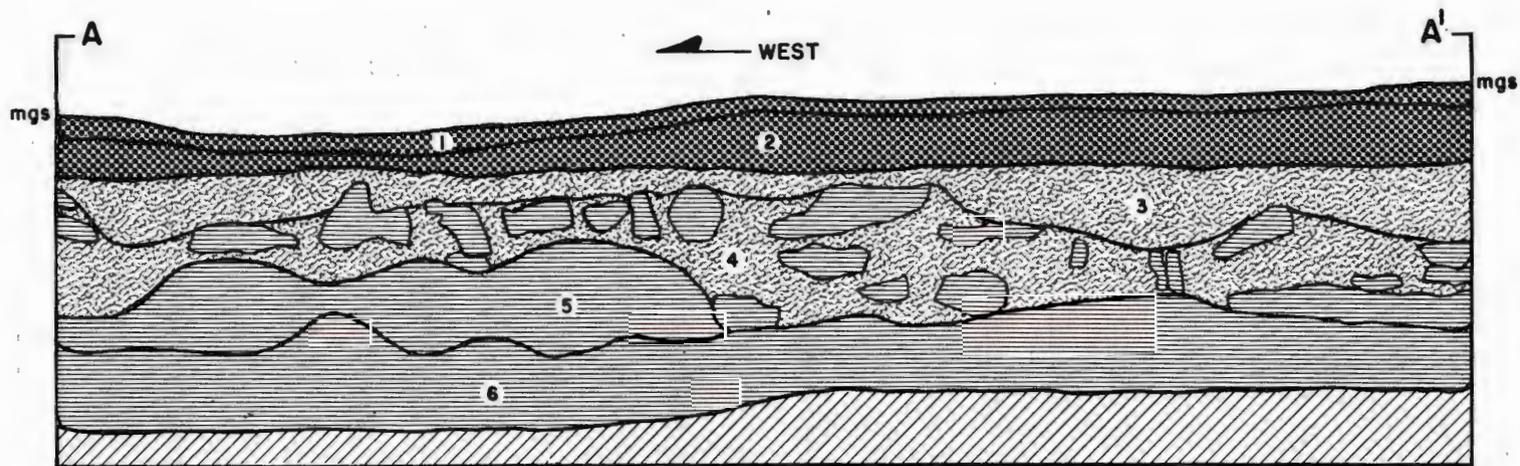
	Percent of Prob- ability Units in which Item Occurred	Population Estimate	95 Percent Confidence Interval
Jar sherds	47	1,029	+ 564
Bowl sherds	3	67	- 134
Nonflaked lithic tools	30	350	266
Flaked lithic tools (all)	63	839	423
Projectile points	17	117	112
Flaked lithic debitage	100	55,701	15,268

More detailed interpretation of the lithic assemblage, based on total site collection, is presented in Appendix D.

A stratigraphic profile of probability square 32S, 36E is shown in Figure 16.8. Six strata were identified in this profile. Strata 1 and 2 consisted of silt, Strata 3 and 4 of silty sand, and Strata 5 and 6 of sandstone bedrock. Distinctions between strata of the same textural class were made on the basis of compaction and inclusions: Stratum 2 was more firmly compacted than Stratum 1; Stratum 4 had sandstone gravel and cobble inclusions, whereas Stratum 3 had none; and the sandstone of Stratum 6 was more consolidated than that of Stratum 5.

Other Excavations

Magnetometer Anomalies 3a, 3b, 4b, and 5a (Appendix B) were tested with a series of 2 by 2 m squares (Figure 16.4). With the exception of Anomaly 4b, where Feature 2 was located, no features were associated with these anomalies. In all other cases, however, substantial amounts of burned sagebrush were found directly below the surface. It is suggested that these areas of burned sagebrush were the sources of the magnetometer anomalies.



EXPLANATION	
MODERN GROUND SURFACE	mgs
SILT	
SILTY SAND	
SANDSTONE	
UNINVESTIGATED	
STRATUM NUMBER	(N)

Figure 16.8 Stratigraphic profile of probability square 32S, 36E, Ridge Line Camp. AA' corresponds to AA' in Figure 16.4. Refer to text for discussion of Strata 1-6.

Bladed areas at Ridge Line Camp included Magnetometer Anomaly 5b, part of Anomaly 3b, areas adjacent to these anomalies, and seven sandstone concentrations (Figure 16.4). The latter were not found to be associated with any cultural features. The grader uncovered a small hearth (Feature 3) in an area of the site which had not been included in the magnetometer survey. No other subsurface features and no structures were uncovered by mechanical means.

Six test trenches were excavated with a backhoe in order to study site stratigraphy (Figure 16.4). With the exception of an occasional flaked lithic artifact, no subsurface cultural material was found. Although the trench profiles were not mapped, strata characteristics were recorded. This information is on file at the D.A.P. Laboratory, and is incorporated into Appendix A.

Cultural Units

The only cultural units found at Ridge Line Camp were three features. Feature 1, a lithic artifact cluster located in the northwest portion of the site (Figure 16.1), was discovered during excavation of a 2 by 2 m probability square. Feature 2, a fireplace located in the center of the site, was found during the investigation of Magnetometer Anomaly 4b. Feature 3, a hearth located approximately 13 m northeast of Feature 1, was uncovered during blading operations.

Lithic Concentration (Feature 1)

Dimensions:

Length:	80 cm
Width:	25 cm

Feature 1, a lithic concentration, consisted of three one-hand manos and one thin uniface (Figure 16.9). The concentration of artifacts was

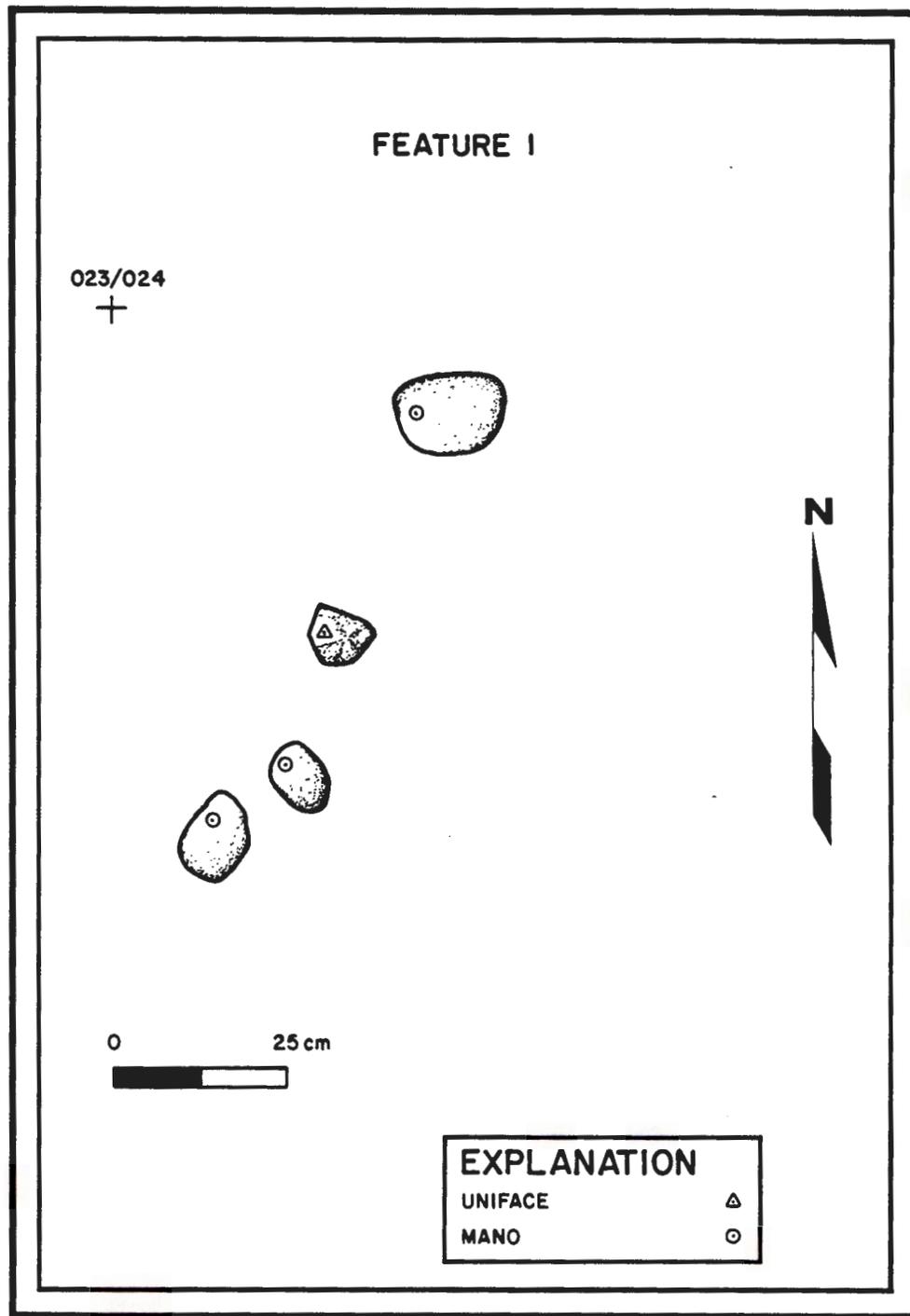


Figure 16.9 Plan view of lithic concentration (Feature 1), Ridge Line Camp.

approximately 15-18 cm below the modern ground surface. No bulk soil or pollen samples were collected from this feature. The artifacts were exposed with a brush and trowel, photographed, mapped, and measured in situ. The soil around the artifacts was brushed and dampened to check for soil discolorations or disturbances that might have suggested a pit boundary or a use surface. No such indications were discovered.

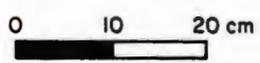
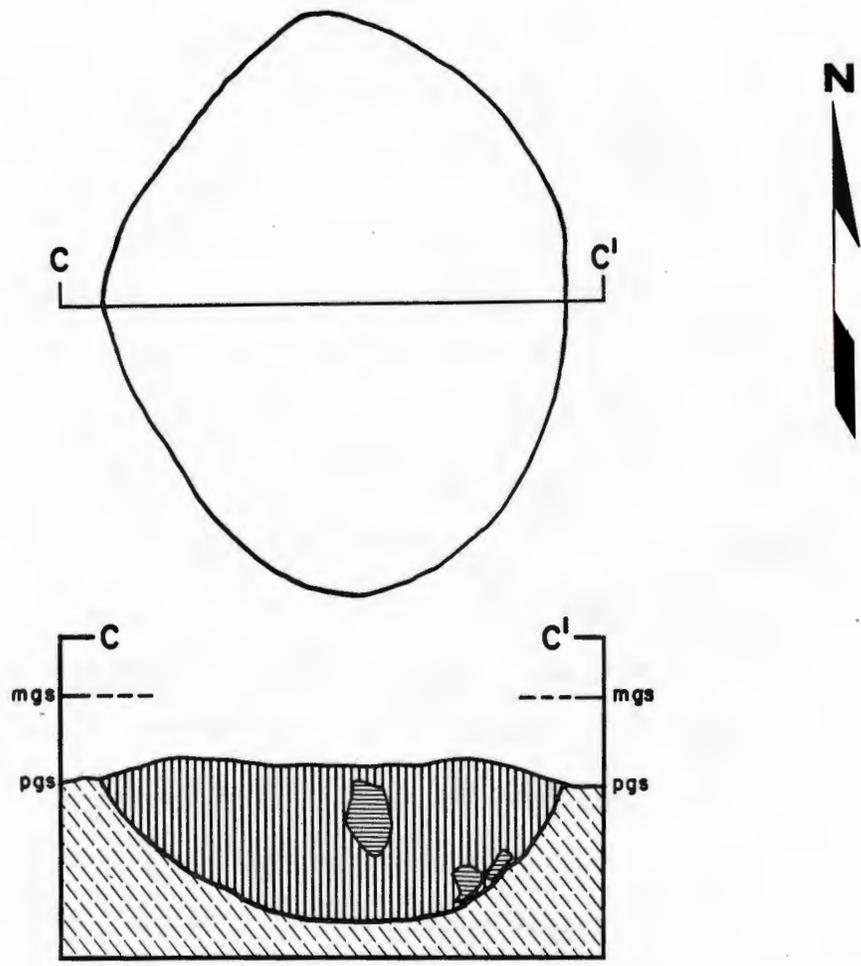
Fireplace (Feature 2)

Dimensions:

Length:	60 cm
Width:	50 cm
Depth:	18 cm

This basin-shaped fireplace had been excavated into the hard deteriorating red sandstone layer which overlies the Dakota Sandstone. Figure 16.10 shows Feature 2 in plan and profile. Numerous cracked cobbles and compacted burned soil comprised the fill of the fireplace. With the exception of a small central pedestal portion, the fill was burned throughout. The fireplace was partially stone-lined, although this is not evident along the east-west profile line. In the northern section, slabs of rock appeared to have been intentionally placed on sterile soil. Two one-hand manos and a metate fragment were removed from the fill.

The fireplace and the surrounding grid squares were excavated with a trowel and small brush. Bulk soil and pollen samples were collected from feature fill; additional control samples were collected from surrounding fill. There was no carbonized material which could be collected for a radiocarbon sample and it was determined by the Special Studies crew that the feature was not suitable for archaeomagnetic sampling. The surface which corresponded to the depth at which the fireplace was first defined



EXPLANATION	
SANDSTONE	
ASH	
NATURAL DEPOSIT	
PREHISTORIC GROUND SURFACE	pgs
MODERN GROUND SURFACE	mgs

Figure 16.10 Plan view and profile of fireplace (Feature 2), Ridge Line Camp.

was identified as prehistoric ground surface. This surface was inspected for evidence of structural remains and signs of additional use. No such indications were discovered.

Hearth (Feature 3)

Dimensions:

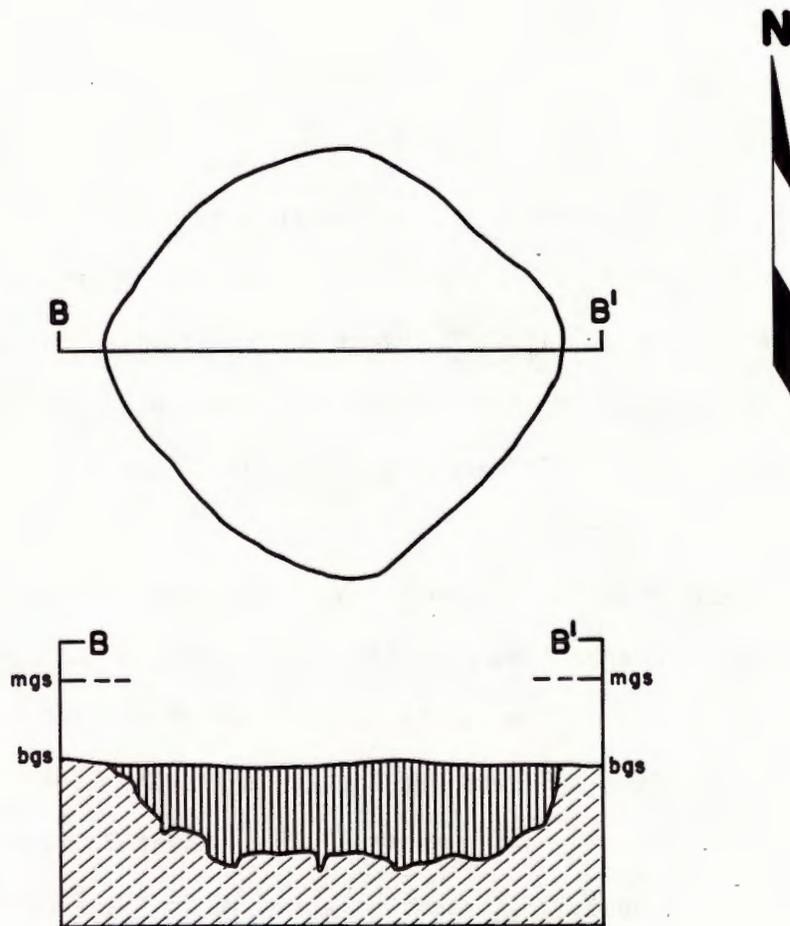
Length:	60 cm
Width:	55 cm
Depth:	12 cm

Feature 3 was a basin-shaped hearth that had also been excavated prehistorically into the deteriorated sandstone layer overlying the Dakota Sandstone (Figure 16.11). The hard, deteriorated sandstone formed the base of the hearth. When the hearth was exposed by the grader, the upper portion was removed. As excavated, the top of the hearth was 20 cm below modern ground surface.

This hearth was excavated in the same manner as Feature 2. Only a small amount of carbonized material was present in the fill; this was removed for a radiocarbon sample (X-3876) which yielded a date of 3710 \pm 90 years B.P. It was determined that this hearth, like Feature 2, was not suitable for archaeomagnetic dating. The excavated hearth was then photographed, mapped, and measured, and bulk soil and pollen samples were collected.

The fill of the hearth was composed of burned soil and small amounts of ash and carbonized material. Seven flaked lithic debitage items were recovered from hearth fill.

015/034
+



0 15 30 cm

EXPLANATION	
MODERN GROUND SURFACE	mgs
BLADED GROUND SURFACE	bgs
ASH, CHARCOAL, BURNED SOIL	
NATURAL DEPOSIT	////

Figure 16.11 Plan view and profile of hearth (Feature 3), Ridge Line Camp.

MATERIAL CULTURE

Material collections from Ridge Line Camp totaled 5510 artifacts, including 93 ceramic items, 162 flaked lithic tools, 5028 pieces of flaked lithic debitage, and 227 nonflaked lithic artifacts. The majority (67.6 percent) of the artifacts were recovered from the surface of the site, a fact which may influence the characteristics of the collection.

Ceramics

Analysis of ceramic materials recovered from Ridge Line Camp suggests at least two different periods of use during the Anasazi period. The ceramic date ranges presented in this section are taken from Breternitz et al. [18], with some adjustments based on the results of D.A.P. ceramic analysis. The D.A.P. analysis system is described in Lucius [19].

Ceramic frequencies for Ridge Line Camp are listed by general provenience in Table 16.3. The majority (86.0 percent) of the ceramic material recovered from the site consists of Early Pueblo Gray sherds which can be dated only very generally to A.D. 600-900. The Early Pueblo White, Early Pueblo Red, and Chapin Gray sherds in the assemblage also date to this time period. However, the 1:3 ratio of Moccasin Gray to Chapin Gray in the assemblage suggests a range of A.D. 775-800, and the Mancos Corrugated rim sherd and corrugated body sherds date to A.D. 900-1050.

The majority of the ceramics recovered from the surface were located in the southeast portion of the site (Figure 16.7). The surface ceramics are all representative of the earlier, pre-A.D. 900, Anasazi component. In addition, sherds of this earlier Anasazi component were recovered from subsurface levels 1 and 2 in excavated units in the southeast portion of

Table 16.3 Summary of Ceramic Type Frequencies at Ridge Line Camp

Ware Traditional Type	Surface Collection		Excavated Units		Total Site	
	N	%Ct	N	%Ct	N	%Ct
<u>Mesa Verde Gray Ware</u>						
Chapin Gray	3	5.0			3	3.2
Moccasin Gray			1	3.0	1	1.1
Early Pueblo	53	88.3	27	81.8	80	86.0
Mancos Corrugated			1	3.0	1	1.1
Corrugated body sherds			2	6.1	2	2.2
<u>Mesa Verde White Ware</u>						
Early Pueblo	3	5.0	2	6.1	5	5.4
<u>Mesa Verde Red Ware</u>						
Early Pueblo	1	1.7			1	1.1
Total	60	100.0	33	100.0	93	100.0

the site. The two corrugated body sherds and one Mancos Corrugated rim representing the later component were recovered from Level 1 of a test square in this area, indicating that the cultural materials in the southeast portion of the site may have been mixed as a result of downslope wash.

Lithic Artifacts

Lithic artifacts were the most numerous artifacts recovered from Ridge Line Camp. Flaked lithic tools, flaked lithic debitage, and nonflaked lithic tools were analyzed as separate artifact classes (Appendix D). On the basis of lithic artifact profiles generated during preliminary analysis, Ridge Line Camp is believed to be a mixed Archaic-Anasazi site. C. Phagan [20] has generated profiles characteristic of each lithic artifact class for sites which have a known or strongly suspected Archaic component, sites known to be Anasazi, and all D.A.P. excavated and bladed sites. Comparisons among the profiles suggest that there is a measurable difference between the artifact assemblages recovered from sites with probable Archaic components and the assemblages recovered from Anasazi sites. Profiles of the flaked lithic tools, flaked lithic debitage, and nonflaked lithic tools recovered from Ridge Line Camp were calculated and compared to those calculated by Phagan (Appendix D; Tables 16.D.1, 16.D.2, 16.D.3). The comparison suggests that, on a site-wide basis, the lithic artifact assemblage at Ridge Line Camp resembles an Archaic more than an Anasazi assemblage. It is suggested that the majority of the assemblage might be associated with Feature 3, which yielded a radiocarbon date of 3710 ± 90 years B.P.; however, this cannot be conclusively demonstrated.

The analyses of the flaked lithic tools and debitage suggest that fairly advanced stages of tool manufacturing might have occurred at Ridge Line Camp. It is likely (especially during the Great Cut Phase), that prepared blanks or preforms of nonlocal and local materials were processed at the site.

Flaked lithic artifact densities were highest in the southeastern portion of the site. However, it is important to note that the southeastern portion of the site is approximately 7 m lower in elevation than the northwestern portion of the site (Figure 16.1). With this difference in elevation, some displacement of artifacts could be expected, probably due to erosion. Assuming that erosion had occurred at the site, it would be expected that the lighter, less dense artifacts would be transported downslope. Indeed, the average weight for artifacts in the southern section of the site is less than the average weight for artifacts in the northern section, and a greater total number of artifacts was also noted in the southern section.

Flaked Lithic Tools

A total of 162 flaked lithic tools was recovered from Ridge Line Camp (Appendix D, Table 16.D.1). The majority (84.0 percent) of the flaked lithic tools were recovered from modern ground surface. The flaked lithic tool profile indicates that there is no substantial difference between those flaked lithic tools recovered from the surface and those recovered from subsurface proveniences.

Frequency counts of flaked lithic tools by grain size indicate that the majority of the tools are of very fine grained materials (58.6 percent), followed by a high occurrence of microscopic-grained materials (35.8 percent). The remaining items are of fine- and medium-grained

materials (4.3 and 1.2 percent, respectively). It is currently believed that some of the microscopic-grained lithic materials are not found in the project area (C. Phagan, personal communication).

Slightly less than half (45.4 percent) of the flaked lithic tools are complete. The preliminary analysis indicates that there is a high occurrence of medial and distal fragments with one-third to one-half of the artifact still remaining, but not distinguishable as to the proximal or distal portion.

The most common morpho-use category of flaked lithic tools recovered from Ridge Line Camp is the biface, representing 25.3 percent of the assemblage. Chopper-scrapers are the next most frequent artifact type (20.4 percent). Projectile points (14.8 percent), utilized flakes (13.0 percent), thin unifaces (11.1 percent), and thick unifaces (9.3 percent) represent the next largest groups. Specialized forms, including four unifacially worked graters and one bifacially worked grater, make up 3.1 percent of the assemblage. It is notable that cores (1.9 percent) are essentially lacking from the assemblage. Two items (1.2 percent) were classified as indeterminate in terms of morpho-use form.

A total of 24 projectile points was recovered from Ridge Line Camp. The majority (19 or 79.2 percent) were collected from modern ground surface. With the exception of several possible Archaic points in the northeast, and several corner-notched Anasazi points in the southeast, the projectile points were fairly evenly distributed across the site. Forty-two percent of the projectile points are so fragmentary that no cultural affiliation can be determined. Six of the projectile points may be associated with the Archaic period (Irwin-Williams [21], Holmer [22]) however, these artifacts are also fragmentary, making any such cultural

assignment tentative. Eight of the projectile points might have been associated with an Anasazi utilization of the area. The morphology of these projectile points seems to indicate a range in time from Pueblo I-Pueblo III (Hayes and Lancaster [23]). Selected projectile points from Ridge Line Camp are shown in Figure 16.12.

Flaked Lithic Debitage

Flaked lithic debitage represents the most numerous (5028 pieces; 91.3 percent of the total artifacts) artifact class recovered from Ridge Line Camp (Appendix D, Table 16.D.2). The majority (66.3 percent) of the debitage was recovered from the surface of the site. Analysis of the debitage indicates that 55.3 percent of the items are of very fine grained materials, and 40.4 percent are of microscopic-grained materials. These percentages for grain size are consistent with those noted for the flaked lithic tools. Cortex is lacking on 94.2 percent of the debitage items. This lack of cortex may indicate that these items reflect advanced stages in the tool manufacturing sequence. Only six debitage items are of obsidian (a resource not geologically available in the project area). The mean weight of debitage items is 1.41 grams.

Nonflaked Lithic Tools

Nonflaked lithic tools comprise 4.1 percent of the total artifacts recovered from Ridge Line Camp (Appendix D, Table 16.D.3). Of the 227 items collected, 192 (84.6 percent) were recovered from modern ground surface and 35 (15.4 percent) were recovered from subsurface proveniences. The majority (141 or 62.1 percent) of the nonflaked lithic tools were classified as indeterminate in terms of morpho-use form. The high percentage of items classed as indeterminate is undoubtedly due to the fact that 61.2 percent of the nonflaked lithic tools are small fragments.

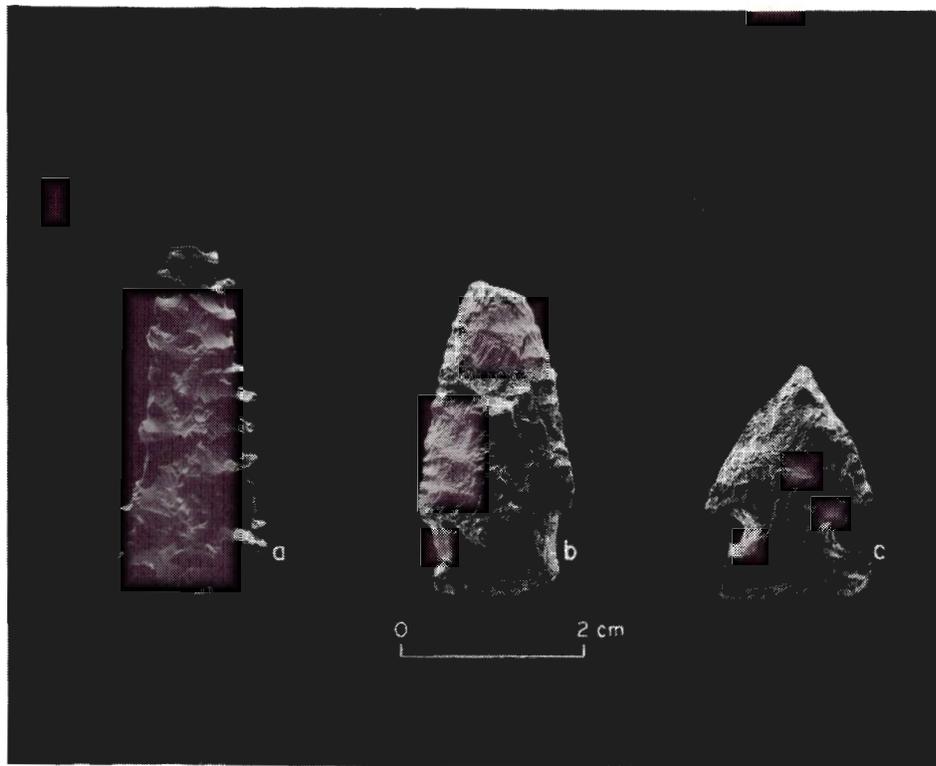


Figure 16.12 Selected whole or nearly whole projectile points recovered at Ridge Line Camp: (a) from original survey collection; (b) and (c) from intensive surface collection (D.A.P. 116501).

Thirty-nine tools (17.2 percent) were recognizable as manos, and 42 (18.5 percent) were classified as metates (14.1 percent as unspecified, fragmentary metates, 2.6 as slab metates, and 1.8 as trough metates). The high percentage of fragmentary tools also affects assessment of production input. Seventy percent of the nonflaked lithic artifacts were classified as indeterminate in terms of production technology, 15.9 percent were classified as original nodule, 4.0 percent as minimally shaped, and 10.1 percent as well-shaped. The majority (92.5 percent) of the nonflaked lithic tools are of medium-grained materials.

The four trough metates were recovered from modern ground surface in the northwest portion of the site. It is notable that this same portion of the site had the greatest frequency of tools recovered from subsurface excavations. Since it might be expected that nonflaked lithic artifacts would not be as directly affected by downslope movement as either the flaked lithic or ceramic artifacts, it is possible that these tools might be close to their original depositional locations. It is also possible that these nonflaked tools had been buried with topsoil, especially since County Road X cuts through Sagehen Flats Locality just to the north of this portion of the site. It is significant that 41 percent of the tools from subsurface proveniences in the northwest portion of the site are manos. This is the largest grouping of manos recorded anywhere on the site.

Subsistence Data

Animal Bone

Animal bone from Ridge Line Camp was analyzed by S. Emslie of the Center for Western Studies (Appendix E). Of the 25 bones recovered at the site, 18 are of unidentifiable mammals. Three black-tailed jackrabbit

bones, three cottontail rabbit bones, and one domesticated sheep bone were also recovered. It is likely that many of the faunal remains from Ridge Line Camp represent modern, intrusive materials.

Macrobotanical Remains

Eight bulk soil samples, associated with the two firepit features (Features 2 and 3) and one probability square, were analyzed from Ridge Line Camp (Appendix C). There was minimal recovery of macrobotanical remains and the majority of remains have been assessed as modern, intrusive contaminants. Analysis of these samples did not provide any data concerning the subsistence resources of the prehistoric occupants. From the presence of charred fragments of Quercus gambelii, unidentified gymnosperm wood, and wood identified only to the genus Pinus in the firepit features, it may be inferred that these taxa were utilized for fuel.

Dating Samples

The only dating sample collected at Ridge Line Camp was the radiocarbon sample taken from the fill of the hearth (Feature 3). This sample yielded a radiocarbon age of 3710 ± 90 years B.P. and aided in the recognition of an Archaic component at the site.

CONCLUSIONS

Chronology

Ridge Line Camp is composed of at least three different components. Each component probably represents limited use of the site area. The earliest, and perhaps most extensive utilization of the site is represented by a Four Corners Desert Archaic Tradition (Great Cut phase) component. A radiocarbon date of 3710 ± 90 years B.P., obtained from Feature 3, marks at least one use of the site during this period. The lithic artifact assemblage from Ridge Line Camp also suggests that an Archaic component is present at the site (Appendix D).

The second and third components at the site date to the Anasazi Tradition. The date of these components has been estimated using ceramics recovered from the site. The earliest of these components dates to A.D. 775-800, which corresponds to the Dos Casas Subphase of the Sagehen Phase; the latest dates to A.D. 900-1050, which overlaps with the Cline Subphase of the McPhee Phase.

Adaptation and Economy

No structures were located at Ridge Line Camp suggesting that use of the site was relatively impermanent. At present, the exact function of the two firepits is unknown. The paleobotanical remains from the firepits are far too sparse to serve as a basis for functional interpretations (Appendix C), and no clear associations of artifacts with use surfaces around the pits can be determined. The location of the hearth on the north edge of the ridge might indicate a desire for protection against southwesterly winds, or a desire to be higher on the ridge for a better

view. It is assumed that the hearth and fireplace provided some measure of heat and/or light, and perhaps represent the duration of one day's work or an overnight stay.

The presence of grinding stones at Ridge Line Camp could indicate that food was being processed, although there are no data available to determine if food items were collected at the site, what types of food items were processed (animal or vegetal), or how much food was processed. The presence of projectile points might suggest food procurement by hunting. The presence of numerous flaked lithic debitage items and the high degree of production-input technology suggest that fairly advanced stages of tool manufacture may have occurred at the site. The relationships of food procurement or processing and tool manufacturing to the two firepits is unknown.

The ceramics upon which the two Anasazi components are based are quite fragmentary, making interpretations difficult. The presence of jar sherds might suggest storage or transport. The relatively small amount of ceramic material recovered from Ridge Line Camp suggests that use of the site during the Anasazi period, especially during the later Anasazi occupation, was not extensive.

Social Organization

Ridge Line Camp is interpreted as a limited activity site. Therefore, it could be expected that social organization would be directed towards the successful completion of tasks at special activity areas and within certain recognized time limits. At present it can be postulated that duration of use might have been from one to several days for groups using the site area during the Great Cut Phase, and perhaps only several hours

for groups during the Anasazi period. Activity areas undoubtedly included not only the Ridge Line Camp site proper, but adjacent areas along the ridge and marsh.

None of the data recovered as a result of the fieldwork offers any suggestion as to the size or structure of any task group that might have performed activities at Ridge Line Camp during the Archaic period. Refer to Kane [1:95-96] for discussions of the organization and general lifestyle which might have been characteristic of groups during the Archaic period.

Data from Sagehen Flats Locality indicate that the majority of the sites during the Anasazi period were habitation sites (Greenwald [11]). It is possible that the groups which formed to complete tasks at Ridge Line Camp included single or multiple household work parties. These work parties might have banded together solely for the length of time it took to complete the activity (perhaps only several hours to one full day), and then disbanded and returned to their separate homes.

Dos Casas Subphase habitation sites which may be associated with Ridge Line Camp include Sites 5MT2236, 5MT4614, 5MT2192, and 5MT2193, all located within 1 km of the site. The prehistoric inhabitants of these sites may have used Ridge Line Camp for special activities related to subsistence and/or tool manufacturing. During the Cline Subphase, it is possible that the inhabitants of McPhee Pueblo (Site 5MT4475), a large habitation site located approximately 1.1 km east of Ridge Line Camp, utilized the site area for similar purposes.

Summary

Three components are present at Ridge Line Camp. The earliest, and probably most extensive use of the site, dates to the Great Cut Phase. In addition, two Anasazi phase components are represented: the Dos Casas Subphase of the Sagehen Phase and the Cline Subphase of the McPhee Phase. Use of the site area during both the Archaic and Anasazi periods probably consisted of limited activities, which may have included food procurement and/or processing, and flaked lithic tool manufacturing.



APPENDIX A
GEOLOGY REPORT FOR RIDGE LINE CAMP

by
Richard Glaser

Ridge Line Camp is located on the toe of the dip slope coming off the Dolores Anticline (Cline's Crest). There are no perennial water sources in the immediate area; the site is bounded by a wash on the west and a major drainage to the east, both of which are ephemeral. Ridge Line Camp rests on three different geologic deposits: Dakota Sandstone (bedrock), Sagehen Paleosol, and slope wash.

The humic layer at the site is a combination of wind-blown sediments and slope wash. It is silt to very fine sandy loam and covers most of the site. Its thickness is affected by the slope to the east of the site, where the humic layer is either very thin or nonexistent. To the south end of the site the humic layer is thicker and contains pieces of caliche. The caliche comes from deteriorated bedrock and from a layer of calcium carbonate lying just below the soil. In Test Trench 6, which cuts across the crest of the ridge, the caliche layer rests on unweathered bedrock 70 cm below the surface, under 11 cm of soil, 7 cm of deteriorated sandstone, and 52 cm of highly weathered sandstone. This caliche was formed when percolating water hit bedrock, causing the calcium carbonate to precipitate out. Between the Dakota Sandstone and the humic horizon is normally a layer of deteriorated sandstone. This layer occurs in a number of different forms. The dominant form is a deep red sandy loam, but it sometimes appears as a gray to tannish gray sandy to silty loam containing little or no clay. Both forms typically rest on in situ weathered sandstone or on a white silica cemented sandstone layer containing worm burrows. This white sandstone is exposed on the surface in some areas of the site. Features 2 and 3 were located in the reddish sandstone layer.

On the northwest part of the site is a pre-occupational slope wash deposit. Its parent material is the soil to the north that lies on the dip slope off North Sagehen and Cline's Crest. A fairly well-developed soil, consisting of an A-B horizon complex, has formed in this deposit. This soil consists of silt and silty loam and is strong, angular, and blocky in structure.

In the southwest portion of the site is the Sagehen Paleosol which has filled in where the Dakota Sandstone has been eroded away by arroyos. The position and shape of this paleosol indicate that it probably originated in alluvial backwash or flood-plain-type deposits. The soil is very well developed. The B horizon is a thick (1 m) clay loam with thick clay skins and a very strong angular blocky structure. Carbonates occur only at the base of the B horizon and in the upper levels of the Cca horizon.

All of these soils rest on Dakota Sandstone. This sandstone is the result of a complex of depositional environments in a transgressive sea. Dating to the Cretaceous period, the Dakota Sandstone was once buried by other marine deposits. It is white to tannish-orange in color, containing primary structures such as crossbedding and cut-and-fill. Sandstone, conglomeritic sandstone, shale, carbonaceous shale, and coal seams interbed to make up the main lithology of the formation. It is exposed intermittently at Ridge Line Camp and is the bedrock that controls the dip slope on which the site is located.

In conclusion, there are three main deposits at Ridge Line Camp: slope wash deposit from the north; a Paleosol, probably of alluvial origin; and the Dakota Sandstone, dating to the Cretaceous period. These are all pre-occupational deposits. The only artifact-bearing deposit is

the humic horizon that overlies the entire site. Some soil creep and mass movement may take place in this horizon; therefore, artifacts might have been moved slightly within the site.

APPENDIX B
MAGNEOMETER REPORT FOR RIDGE LINE CAMP
by
Robert Huggins and John Weymouth

The magnetometer survey of Ridge Line Camp took place during the spring of 1979. A three block (1200 m²) grid was staked out by the magnetometer field crew. Although the grid was located on a slope, it is apparent that there are no significant topographic contributions to the magnetic field. The magnetic field over the site was measured on a grid of points at 1 m intervals to obtain sufficient information for interpretation.

Processing

After the data were received from the D.A.P., they were keypunched, checked, and corrected for diurnal drift. No problems were encountered and preliminary maps were produced. After a brief assessment, information was returned to the D.A.P. for use in the field. When the data were reexamined before writing the final site appendix, some alterations of the computer parameters were made to best portray the data. The final maps are shown in Figure 16.B.1, a SYMAP of the total magnetic field, and Figure 16.B.2, a line contour map.

Interpretation

The following assessment varies slightly from the information supplied to the field crew due to standardization of the priority scheme. The anomalies with archaeological possibilities are listed in Table 16.B.1 with correlation of the information sent in the preliminary report.

Anomalies 3a and 3b require additional explanation. Both are possible surface structures, but this decision was based on somewhat ambiguous evidence as indicated by their lower priorities. Geological contributions to the magnetic field on this site are strong and tend to

DOLORES ARCHAEOLOGICAL PROGRAM
SITE 5MT 2242

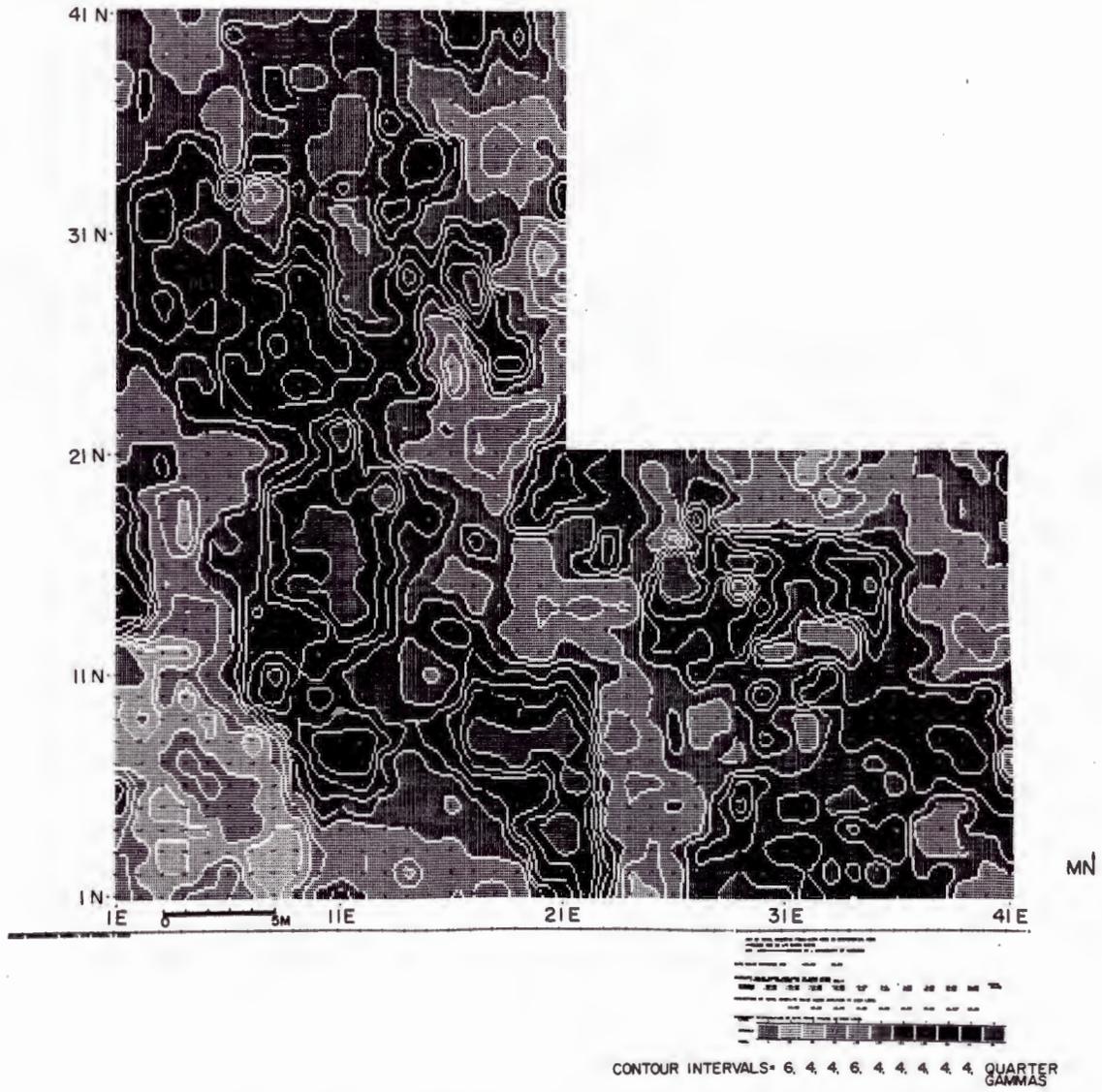
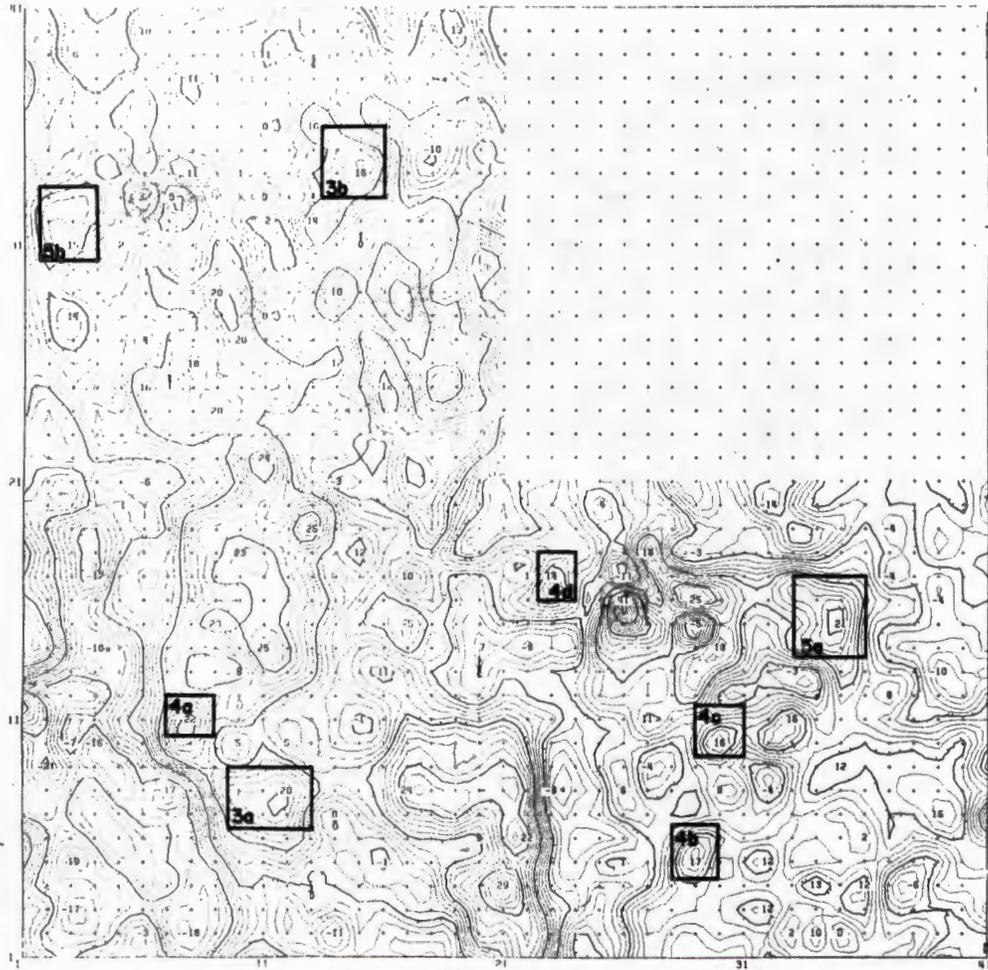


Figure 16.B.1 SYMAP depicting the magnetic field at Ridge Line Camp.

CONTOUR MAP
UNION 5: ARCHAEOLOGICAL PROJECT, SITE SMT2242, 3 BLOCKS
INTERVAL = 10.0



? SQUARES INDICATE SUGGESTED TEST AREAS. THE NUMBERING SCHEME IS EXPLAINED IN THE SITE APPENDIX.

0 5 10M

Figure 16.B.2 Line contour map depicting magnetic anomalies at Ridge Line Camp.

Table 16.B.1 Magnetic Anomalies with Possible Archaeological Affiliations at Ridge Line Camp

Anomaly & Priority*	Location of Center**	Possible Source	Statistics	Comments
3a	8N, 11E	Architecture	A = 4.5 xA = 6	Possible surface structure; anomaly is very diffuse (monopole).
3b	34N, 15E	Architecture	A = 3 xA = 3	Possible surface structure.
4a	11N, 8E	Hearth	A = 4.5 xA = 2	These anomalies have been chosen in an attempt to locate hearths. They are monopoles, have fairly sharp peaks and small half-width areas, and are the most likely places to yield localized intensive burning.
4b	5N, 29E	Hearth	A = 4 xA = 2	
4c	10N, 30E	Hearth	A = 2.5 xA = 2	
4d	17N, 23E	Hearth	A = 1.5 xA = 1	
5a	15N, 35E	Feature of interest	A = 2.5 xA = Indeterminate	Architecture is suspected, but a geological source is also possible.
5b	32N, 3E	Feature of interest	A = 1.5 xA = Indeterminate	Architecture is suspected, but a geological source is also possible.

*Each anomaly is assigned a priority between 1 and 5, with 1 indicating the strongest and most identifiable anomalies (definite pitstructures or kivas) and 5 indicating the weakest and least identifiable anomalies (activity areas, middens, etc.). Anomalies with the same priority are distinguished by lower case letters a, b, etc.

**See Figure 16.B.2.

A - Magnitude

(Gamma/4 units)

xA - Area inside half-width contour (m²)

confuse these responses with archaeological sources. Suggested areas of excavation are shown in Figure 16.B.2.

Summary

The magnetometer survey of Ridge Line Camp indicated the location of eight possible archaeological features, all of low priority. Two surface features (3a and 3b) and four suspected hearths (4a through 4d) appear to have the most promise.

APPENDIX C
BOTANICAL REMAINS FROM RIDGE LINE CAMP

by
Meredith H. Matthews

Bulk soil samples from Ridge Line Camp were collected by the excavation crew from arbitrary excavation levels in ten random 2 by 2 m test squares and from two firepit features (Features 2 and 3). Eight samples, associated with the two features and one of the test squares, were selected for preliminary analysis. The results of analysis are presented in Table 16.C.1.

Of the eight bulk soil samples analyzed, none were collected from strata deeper than 45 cm below modern ground surface. As indicated in Table 16.C.1, most of the macrobotanical material recovered is noncharred. The majority of the plant parts recovered are within the genera of plants currently growing on the site. Given the proximity of the samples to the modern ground surface and the noncharred condition of the remains, most of the remains are believed to be modern, intrusive material. The pedoturbative processes associated with a site located on a slope (such as Ridge Line Camp) would enhance incorporation of modern macrobotanical materials into the archaeological deposits. Therefore, the noncharred macrobotanical remains from this site are not considered to be associated with the prehistoric occupation.

Evaluation of economic/subsistence resources potentially used by the site occupants is hindered by the paucity of charred remains. Many economic plants such as Chenopodium sp. and Portulaca sp. thrive in disturbed habitats. Therefore, their limited occurrence in a charred condition in the samples analyzed (Samples 24 and 29) could be the byproduct of actual utilization or accidental charring and inclusion into a cultural deposit. The lack of secure proveniences (e.g., features) and charred macrobotanical remains from such proveniences makes it difficult to assess what

Table 16.C.1 Botanical Remains from Ridge Line Camp (Page 1 of 2)

Taxon	FS 304 66S,74E Level 1 BS 13	FS 307 66S,74E Level 2 BS 14	FS 329 Feat 2 Upper BS 22	FS 389 Feat 2 Fill BS 23	FS 440 Feat 2 Lower BS 24	FS 435 Feat 3 Upper BS 27	FS 436 Feat 3 Lower BS 28	FS 437 Feat 3 Fill BS 29
Amaranthaceae <u>Amaranthus</u> sp. seed	29/N							20/N
Cactaceae <u>Opuntia</u> sp. spines	2/N							
Chenopodiaceae <u>Chenopodium</u> sp. fruits	10/N	1/N	2/N		3/C			6/N
<u>Salsola</u> sp. fruits	9/N					1/N		
Compositae <u>Artemisia</u> sp. wood leaf	+/C+/N	+/C	+/C		1/N			
<u>Chrysothamnus</u> sp. leaf	3/N							
Indeterminate fruit, type 1	135/N			1/N		1/N		
fruit, type 2	1/N							
fruit, type 3	2/N							
fruit, type 4		3/N						
fruit, type 5		2/N						
Cyperaceae Indeterminate fruit, type 1	1/N							
fruit, type 2	2/N							
Dicotyledoneae Indeterminate wood	+/N							
flower			1/N	1/N			1/N	
leaf, type 1	9/N							
leaf, type 2		X/N						
leaf, type 3				X/C				
Fagaceae <u>Quercus gambelii</u> wood								+/C
Gramineae Indeterminate floret, type 1	20/N							
floret, type 2		5/N						
floret, type 3			3/N					

Table 16.C.1 Macrobotanical Remains from Ridge Line Camp (Page 2 of 2)

Taxon	FS 304 66S,74E Level 1 BS 13	FS 307 66S,74E Level 2 BS 14	FS 329 Feat 2 Upper BS 22	FS 389 Feat 2 Fill BS 23	FS 440 Feat 2 Lower BS 24	FS 435 Feat 3 Upper BS 27	FS 436 Feat 3 Lower BS 28	FS 437 Feat 3 Fill BS 29
Gymnospermae Indeterminate wood				+/C		+/C	+/C	+/C
Liliaceae <u>Allium</u> sp. bulb	2/N							
Malvaceae Indeterminate seed, type 1 seed, type 2	8/N 1/N							
Pinaceae <u>Pinus</u> sp. wood <u>P. edulis</u> seed	X/N						+/C	+/C
Polygonaceae <u>Polygonum</u> sp. fruit	54/N	2/N						1/N
Portulacaceae <u>Portulaca</u> sp.	350/N	4/N		1/N				2/C
Solanaceae <u>Solanum</u> sp. seed	2/N			1/N				
Verbenaceae <u>Verbena</u> sp. seed	4/N	1/N						
Indeterminate seed, type 1 seed, type 2 seed, type 3 seed, type 4	1/N 6/N			1/C		1/N		3/N

Key:

BS	- bulk soil	/C	- charred
FS	- field provenience designation	#/	- number present
Feat	- feature	+/	- less than 1 gm present
/N	- noncharred	X/	- only fragments present

little charred material was retrieved from the samples. However, the occurrence of charred wood from Samples 23 and 29, both firepit samples, may represent fuel resources.



APPENDIX D
LITHIC REPORT FOR RIDGE LINE CAMP

by

Thomas H. Hruby

The data presented in Tables 16.D.1, 16.D.2, and 16.D.3 represent part of the lithic reductive-technology analysis completed for Ridge Line Camp. From a 12-attribute Flaked Lithic Tool (FLT) analysis system, 4 attributes were selected to illustrate general technological, functional, and raw-material variability. A traditional morpho-use classification, a ranked estimation of production technology input for dorsal and ventral surfaces, and a grain-size evaluation are included. Six variables are included from the Flaked Lithic Debitage (FLD) analysis system: grain-size ranking, classification of items with cortex, items which retain a striking platform, obsidian items, mean weight, and total number of debitage items. The Nonflaked Lithic Tool (NFLT) analysis system is represented by four variables: traditional morpho-use item classification, production-input evaluation, indication of item completeness, and raw-material grain-size evaluation. The complete lithic-analysis systems are described elsewhere in D.A.P. publications (Phagan [24]).

During 1980 the D.A.P. lithic-laboratory personnel have repeatedly reviewed the utility and reliability of the lithic-analysis systems. In this review, a number of analysis variables have been modified, particularly the item morpho-use variables on both the FLT and NFLT systems. Analytical perspectives change as information accumulates and as models of tool production and use improve. In order to minimize the effects of this analytical modification on interpretation, the observed values of these variables have been regrouped into larger categories within which analytic consistency is reliable.

For comparative purposes, in addition to the individual site data, the tables include data for a group of temporally and functionally

Table 16.D.1 Lithic Analysis Data Summary for Ridge Line Camp, Flaked Lithic Tools

	Surface Collection (N=136)		Excavated Units (N = 26)		Site 5MT2242 Total (N=162)		Mixed Arch/Anasazi* Sites 5MT 2199, 5MT2202 Total (N = 227)		Anasazi Group (N = 7048)
	#	%	#	%	#	%	#	%	%
MORPHO-USE FORM									
Indeterminate	2	1.5			2	1.2	19	8.4	.5
Utilized flakes	20	14.7	1	3.8	21	13.0	60	26.4	43.6
Cores	2	1.5	1	3.8	3	1.9	9	4.0	19.0
Choppers, scraper planes	26	19.1	7	26.9	33	20.4	41	18.1	10.4
Thick unifaces	13	9.6	2	7.7	15	9.3	5	2.2	6.4
Thin unifaces	17	12.5	1	3.8	18	11.1	13	5.7	10.1
Bifaces	33	24.3	8	30.8	41	25.3	18	7.9	3.9
Projectile points	19	14.0	5	19.2	24	14.8	44	19.4	3.7
Specialized forms	4	2.9	1	3.8	5	3.1	18	7.9	2.3
THINNING STAGE: DORSAL									
Indeterminate							1	.4	.3
Unmodified core	4	2.9			4	2.5	7	3.1	19.8
Unthin item, w/ cortex	16	11.8	2	7.7	18	11.1	21	9.3	31.7
Unthin item, no cortex	27	19.9	8	30.8	35	21.6	40	17.6	31.4
Prelim shap, w/ cortex	9	6.6	1	3.8	10	6.2	12	5.3	3.7
Prelim shap, no cortex	33	24.3	2	7.7	35	21.6	10	4.4	2.6
Primary thinning	14	10.3	2	7.7	16	9.9	4	1.8	1.2
Secondary thinning	8	5.9	9	34.6	17	10.5	4	1.8	1.1
Well-shaped	24	17.6	2	7.7	26	16.0	115	50.7	7.5
Highly stylized	1	.7			1	.6	13	5.7	.7
THINNING STAGE: VENTRAL									
Indeterminate							1	.4	.2
Unmodified core	3	2.2			3	1.9	4	1.8	19.5
Unthin item, w/ cortex	3	2.2	1	3.8	4	2.5	6	2.6	1.9
Unthin item, no cortex	57	41.9	8	30.8	65	40.1	93	41.0	64.4
Prelim shap, w/ cortex	4	2.9	2	7.7	6	3.7			1.4
Prelim shap, no cortex	27	19.9	2	7.7	29	17.9	15	6.6	3.4
Primary thinning	13	9.6	2	7.7	15	9.3	2	.9	1.2
Secondary thinning	8	5.9	9	34.6	17	10.5	2	.9	1.0
Well-shaped	20	14.7	2	7.7	22	13.6	91	40.1	6.4
Highly stylized	1	.7			1	.6	13	5.7	.7
GRAIN SIZE									
Medium (coarse)	2	1.5			2	1.2	10	4.4	2.1
Fine	6	4.4	1	3.8	7	4.3	12	5.3	6.2
Very Fine (detrital)	77	56.6	18	69.2	95	58.6	113	49.8	65.3
Microscopic (nongranular)	51	37.5	7	7.7	58	35.8	92	40.5	26.3

*Arch/Anasazi - Archaic/Anasazi

Table 16.D.2 Lithic Analysis Data Summary for Ridge Line Camp, Flaked Lithic Debitage

	Surface Collection (N = 3336)		Excavated Units (N=1692)		Site 5MT2242 Total (N=5028)		Mixed Arch/Anasazi* Sites 5MT 2199,5MT2202 (N = 2735)		Anasazi Group (N = 66,095)
	#	%	#	%	#	%	#	%	%
GRAIN SIZE									
Medium (coarse)	37	1.1	7	.4	44	.9	73	2.7	3.2
Fine	132	4.0	40	2.4	172	3.4	510	18.6	21.4
Very Fine (detrital)	1810	54.3	971	57.4	2781	55.3	1443	52.8	51.6
Microscopic (nongranular)	1357	40.7	674	39.8	2031	40.4	709	25.9	23.7
Items with Cortex	191	5.7	102	6.0	293	5.8	581	21.2	25.9
Items with Platform	1504	45.0	448	26.5	1952	38.8	1849	67.6	38.8
Obsidian Items	1	.02	5	.3	6	.1			18 .03
Total Debitage	3336	66.3	1692	33.7	5028	100	2735		
Mean Weight (grams)	1.51		1.20		1.41			1.71	7.93

*Arch/Anasazi - Archaic/Anasazi

Table 16.D.3 Lithic Analysis Data Summary for Ridge Line Camp, Nonflaked Lithic Tools

	Surface Collection (N = 192)		Excavated Units (N = 35)		Site 5MT2242 Total (N=227)		Mixed Arch/Anasazi* Sites 5MT 2199,5MT2202 (N = 62)		Anasazi Group (N = 4318)
	#	%	#	%	#	%	#	%	%
MORPHO-USE FORM									
Indeterminate	121	63.0	20	57.1	141	62.1	4	6.5	9.2
Generalized, unhafted	3	1.6			3	1.3	3	4.8	24.0
Hammerstones							5	8.1	9.9
Manos	29	15.1	10	28.6	39	17.2	43	69.4	33.5
Slab metates	6	3.1			6	2.6	1	1.6	2.1
Trough metates	4	2.1			4	1.8			9.4
Unspec & frag metates	27	14.1	5	14.3	32	14.1	5	8.1	5.2
Generalized, hafted							1	1.6	2.5
Misc. specialized	2	1.0			2	.9			4.0
PRODUCTION EVALUATION									
Indeterminate	135	70.3	24	68.6	159	70.0	2	3.2	8.4
Nodule	25	13.0	11	31.4	36	15.9	44	71.0	53.5
Minimally shaped	9	4.7			9	4.0	14	22.6	16.7
Well-shaped	23	12.0			23	10.1	1	1.6	21.1
Highly stylized							1	1.6	.1
ITEM COMPLETENESS									
Indeterminate							1	1.6	.9
Small fragment	120	62.5	19	54.3	139	61.2	1	1.6	3.3
Partial implement	60	31.3	9	25.7	69	30.4	40	64.5	45.6
Complete (+ or -) impl	12	6.3	7	20.0	19	8.4	20	32.3	50.8
Grain Size									
Indeterminate	1	0.5			1	.4	1	1.6	8.1
Coarse	3	1.6			3	1.3	43	69.4	16.5
Medium	177	92.2	33	94.3	210	92.5	16	25.8	39.4
Fine	11	5.7	2	5.7	13	5.7	1	1.6	34.5
Nongranular							1	1.6	1.2

*Arch/Anasazi - Archaic/Anasazi

similar D.A.P. sites as well as data for all D.A.P. Anasazi sites analyzed prior to the 1980 field season. These latter "Anasazi group" data have been generated from computer files which have not undergone complete editing, and final figures may differ slightly from those presented. Comparisons and interpretations presented here, particularly those of an intersite nature, are based on a qualitative assessment of lithic profile variation, since significance has not been statistically established.

Ridge Line Camp is classified as a large limited activity site used during the Great Cut Phase, the Dos Casas Subphase of the Sagehen Phase, and the Cline Subphase of the McPhee Phase. Analysis of the lithic data suggests that the greatest utilization of Ridge Line Camp occurred during the Archaic Tradition, though the site must be interpreted as having a mixed assemblage. Two other sites, Site 5MT2199 and Site 5MT2202, have a similar temporal/functional matrix and are grouped together for comparative purposes.

The FLT profile from Ridge Line Camp and the profile from the grouping of Archaic/Anasazi limited activity sites are significantly different than the profiles from the Anasazi Group of sites. The flaked lithic tool assemblage from Ridge Line Camp and the two similar sites are dominated by bifaces (including projectile points), chopper/scrapper planes, and unifaces. In Anasazi sites, over fifty percent of the FLT assemblage is made up of utilized flakes and cores. The relatively high percentage of bifaces, chopper/scrapper planes, and projectile points indicates that hunting activities are probably well-represented at these Archaic/Anasazi limited activity sites. Another Archaic indicator is the high percentage of microscopic-grained materials, the limited activity sites showing a greater amount of production input than the Anasazi group.

These observations are all consistent with an interpretation of a highly curated technology for the Archaic Tradition.

The FLD table is more difficult to interpret. The raw material grain sizes for Ridge Line Camp are consistent with the grain sizes for flaked lithic tools for this site. The very low percentage of cortex on the flaking debris plus the relatively low percentage of items with platforms suggests that either the final stages of tool manufacture or the maintenance of curated flaked lithic tools took place at the site. The small mean weight of the debitage complements this interpretation. The FLD profile from the Archaic/Anasazi limited activity sites differs from the profile for Ridge Line Camp. The grain size distribution for these sites is similar to the Anasazi Group. The small mean weight of the debitage items is suggestive of the final stages of tool manufacture, but the relatively high percentage of debitage with cortex is inconsistent with this interpretation. It is suggested that the Archaic/Anasazi limited activity sites represent situations where local raw materials were brought to the site and reduced into tool forms. The FLD table suggests that a number of curated microscopic-grained materials were brought to Site 5MT2199 and Site 5MT2202 in a finished form. This contrasts with Ridge Line Camp where the final stages of tool manufacture or maintenance of lithic tools took place.

Although the NFLT assemblage from Ridge Line Camp is dominated by items classified as indeterminate, analysis indicates that the majority of the artifacts were involved in the processing of food items. Some of these items consist of small fragments from a few generalized grinding slabs. A number of the larger fragments have been placed in the unspecialized metate category. The other category of tool form which is

well-represented in the assemblage is the mano group. It is significant to note that only one of the thirty-nine manos is a two-hand mano, the remainder being classified as either fragments or one-hand manos. The large number of one-hand manos suggests that the Archaic assemblage at the site is dominant. Due to the fragmentary condition of the NFLT assemblage from Ridge Line Camp, comparisons will not be made with the other profiles.

Site 5MT2242 is generally more similar to other mixed Archaic/Anasazi sites in the D.A.P. area than it is to a sample of pure Anasazi habitations. Though the intensity of occupation for a particular time period is difficult to evaluate, the lithic profiles for Ridge Line Camp suggest that the dominant assemblage is Archaic. The intensity of Anasazi utilization of Ridge Line Camp was probably not very great.

APPENDIX E
FAUNAL REMAINS FROM RIDGE LINE CAMP

by
Steven D. Emslie

Faunal remains were recovered from Ridge Line Camp through excavation and screening of all soil through one-quarter or one-eighth inch mesh. Faunal remains were identified using modern comparative skeletons collected in the D.A.P. region. All bones were identified to species when possible. Bones of the cottontail (Sylvilagus spp.) were identified only to genus, as several species which are not osteologically recognizable occur in the D.A.P. region. Minimum number of individuals (MNI) for each species represented in the site collection was calculated by counting the most numerous element of the same side. In the case of multiple occupation sites, MNIs cannot be calculated for specific time periods until other analyses are completed.

A total of 25 bones, representing three identifiable species and six taxonomic categories, was recovered from the site. The majority of the bone is from unidentifiable mammals, followed in frequency by black-tailed jackrabbit and cottontail rabbit. No worked bone or bone displaying cut marks was recovered from the site. Faunal taxa identified at Ridge Line Camp are shown in Table 16.E.1.

The small size of the faunal assemblage from this site allows few ecological or cultural interpretations. All represent species commonly occurring in the D.A.P. region and, if present prehistorically, may have been used by the prehistoric Indians for food and skins. Comparison of this site with other sites in the D.A.P. region may reveal further information on prehistoric faunal utilization at Ridge Line Camp.

Table 16.E.1 Faunal Taxa Identified at Ridge Line Camp

Taxon	No. of Bones	MNI*
Mammal, small	3	
Mammal, medium	7	
Mammal, large	8	
Black-tailed jackrabbit (<u>Lepus californicus</u>)	3	1
Cottontail rabbit (<u>Sylvilagus</u> spp.)	3	1
Domestic sheep (<u>Ovis aries</u>)	1	1
Total	25	3

*MNI - Minimum number of individuals.

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