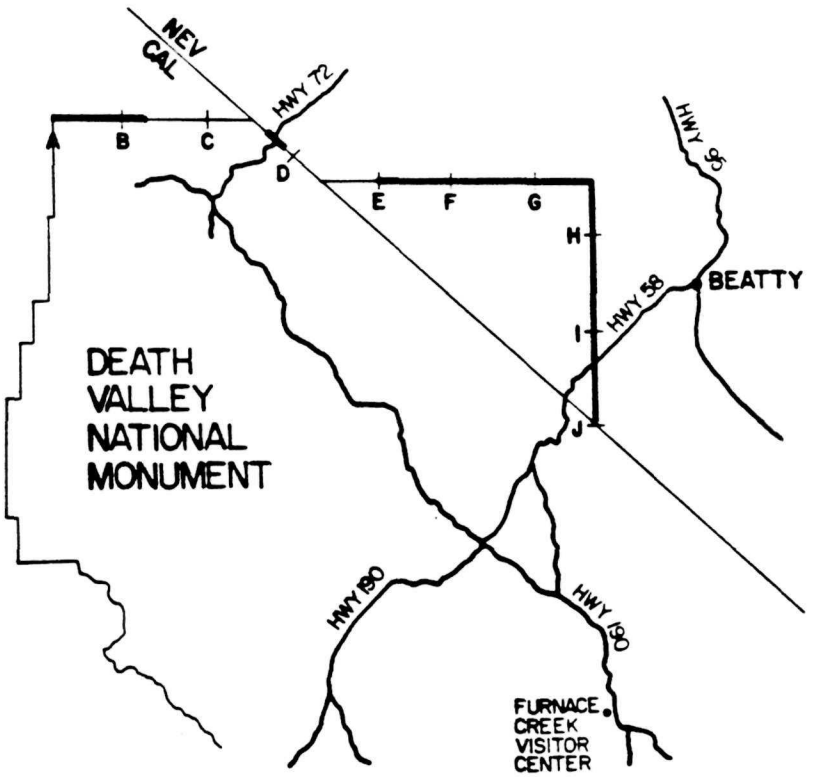
Archeological Survey in northeastern Death Valley National Monument

By
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TABLE OF CONTENTS

Page

LIST OF FIGURES v

LIST OF MAPS. v

LIST OF TABLES. v

ABSTRACT. vi

ACKNOWLEDGEMENTS. vii

Chapter 1. INTRODUCTION. 1

Chapter 2. ENVIRONMENTAL SETTING 7
Topography 7
Climate. 8
Biotic Communities 8
Past Environmental Change. 10

Chapter 3. CULTURAL BACKGROUND 13
Previous Research. 13
Culture History - Prehistoric. 14
Pleistocene Period (before 10,000 B.C.). 15
Lake Mojave Period (10,000-8000 to 5000 B.C.). 15
Pinto Period (5000 to 2000 B.C.) 17
Gypsum Period (2000 B.C. to A.D. 500). 20
Saratoga Springs Period (A.D. 500 to 1200) 20
Shoshonean Period (A.D. 1200 to European Contact). 21
Summary. 23
Culture History - Historic 23

Chapter 4. METHODS 27
Site Recording 28

Chapter 5. DESCRIPTION OF SITES AND ISOLATED FINDS 31
Prehistoric Sites. 31
DEVA 83A-1 31
DEVA 83A-2 31
DEVA 83A-5 34
DEVA 83A-7 36
DEVA 83A-8 38
DEVA 83A-9 40
DEVA 83A-10. 42
DEVA 83A-11. 44
Historic Sites 46
DEVA 83A-3 46
DEVA 83A-4 49
DEVA 83A-6 49
Isolated Finds 53
M1 57
M2 57

TABLE OF CONTENTS (continued)

Chapter 6. DISCUSSION OF SURVEY RESULTS. 59
Prehistoric Material 59
Historic Material. 63

Chapter 7. CULTURAL RESOURCE MANAGEMENT RECOMMENDATIONS. 65
Prehistoric Resources. 65
DEVA 83A-1, 2, 5, and 11 65
DEVA 83A-7 66
DEVA 83A-8 68
DEVA 83A-9 70
DEVA 83A-10. 71
Historic Resources 72
DEVA 83A-3 72
DEVA 83A-4 73
DEVA 83A-6 73
Isolated Finds 75

BIBLIOGRAPHY. 77

LIST OF FIGURES

		Page
1.	Characteristic artifacts of the Lake Mojave Period	18
2.	Characteristic points of the Pinto and Gypsum periods.	19
3.	Characteristic points of the Saratoga Springs and Shoshonean periods.	22
4.	Plan view of site DEVA 83A-1	32
5.	Plan view of site DEVA 83A-2	33
6.	Plan view of site DEVA 83A-5	35
7.	Plan view of site DEVA 83A-7	37
8.	Plan view of site DEVA 83A-8	39
9.	Plan view of site DEVA 83A-9	41
10.	Plan view of site DEVA 83A-10.	43
11.	Plan view of site DEVA 83A-11.	45
12.	Plan view of site DEVA 83A-3	47
13.	Plan view of site DEVA 83A-4	50
14.	Plan view of site DEVA 83A-6	51
15.	Isolated Artifacts: (A) Projectile point fragment (IA-40); (B) Projectile point fragment (IA-45); (C) Possible petroglyph (IA-25).	56

LIST OF MAPS

		Page
1.	Area Map.	2
2.	Survey Area/Site Locations A, B, C, and D	3
3.	Survey Area/Site Locations E and F.	4
4.	Survey Area/Site Locations H, I, and J.	5

LIST OF TABLES

		Page
1.	Changes in climate and vegetation during the past 12,000 years in the southwestern Great Basin	11
2.	Cultural chronologies proposed for the southwestern Great Basin	16
3.	Description and location of isolated artifacts.	54

ABSTRACT

This report describes the results of an archeological clearance survey along 61 km of the northern and northeastern boundaries of Death Valley National Monument. The purpose of this survey was to identify cultural resources within a right-of-way for a fence, planned for this part of the monument boundary, in order the assess the impact of fence construction on these resources. Brief discussions of the present and past environment and the cultural history of the survey area are presented as background. A description of survey methods is followed by a detailed discussion of the cultural material found. Eleven sites were identified, including eight prehistoric and three historic sites. Of the prehistoric sites, four are low-density lithic scatters on the surface, lacking diagnostic artifacts. The remaining prehistoric sites include a small sherd and lithic scatter, two rockshelters, and a large (probable) base camp. Ceramics found at three of these latter sites date them to the Shoshonean period (A.D. 1200-contact). The three historic sites are a small site of uncertain function, a small mining camp, and a very large site that probably represents the historic town of Amargosa. Isolated finds include 48 prehistoric and historic artifacts (including a possible petroglyph), 28 rock clusters or cairns, and two mines. The description of the cultural materials is followed by an interpretative discussion of the nature and distribution of these materials. Finally, the archeological significance and potential impact of fence construction on the identified cultural resources is assessed, and cultural resource management recommendations are presented.

ACKNOWLEDGEMENTS

A project such as this could not be accomplished without the assistance of many people. First of all, I would like to thank my coworker David Groenfeldt. He was an invaluable asset to the project, in planning the survey as well as in the fieldwork itself. He was always cheerfully encouraging, in spite of high temperatures, rugged terrain, and grueling hours. I would also like to thank WACC Archeologist George A. Teague, under whose direction this project took place. It was due to his efforts that the survey began and operated so smoothly. His advice and guidance have been of the utmost value throughout the entire project.

The assistance of the Death Valley National Monument staff was essential to the success of this project. I would like to extend special thanks to Chief Ranger Richard Raynor and Resource Management Specialist Peter Sanchez for their cooperation and support. I would especially like to thank Ranger Jim Unruh, whose company, encouragement, and assistance meant a great deal to Dave and I on an unexpectedly long and difficult portion of the survey.

Finally, I would like to thank several people without whose technical assistance this report would not have been possible. Beverly Mohler oversaw some of the vital administrative aspects of the project, as well as produced readable site forms from copies scrawled in the field. Vonna Lou Mason had to decipher endless pages of my illegible scribbles to produce this report. Judy Weik produced the excellent maps, in spite of my repeated changes and additions. Karen Seger edited not only this report, but also my editing to produce order out of chaos.

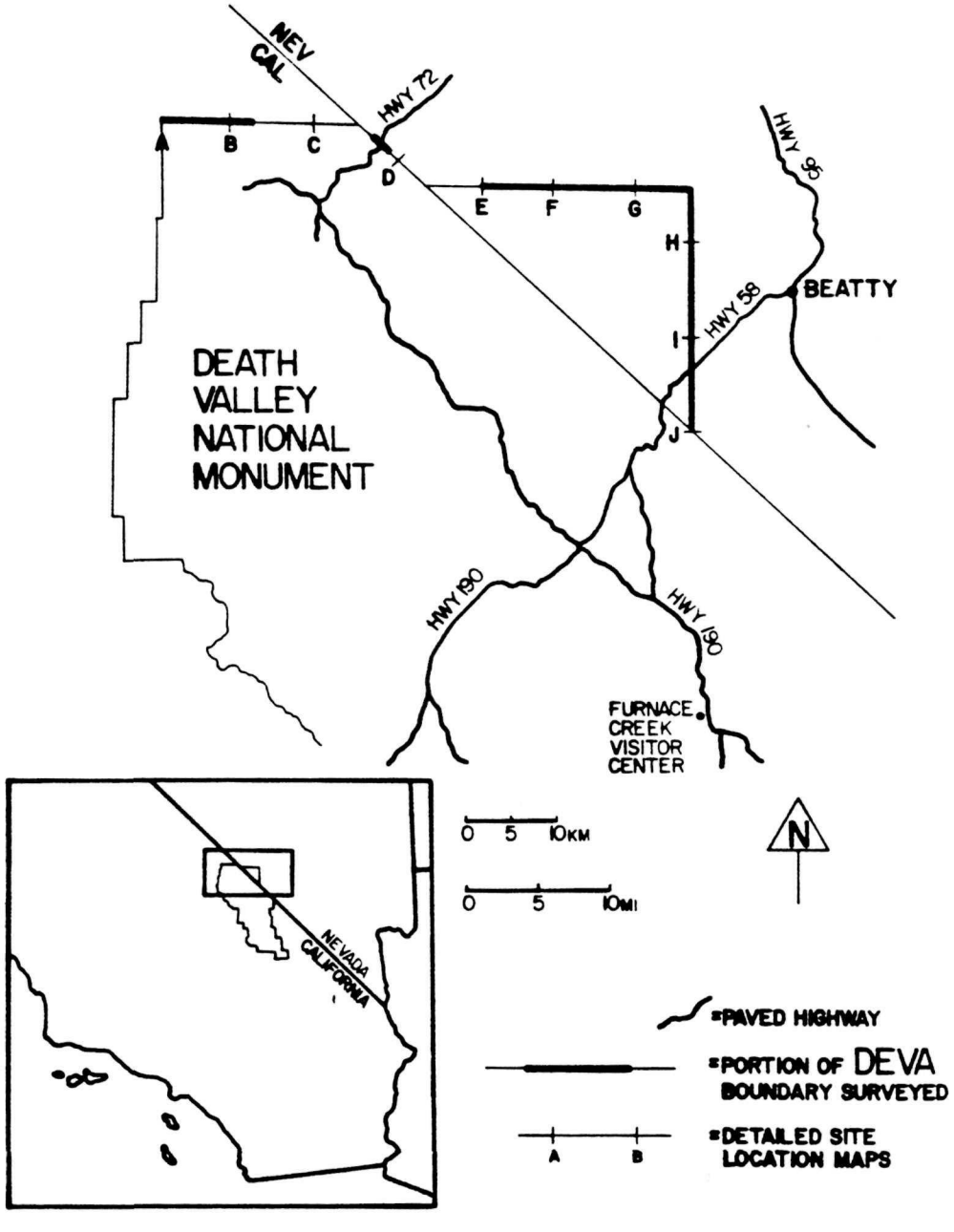
Chapter 1
INTRODUCTION

As part of a long-term cultural and natural resource management program (NPS 1976:67-71; n.d.:1-9), the Death Valley National Monument staff planned to construct barrier and drift fences along the northern and northeastern boundaries of the monument during 1983. The purpose of these fences was to prevent cattle and feral burros from entering the monument.

In accordance with National Park Service policy, archeological clearance for the project was required prior to the initiation of fence construction. In order to provide information for a recommendation of archeological clearance, a survey was undertaken by two archeologists (David Groenfeldt and myself) from the Western Archeological and Conservation Center (WACC), under the direction of George A. Teague, staff archeologist at WACC. The purpose of this survey was to identify and evaluate archeological and historic resources along the planned fence line, and to assess the potential impact of fence construction on these resources.

The survey took place from May 20 through May 31, 1983. Three sections of the monument boundary were examined, totaling approximately 61 km (38 miles) in length. The largest of the three sections (53 km) included all of the monument boundary in Nevada, with the exception of a 5.2 km segment extending west from the crest of the Grapevine Mountains to the California border. The next longest section (10.5 km) extended across the valley of Death Valley Wash, along the northern boundary of the monument. This section extended from the northwestern corner of the monument, in the Last Chance Mountains, eastward to the 3,400 foot elevation in the foothills of the eastern slopes of the Grapevine Mountains. The shortest section (2.4 km) followed the California/Nevada border where it crosses Highway 72 at the mouth of Grapevine Canyon. This section extended from the top of a series of bluffs (elevation 4,285 feet) on the northeast to a comparable series of bluffs (elevation 4,100 feet) on the southwest. The areas surveyed are shown on maps 1-4. In all, a total of eight prehistoric and three historic sites were identified, as well as 48 isolated artifacts (both prehistoric and

MAP I
AREA MAP



MAP 2
SURVEY AREA / SITE LOCATIONS

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MAP 3
SURVEY AREA / SITE LOCATIONS

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in an effort to protect sensitive archeological artifacts.

MAP 4
SURVEY AREA / SITE LOCATIONS

Map has been removed from the electronic edition in an effort to protect sensitive archeological artifacts.

historic), 28 rock clusters or cairns, and two isolated mines. One possible petroglyph (included among the isolated artifacts) was also located.

The results of the survey are discussed in the sections that follow. Brief summaries of the environmental setting and cultural background of the region surveyed are provided. These are followed by a description of the survey procedures used and a detailed description of the cultural materials located. An interpretive discussion of these cultural materials is then presented. Finally, the significance and the impact of fence construction on the cultural resources identified are evaluated, and management recommendations are made.

Chapter 2
ENVIRONMENTAL SETTING

Due to the linear extent of the survey, it transected environmental zones that vary greatly with respect to topography, climate, and biotic communities. While a substantial environmental literature exists for Death Valley proper and adjacent desert regions to the south (see, for example, Brooks and others 1981:66-99; Hunt 1975; NPS 1976:10-41; Warren and others 1980:3-15), environmental information is lacking for the area surveyed. Although it is part of Death Valley National Monument, the survey area (except for the 5.2 km section crossing Death Valley Wash; Map 2, sections AB, BC) lies outside Death Valley proper and is environmentally more similar to the Amargosa and Mojave deserts to the south.

Topography

The survey area lies within the Basin and Range Province, an area of north/south trending mountain ranges and intervening valleys. This topography has formed primarily as a result of block faulting, ongoing since the Late Cretaceous Period. Large blocks of primarily Paleozoic sedimentary rocks in the survey area have been tilted eastward, forming mountains along their uplifted western edges and valleys along their depressed eastern edges (Hunt 1975:119-145).

Erosion of the uplifting mountains in this arid environment has filled the valley with alluvial and colluvial debris, and has formed alluvial fans along the piedmonts of the mountains. Along the eastern slopes, the fans are more extensive, often coalescing into bajadas due to the continual uplift and the more gradual slope on this side of the fault block ranges. Some of the valleys, such as the Amargosa Desert, have exterior drainage. Others, such as Sarcobatus Flat in the northern part of the survey area and Death Valley itself, have no outlet at present and are often floored by dry or only occasionally wet playas and salt flats.

The survey encountered all the above-mentioned topographic features. In sections AB and BC (see Map 2), it crossed Death Valley Wash, a structural valley with locally exterior drainage to the southern

part of Death Valley, and climbed the alluvial fans to the base of the mountains on the east and west. The northeastern corner of the survey area (see Map 3, sections FG and GH), skirted the edge of Sarcobatus Flat, a salt flat/playa with internal drainage. A large part of the survey area followed alluvial fans along the eastern slopes of the Grapevine Mountains (see Map 4, sections HI and IJ). Finally, a segment of the survey area (see Map 3, Section EF) reached the crest of the Grapevine Mountains at slightly over 8,000 feet.

Climate

Both climate and biotic communities within this region are strongly influenced by topography--especially altitude. On a large scale, the Sierra Nevada, slightly more than 100 km to the west, creates a rain shadow that is largely responsible for the aridity of the area. Although climatic data for the survey area are not available, this area is climatically similar to the Amargosa and Mojave Desert regions immediately to the south. In these regions, yearly rainfall averages range from 100 mm in the valley bottoms, at around 1,000 feet in elevation, to 250 mm in the highest mountains, at nearly 8,000 feet (Warren and others 1980:9). While elevations in the survey area range from 2,500 feet at Death Valley Wash to slightly over 8,000 feet at the crest of the Grapevine Mountains, most of this area lies between 4,000 and 5,000 feet. Yearly temperature extremes tend to be great and are also strongly influenced by topography. In the valleys, summer temperatures can reach 120° F and subfreezing temperatures are not uncommon in the winter. The mountains have much milder summers, but temperatures at these high elevations can drop to 10° F during the winter (Brooks and others 1981:67; Warren and others 1980:9).

Biotic Communities

The biotic communities vary altitudinally along with climate. The survey area lies within the Sonoran life zone, and most of it occupies a region of transition between the Upper and Lower Sonoran zones. The transition is centered at about 4,000 feet in this region. The following discussion only briefly characterizes the biotic environment of the survey area. More comprehensive overviews of the flora and fauna

have been done by the following authors: C. B. Hunt (1975:186-217), Coombs and others (1979: 10-17), NPS (1976:21-35, Appendix C), and Wallace (1977:7-21).

Nearly all the survey area is covered with shrub-dominated communities. Below 4,500 feet, creosote bush (Larrea tridentata) and shadscale (Atriplex confertifolia) are dominant and are usually associated with white bur sage or burro-brush (Ambrosia dumosa), along with a variety of other shrubs and herbaceous annuals. Above 4,500 feet, sagebrush (Artemisia tridentata) becomes the dominant shrub. Joshua trees (Yucca brevifolia) appear as important members of the sagebrush scrub in a narrow elevational band (approximately 5,000 to 5,400 feet) along the northeastern slopes of the Grapevine Mountains. Scattered pinyon pines (Pinus monophylla) and junipers (Juniperus osteosperma) appear in the sagebrush scrub at around 6,000 feet, and pinyon/juniper woodland becomes the dominant plant community above 6,500 feet in the Grapevine Mountains.

Like vegetation, the fauna of the survey area varies altitudinally, with more diverse communities and denser populations occurring in conjunction with the lusher vegetation and more available water of the higher elevations. The lowest elevations support a variety of insects and reptiles. Mammalian herbivores, however, are limited primarily to rodents, jack rabbits (Lepus californicus), and cottontails (Sylvilagus audubonii). Mammalian carnivores are likewise limited to a few smaller species, primarily the coyote (Canis latrans) and kit fox (Vulpes velox). At higher elevations, larger mammals supplement a richer fauna in general. Among the herbivores are bighorn sheep (Ovis canadensis), mule deer (Odocoileus hemionus), and (historically, at least) pronghorn antelope (Antilocapra americana). Larger carnivores include mountain lion (Felis concolor), bobcat (Lynx rufus), and gray fox (Urocyon cinereoargenteus).

The preceding discussion is included not only to provide a description of the environmental setting of the survey. An understanding of environmental variability, especially with respect to the availability of culturally valuable natural resources, is an important aid in interpreting variability in the cultural materials identified in the course of this survey. There are ethnographic

descriptions of the Native American occupation of the survey area which recount variations in settlement pattern and subsistence activities in response to variations in topography, climate, and biotic communities (see, for example, Brooks and others 1981:94-99; Wallace 1977: 10-61; Warren and others 1980:137-160, 175-184). Likewise, in historic times, Anglo economic activities as well as the location and permanence of settlements have been strongly influenced by such factors as the location and accessability of ores, availability of water, topography, and distribution of lands suitable for grazing. Such variations in human activities are reflected in the archeological record and are made more explainable by an understanding of the environmental setting.

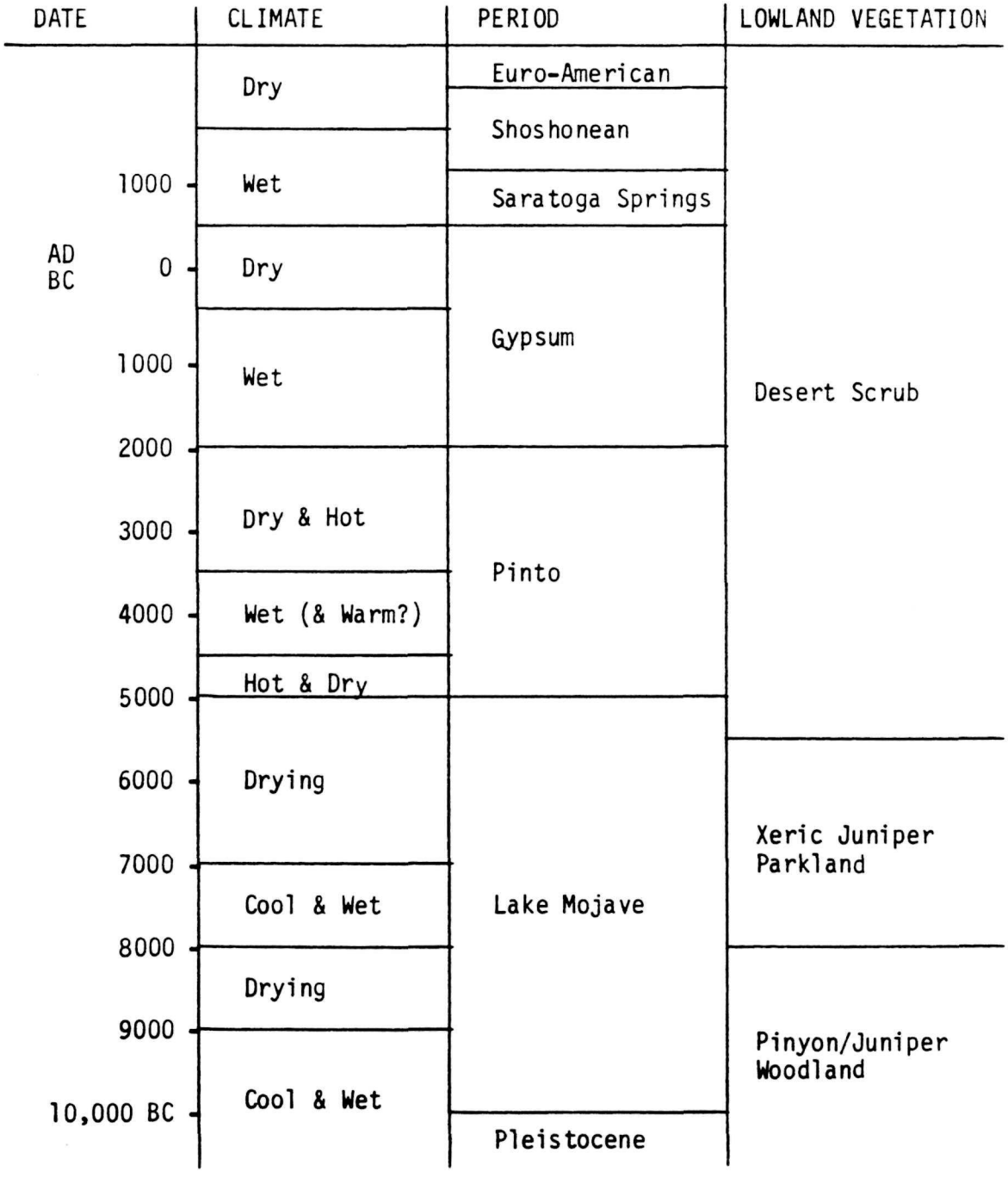
Past Environmental Change

While no paleoenvironmental data exist for the survey area, such data are available for adjacent areas. Vegetation records dating to the Late Pleistocene and Early Holocene have been recorded from packrat middens in the Funeral Mountains and Titus Canyon (Van Devender 1977; Wells and Berger 1967). Sedimentary studies for the Holocene have been performed at Ash Meadows in the Amargosa Desert (Mehringer and Warren 1976). More general, synthetic summaries of a variety of paleoenvironmental data for the Great Basin and Mojave and Amargosa deserts can be found in Mehringer (1977), Van Devender (1977), Van Devender and Spaulding (1979), Warren and others (1980), and Wells and Berger (1967).

Extrapolating from these various studies, a picture of the past environment of the survey area can be approximated (Table 1). During the Late Wisconsinan stage (22,000 - 11,000 B.P.), the climate was cooler and/or moister than that of the present day. Vegetation throughout most, if not all, of the survey area was dominated by pinyon/juniper woodland (such as is now found in the Grapevine Mountains at elevations above 6,500 feet). After 11,000 B.P., temperatures warmed, but precipitation (due to its amount and/or seasonal distribution) remained more effective than at present, resulting in an open juniper parkland with joshua trees. After 8,000 B.P., both climate and vegetation were essentially similar to that which presently occurs in the region. While minor climatic fluctuations probably

Table 1

CHANGES IN CLIMATE AND VEGETATION DURING THE PAST 12,000 YEARS IN THE SOUTHWESTERN GREAT BASIN



occurred during the last 8,000 years (see Mehringer 1977), their effects on the biotic and human environment were small to insignificant (see Weide 1976). Since none of the archeological materials identified in this survey give any indication of being as old as 8,000 years B.P. (see Chapter 5), the effect of environmental changes through time or variability in these materials is probably insignificant, compared with the effects of synchronic environmental variability previously discussed.

Chapter 3
CULTURAL BACKGROUND

Previous Research

While a variety of archeological studies have been undertaken in the region adjacent to the survey area, almost no such work has taken place in the survey area itself. In his overview for Death Valley National Monument, Wallace (1977) describes the numerous archeological surveys and excavation projects performed in Death Valley before 1977. Much of this work was done by Wallace and by Alice Hunt. Since 1977, major archeological work within the monument has included Teague and Shenk's (1977) excavations at Harmony Borax Works, Craib's (1978) survey of 187 mining claims, Oetting's (1980) survey along the Emigrant-Wildrose Highway, and Hardesty's (1980, 1981) excavations in the vicinity of the original Bullfrog Mine.

Of this work, virtually all has taken place within the confines of Death Valley proper, and only Craib's and Hardesty's studies touched on the survey area. Craib surveyed a group of mining claims within the Bullfrog Mining District (in the Bullfrog Hills; see Map 4, Section IJ). He located a single, small historic site (DEVA 77-80). The historic mining complex excavated by Hardesty is located within the same area.

Additionally, two major historic studies of the monument have been produced that include discussions of the Bullfrog Mining District. These are Tweed's (1976) survey of historic resources within Death Valley National Monument, and Greene and Latschar's (1981) history of mining in the monument. Greene and Latschar's study was especially useful for interpreting historic materials encountered in this survey.

Outside Death Valley National Monument, with the exception of a few patented mining claims in the Bullfrog Mining District, the land bordering the survey area is under the jurisdiction of the Bureau of Land Management (BLM). The results of a number of scattered surveys and a few excavations in the region to the west of the survey area are summarized in a cultural resource overview prepared for the BLM by Norwood and Bull (1979). More intensive research has been done in the areas to the south of the survey area. Reports of extensive archeological surveys in this area by Coombs (Coombs and others 1979)

and Brooks (Brooks and others 1981) are available. A variety of other studies are mentioned in the reports of these surveys as well as in a cultural resource overview of the region prepared by Warren and others (1980). The areas immediately east and north of the survey area are notable in the lack of available information about previous archeological research in this region. A cultural resource overview for this area should be available in the near future, however (Rolf 1983).

Culture History - Prehistoric

Due to the lack of previous research in the survey area, a discussion of the prehistory must be extrapolated from studies performed in adjacent regions. An examination of the archeological literature for the Great Basin, however, reveals a confusing array of names, numbers, phases, horizons, traditions, and dates. The situation is effectively described in Hester (1973), Norwood and Bull (1979), and Oetting (1980).

There are several underlying reasons for this confusion. First, the Great Basin is a huge geographic area of very great environmental diversity. Additionally, it is internally divided into several plateaus, the valleys of several major rivers, and numerous intermontane valleys of varying size. This environmental geography encouraged prehistoric cultural diversity and the discontinuous, often time-transgressive, spread of cultural assemblages or individual artifact types which might otherwise serve as temporal markers in a cultural chronology.

The second reason for the confusion is the nature of archeological research in the Great Basin. Although the region has received archeological attention for a considerable length of time, studies have tended to be sporadic and geographically discontinuous. The overwhelming amount of archeological research has been in the form of surveys, and most sites recorded have either been surface sites or have had only their surface components investigated. Such work is valuable for establishing the range of variability in cultural assemblages and for investigating questions of spatial patterning of cultural material, but does little toward establishing a firm chronological framework necessary for diachronic studies, including basic culture history.

Finally, the geography has encouraged archeological diversity much as it encouraged cultural diversity of the prehistoric inhabitants. Due to the profusion of relatively self-contained geographic units with easily defined boundaries, archeologists have tended to focus their studies on restricted regions, or even single valleys, with seemingly minimal attempts to integrate their own work with that of others. Such integration has been left to a few intrepid synthesizers (for example, Hester 1973).

Fortunately, these trends seem to be reversing somewhat. Table 2 shows five chronological schemes used recently in the southwestern Great Basin. As is apparent, there is reasonably close agreement between all but Norwood and Bull, and close agreement between Hester, Craib, and Warren and others. While each of these last three schemes are equably usable, the one proposed by Warren and others (1980:16-54) has been chosen as a chronological framework for this report. It focuses on the area environmentally most similar to the survey area, and the discussions of its aims as a chronological framework, and of the temporalperiods proposed, are especially clear and concise, as well as complete.

In the following section, then, this scheme is the framework for a brief discussion of the culture history of the survey area. The sketchiness of this discussion is a reflection of the lack of previous research in the study area and the current state of Great Basin archeology, as discussed above. Often, not even simple trait lists (much less more complex syntheses) are available for the periods reviewed. It is hoped that this situation will be remedied in the near future.

Pleistocene Period (before 10,000 B.C.). This represents a temporal period reserved for evidences of human occupation in the New World prior to 10,000 B.C. To date, all cultural materials purported to fall in this period are either not securely dated or are not demonstrably of human manufacture (see Warren and others 1980:19).

Lake Mojave Period (10,000-8000 to 5000 B.C.). The Lake Mojave period represents the first well-documented occupation of the Great

Table 2

CULTURAL CHRONOLOGIES PROPOSED FOR THE SOUTHWESTERN GREAT BASIN

	WARREN et al. 1980:18-22	CRAIB 1978:30	HESTER 1973:123-128	WALLACE 1977:141a	NORWOOD & BULL 1978:44-70
Present	Shoshonean	Shoshonean	Late Prehistoric	Death Valley IV Panamint (Shoshone)	Period V (Ceramic Horizon) Period IV (Ceramic Horizon)
AD 1000	Saratoga Springs	Rose Spring/Eastgate	Rose Spring/Eastgate		
0	Gypsum	Elko/Gypsum	Great Basin Archaic	DVIII Saratoga Spgs	
1000 BC				Death Valley II Mesquite Flat	Period III
3000 BC	Pinto	Pinto			
5000 BC		?	Occupational Hiatus?	Occupational Hiatus	
7000 BC	Lake Mojave	San Dieguito	Western Pluvial Lakes Tradition	Death Valley I Nevares Spring	(Milling Stone Horizon) Period II (Projectile Point Horizon)
9000 BC		Paleo-Indian	Fluted Point Tradition		
11,000 BC	Pleistocene				Period I

Basin. The several cultural complexes associated wih this time period are characterized artifactually by a variety of spear and dart points (including Clovis, Lake Mojave, Cougar Mountain, Lind Coulee, and Silver Lake points; Fig. 1), crescents, "spiked gravers . . ., specialized scrapers of distinct types, some drills, leaf-shaped knives, and a few heavy core tools . . ." (Warren and others 1980:33). Milling tools seem to be absent.

Most known sites have been found near the shores of now dry pluvial lakes, which has suggested a focus on lacustrine resources to some (for example, Hester 1973:124). The validity of this distribution pattern has been questioned by Warren and others (Warren and others 1980:30, 34), who point out that archeologists have tended to search for early sites primarily along the shores of pluvial lakes. Also, both the artifact assemblages and the few faunal remains associated with Lake Mojave period sites suggest a more generalized hunting/fishing/gathering adaptation. Environmentally, the Lake Mojave period was associated with widespread xeric juniper parkland, with more abundant large fauna (including some now extinct forms), and with more abundant, economically useful plant life than now occurs in the region.

Pinto Period (5000 to 2000 B.C.). The Pinto period represents the time when the inhabitants of the Great Basin first had to adapt to environmental conditions like those that presently occur in the region. The major cultural complex of this period is the Pinto Basin complex. This complex is poorly defined, however, The difficulty lies in the fact that it is defined solely on the presence of Pinto Series points (spear and/or dart points of varying morphology; Fig. 2), and there is considerable disagreement over what constitutes a Pinto point (see Hester 1973:26-28; Warren and others 1980:35-44). Additionally, there are no well-dated Pinto sites earlier than 3000 B.C., and the complex may extend up to 700 B.C. (Hester 1973:28; Warren and others 1980:44).

Beyond projectile points, cultural assemblages of the Pinto period are not discussed as an industry in any detail in the literature. On the whole, they seem to differ relatively little from assemblages of the Lake Mojave period, except for the occurrence of milling stones. A generalized hunting and gathering adaptation is suggested (Brooks and others 1981:149; Coombs and others 1979:20).

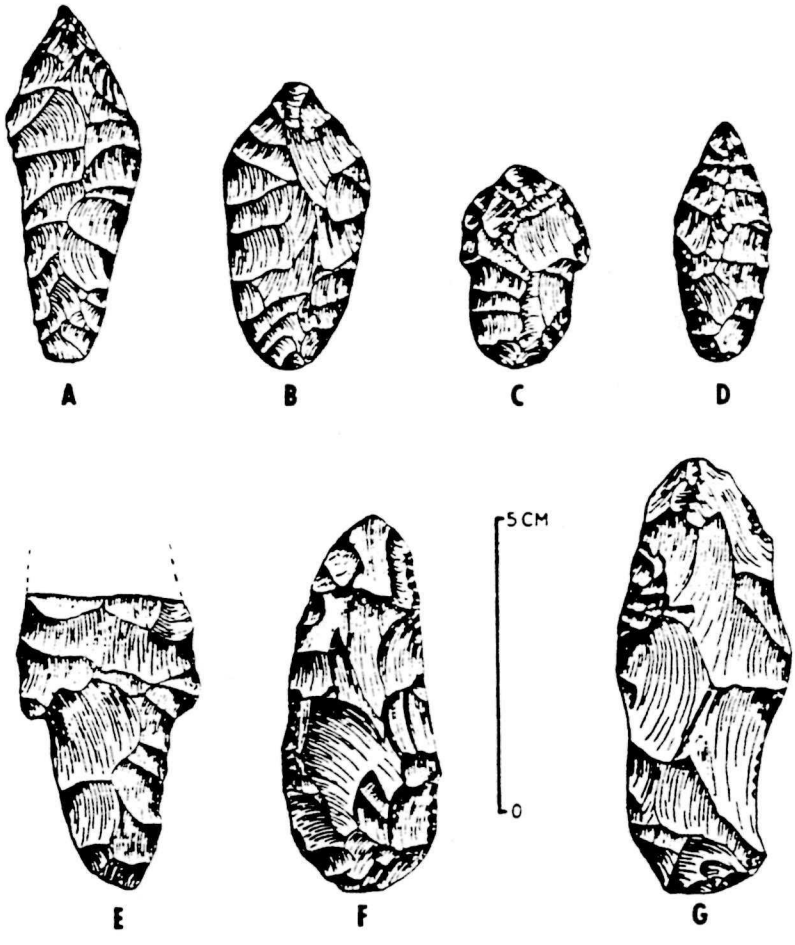


Figure 1. Characteristic artifacts of the Lake Mojave period (after Warren and others 1980:106-107).

A-B. Lake Mojave Points
C. Silver Lake Point
D. Leaf-Shaped Point
E. Large Stemmed Point
F. Large Leaf-Shaped "Knife"
G. Leaf-Shaped Biface

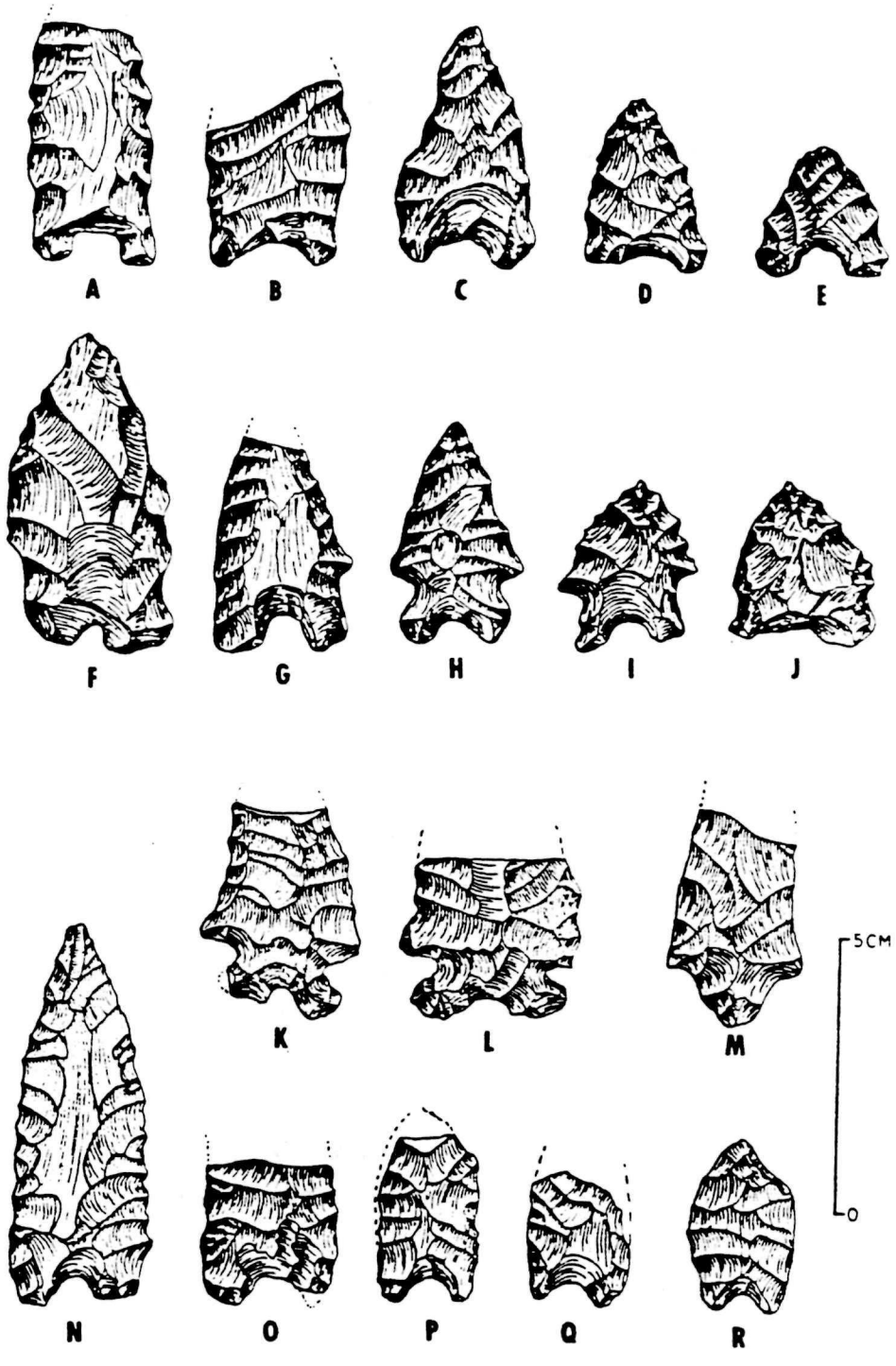


Figure 2. Characteristic points of the Pinto and Gypsum periods (after Warren and others 1980:108-109).

Pinto Period Points A-I: A-E. Shoulderless Pinto Points; F&J. Sloping Shoulder Pinto Points; G. Single Shoulder Pinto Point; H-I. Straight Shoulder Pinto Points.

Gypsum Period Points K-R: K-L. Elko-Eared Points; M. Gypsum Point; N-R. Humboldt Concave Base Point

Gypsum Period (2000 B.C. to A.D. 500). The Gypsum period, in many respects, seems to be a continuation of the way of life represented in the Pinto period. The projectile points continue to be large spear and/or dart points. These points, of the Humbolt and Elko series (along with Gypsum points), overlap with Pinto points in both time and morphology (see Fig. 2).

As with the preceding Pinto period, ". . . data for this period remain scanty, and the definition of the cultural assemblage for this period in the Mojave Desert remains a major problem" (Warren and others 1980:45). In general, however, artifact assemblages of this period are characterized by "a variety of knives, scrapers, drills, and other small stone tools" (Coombs and others 1979:21). Additionally, stone and shell beads, incised and painted pebbles, slate tablets, and split twig figurines have been noted at Gypsum period sites. Milling stones are also found at these sites, including mortars and pestles, which first appear during this period (Coombs and others 1979:21).

In the eastern Mojave, the influence of the Anasazi culture of the Colorado Plateau region is increasingly felt toward the end of the Gypsum period, and is marked by such traits as the aforementioned figurines, pithouses, Basketmaker III ceramics, and possibly the introduction of agriculture. The inhabitants of the western Mojave seem to have been less affected by these developments and to have maintained a hunting and gathering way of life (Warren and others 1980:45-47).

Little information is available concerning the distribution of either Pinto or Gypsum period sites. However, sites of these periods in the vicinity of the survey area have been found both at lower elevations, especially near water sources (both those that are currently usable and ones that are presently either dry or too salty for human use), and in the mountains (Coombs and others 1979:121-122; Wallace 1977:116-121; Warren and others 1980:47-48).

Saratoga Springs Period (A.D. 500 to 1200). Several cultural developments mark the Saratoga Springs period. Most noticeable throughout the Great Basin is the adoption of the bow and arrow. This is reflected by a decrease in projectile point size. In the region surrounding the survey area, these points are represented by the Rose

Spring and Eastgate series (Fig. 3). Also notable is the increasing spread of Anasazi artifacts (primarily ceramics), and possibly a few Anasazi settlements, through the eastern Mojave Desert, and as far north and west as Saratoga Springs (in southern Death Valley) and Ash Meadows (80 km southeast of the survey area). Beyond these developments, however, the general artifact assemblage, and probably the way of life, seem to remain essentially unchanged from that of the Gypsum period (Wallace 1977:122-129; Warren and others 1980:49-52).

Again, site distribution has not been well studied, but known sites near the survey area range from locations near water sources in the lower elevation deserts to rockshelters and open sites in the mountains. In the larger sites, probable habitation structures are marked by circles of small- to medium-sized boulders. Rock alignments (sometimes forming geometric designs) and petroglyphs have also been associated with the Saratoga Springs period occupation (Wallace 1977:127-128). Such features are difficult to date with certainty, however.

Shoshonean Period (A.D. 1200 to European Contact). This represents the period of occupation of the southwestern Great Basin by people who appear recognizable, archeologically, as ancestors of the Numic speaking Paiute and Shoshone living in this area at the time of European contact. At the time of contact, the survey area lay both within the territories of the Panamint Shoshone and Nevada Shoshone, and along the border between the two groups (Grosscup 1977).

The Shoshonean period is marked by the appearance of small, triangular arrow points, Cottonwood Triangular and Desert Side-notched points (see Fig. 3), and locally made plainware ceramics. For the region in which the survey area is located, these plainwares are grouped under the heading of Paiute and Shoshone utility wares (which include, or are synonymous with, Owens Valley Brownware) (Coombs and others 1979:22; Riddell 1951; Wallace 1977:130; Warren and others 1980:52-53). Artifacts found in assemblages of this period also include " . . . several varieties of well made knives . . ., . . . drills, gravers, small flake knives and scrapers, manos, metates, pestles, bedrock and/or portable mortars, Olivella shell beads . . ., bone beads, pendants, and

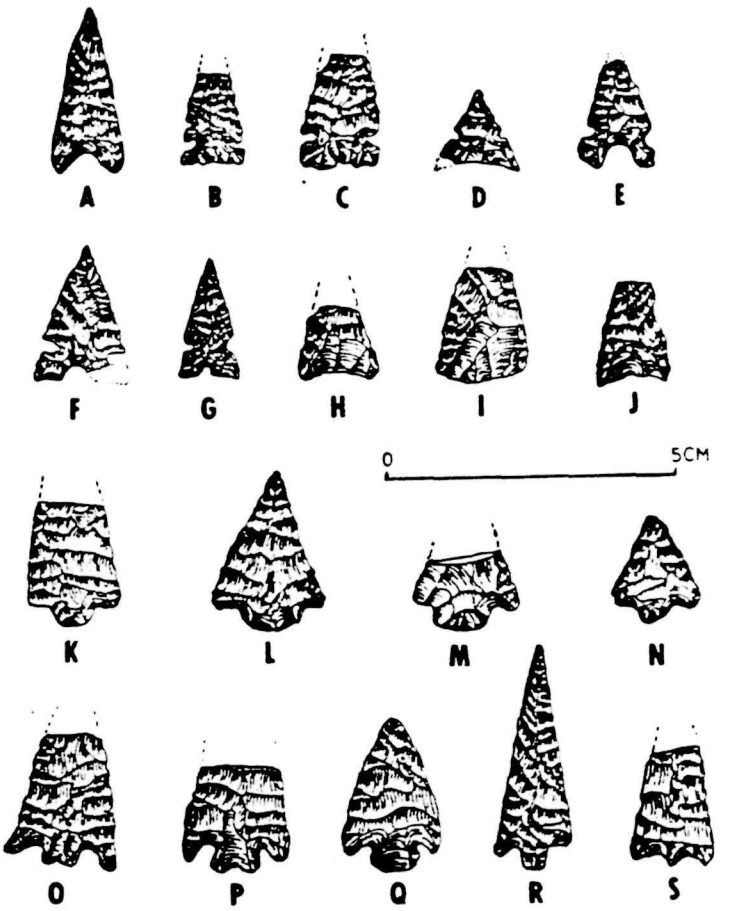


Figure 3. Characteristic points of the Saratoga Springs and Shoshonean periods (after Warren and others 1980:110-111).

A. Notched Base Triangular Point
B-G. Desert Side-Notched Points
H-J. Cottonwood Triangular Points
K-N. Eastgate Series
O-S. Rose Springs Series

occasional pointed tools, incised stones, slate pendants, and baked and unbaked clay figurines" (Coombs and others 1979:22).

Noted variations in the size, composition, and location of sites dated to the period have been ethnographically linked with variations in subsistence activities and related seasonal movements. Associated with these activities is a generalized pattern of site distribution of large base camps, or "villages," located in valleys or along valley margins, and smaller hunting and/or gathering camps located near specific resources, both at lower elevations and in the mountains (see Grosscup 1977; Wallace 1977:129-134; Warren and others 1980:146-160). Ethnographic overviews of the native inhabitants of this region can be found in Wallace (1977:32-92) and Warren and others (1980:135-192).

Summary. Extrapolating from the surrounding regions, occupation of the survey area may extend as far back as the earliest well-documented inhabitants of North America. Probably generalized hunters and gatherers, the people of the Lake Mojave period were adapted to a more xeric wooded environment than presently occurs in the region. Changes in archeological complexes of the region at the beginning of the Pinto period are probably associated with adaptation to concurrent environmental changes, resulting in conditions similar to those found in the region today. From the Pinto period up to the time of Euro-American contact, there seems to have been few changes in the way of life led by the inhabitants of this region. Neither technological innovations, such as introduction of the bow and arrow and ceramics at the end of the Gypsum period, nor contact with more sedentary, socially complex societies, such as the Anasazi, seem to have had an important effect on the cultures of this area. In all probability, the nature of the environment of this area has severely restricted the variety of successful adaptive strategies possible without access to resources from outside the region.

Culture History - Historic

The early history of the survey area, between the first Spanish exploration into the southern California deserts in 1540 A.D. and the Bullfrog strike of 1904, is virtually unknown. Occasional travelers and

pack trains used trails following the Amargosa River, but it is not known whether any of them went as far north as the survey area (Warren and others 1980:200-213). Even the "Forty-Niners," who accidentally discovered Death Valley, and the miners, who later worked there, basically ignored the survey area. The earliest known Euro-American living in the survey area was Montillus Murray "Old Man" Beatty. Beatty had married a Paiute woman and lived a semi-nomadic life, engaging in small-time ranching and horticulture (Weight and Weight 1980:13-17). The discovery of gold in Bullfrog Mountain in 1904 brought success to Beatty, who was involved with founding the town of Beatty, Nevada, and remained one of its prominent citizens until his death in 1908 at the age of 73.

The Bullfrog strike of 1904 represents the most important historic event to have any impact on the survey area. Lured by the promise of riches, prospectors flocked to the area, quickly followed by merchants, investors, land speculators, and a host of others. Towns and mining camps appeared virtually overnight and usually disappeared almost as rapidly. The first town founded was Amargosa (DEVA 83A-3) in September of 1904. Beatty was founded less than a month later. Bullfrog and Rhyolite were founded in November (Greene and Latschar 1981:3-22). All these towns were within a few miles of each other. In March 1905, Amargosa was dismantled and moved to Bullfrog. In 1906, Bullfrog was abandoned, and Rhyolite became the metropolis of the Bullfrog Mining District. At its height in 1908, Rhyolite had a population of around 8,000 and boasted multistoried buildings and banks of concrete and stone in its business district, a two-story school building, hotels, and even a swimming pool (Greene and Latschar 1981:3-22). In the end, however, the gold boom proved more speculative than real. Quite probably much more money was made (and lost) selling mining stock than in actual mining. A few mines were actually developed to the point of producing ore, and two, the Montgomery-Shoshone and the Homestake King, actually became major producers for a short time (Greene and Latschar 1981:12, 123-126). Profitable ore bodies throughout the district were not as extensive as originally anticipated, however. One by one, the mines closed, and, by 1912, Rhyolite was all but abandoned. Beatty, more

strategically located on the Amargosa River and on the major route between Las Vegas and Reno, Nevada (now U.S. Highway 95), did not suffer the fate of neighboring towns. It is still thriving today, the only surviving settlement of the Bullfrog gold rush.

In 1933, the survey area became part of Death Valley National Monument. While there is evidence that monument visitors and others have passed through parts of the survey area, most people confine their visits to Death Valley proper. There have also been sporadic attempts to revive mining in the Bullfrog Mining District. All have been unsuccessful so far (see Greene and Latschar 1981:1-185). In many ways, Euro-American history of this area differs little from the prehistoric occupation, a mobile population with an overall low density, occupying temporary settlements, located to take advantage of specific resources, and abandoned when the resources were exhausted.

Chapter 4
METHODS

As the purpose of this project was to locate and to evaluate cultural resources along a fence right-of-way, survey methods were comparatively simple. Based on the information provided by the Death Valley National Monument staff that disturbance during the fencing project would be limited to fence construction (hand-driving steel posts, and stringing barbed wire) and foot traffic (with vehicular traffic restricted to existing roads), it was decided that we should only survey a relatively narrow corridor along the fence right-of-way (that is, along the designated segments of the monument boundary).

We were able to locate and follow the boundary through the use of topographic maps. However, our accuracy was greatly improved by the fact that we were able to follow a series of markers erected during a recent survey of the monument boundary. These markers consisted of steel posts, set at approximately ¼-mile intervals, and consecutively numbered aluminum caps, set in cement, located at approximately ½-mile intervals (at every other post). Although the next marker could not usually be seen from the preceding one (even with an 8x monocular), it was possible to follow a compass bearing from one marker until the next was sighted, maintaining a high degree of accuracy with respect to the location of our survey corridor. The only area in which this procedure was not possible was from the crest of the Grapevine Mountains, eastward about 6 km (4 miles) (see Map 3, Section EF). For unknown reasons, there were no markers in this area. Due to the high relief and detailed (7.5 minute) topographic maps, however, we were still able to follow the monument boundary with reasonable accuracy. This accuracy was verified when several, difficult to see, General Land Survey markers identifying the township boundary that the monument boundary follows were located in this area.

With respect to specific survey procedure, we followed the entire right-of-way on foot, examining 30-m wide corridors, on each side of the mounument boundary. Generally we proceeded from our vehicle, parked on existing roads, to some predetermined point along the boundary, recording all isolated artifacts and features, and marking all

sites with flagging tape. On our return to the vehicle, we recorded any sites located on the outward trek. In the Grapevine Mountains (see Map 3, sections EF and FG), we followed a slightly different procedure. Due to the inaccessability of the area, we were flown by helicopter to a point near the crestline of the mountains and, over the next two days, we surveyed the area on the way back to our vehicle (parked on a road about 15 km from our starting point), recording all cultural material as we encountered it. On this part of our survey, we were accompanied by Ranger Jim Unruh, whose assistance and company were greatly appreciated.

Site Recording

Sites were rather loosely defined in the field as clusters of cultural material, that is, loci which had a noticeably higher density of artifacts and cultural features than the surrounding area and were spatially distinct from other such clusters. Such a definition is obviously subjective, and the identification of sites will vary according to the background density of cultural material in a given area. Within the limited context of this survey, however, such a definition was more than adequate for the identification of loci of human activity, and the separation of such loci from cultural "background noise" in the form of isolated artifacts and features. Within the context of this survey, our definition of a site translates, in quantative terms, as a locus of cultural material containing 10 or more artifacts, with or without features, within a spatially distinct area.

Each site located on this survey was recorded on Western Archeological and Conservation Center (WACC) site forms. A sketch map was drawn of each site. Each site was located on U.S. Geological Survey topographic maps. Site maps and site location maps are reproduced in this report as figures 4-14 in Chapter 5 and maps 2-4 in Chapter 1. With the exception of DEVA 83A-3 (the town of Amargosa), a white nylon stake was driven into each site. Attached to each stake is a cardboard and foil tag with the site's field number. The stakes served as a mapping point for the site maps and are intended to aid in relocation of sites, should it be necessary. Finally, color slides were taken of all sites identified. Field numbers were assigned to sites by attaching

consecutive numbers to the WACC project designation for this project--in this case, DEVA 83A.

Cultural material not within the boundaries of sites was recorded in a different manner. Isolated artifacts and a single possible petroglyph were assigned consecutive IA numbers. Isolated rock clusters and cairns were given C numbers. The two isolated mine shafts located were given M numbers. All such isolated cultural materials was recorded on topographic maps (see maps 2-4). Additionally, all such materials were listed, briefly described, and located in relation to the previously mentioned, numbered, aluminum boundary markers. This listing is reproduced, with references to maps 2-4, in Table 3 (Chapter 5). Finally, for a few artifacts (for example, IA-25 - possible petroglyph; and IA-40 - projectile point), it was felt necessary to record more information than allowed by the procedure described above. In these cases, a WACC Isolated Artifact Form was completed.

All original field data collected are on file at the Western Archeological and Conservation Center, Tucson, Arizona. These data include site forms, site maps, photographs, isolated artifact forms and list, field topographic maps showing site locations, and field notes written in the course of the survey.

Chapter 5
DESCRIPTION OF SITES AND ISOLATED FINDS

Prehistoric Sites

DEVA 83A-1 (Fig. 4). This site is a small lithic scatter, consisting of two compact chipping stations. One station consists of a large flake scraper of yellow chert, with a few associated noncortical flakes of the same material--debitage from production and/or resharpening of the scraper. The other station is an irregular flake core or unfinished tool blank of relatively coarse white chert, with a few associated noncortical flakes of the same material. The total area of the site is estimated at 128 m^2. The lithics observed are lying on, or slightly embedded in, a patch of heavily patinated desert pavement. The heavy patination on the continuous desert pavement strongly suggests that it represents a land surface that has not been disturbed for a very considerable length of time. The lack of patination on the lithics indicates that they were deposited after the development of this land surface. For this reason, there are probably no subsurface cultural deposits associated with the site.

DEVA 83A-1 is located about 15 m west of the monument boundary in creosote/shadscale scrub vegetation. At an elevation of 3,500 feet, it is 5 m southwest of a small wash, along the southern side of an eastward trending alluvial fan (see Map 4, Section IJ). The alluvial fan is one of a series of broad, gently sloping fans that extend eastward from the Grapevine and Funeral mountains. The fans coalesce into a bajada that forms the western margin of the Amargosa Desert.

DEVA 83A-2 (Fig. 5). This is an extensive, low density lithic scatter with an estimated total area of 3,400 m^2. No distinct chipping stations were observed, but three loci were noted with higher densities of lithics than the rest of the site. The site primarily consists of scattered noncortical flakes of a variety of raw materials. Only two cores and no retouched tools were observed. The most common raw materials represented on the site are a dark red banded and nonbanded jasper, and white or light pink (heated?) chalcedony. Other lithic

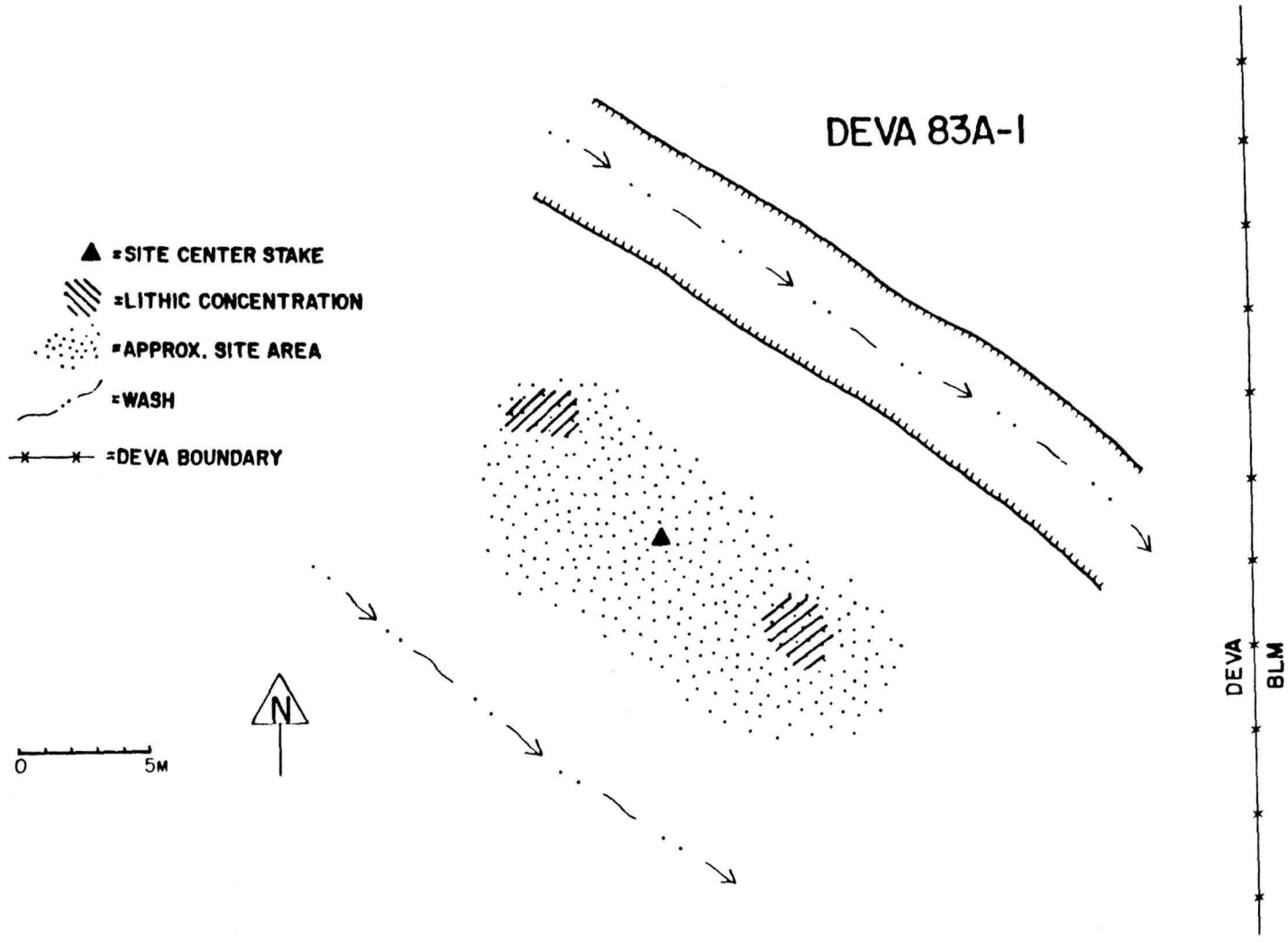


Figure 4. Plan view of site DEVA 83A-1.

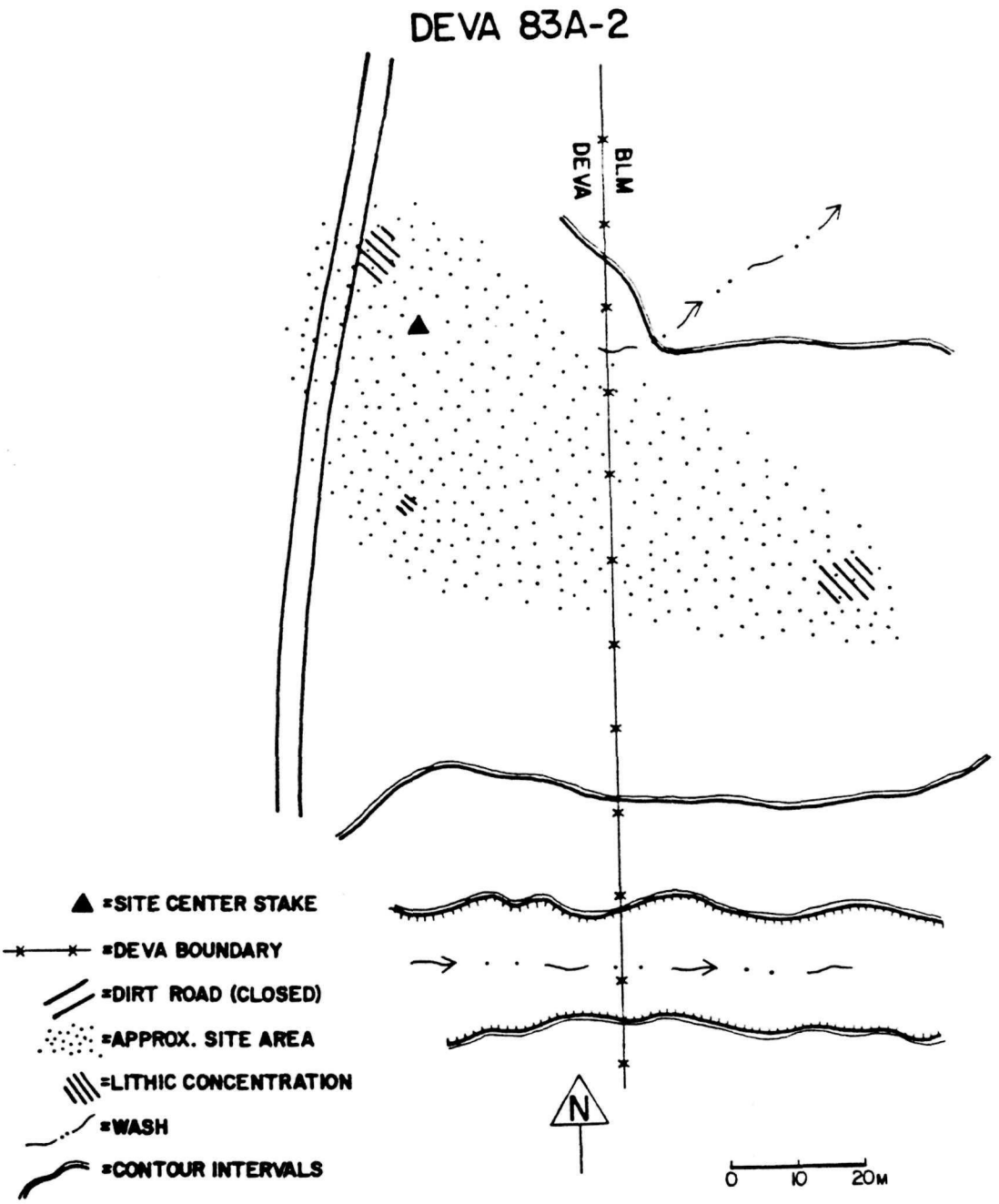


Figure 5. Plan view of site DEVA 83A-2.

raw materials noted include yellow chert, quartzite, and a white, coarse-grained chert/silicious limestone. This latter material may be cortical material for the chalcedony or chert, but observed flakes had flake scars over their entire exterior surfaces. The observed lithics are lying on, or slightly embedded in, heavily patinated desert pavement. For the same reasons discussed in the description of DEVA 83A-1, there are probably no subsurface cultural deposits associated with the site.

DEVA 83A-2 is nearly centered on the monument boundary, extending approximately 40 m on either side. At an elevation of 3,500 feet, it is in creosote/shadscale scrub vegetation, near the northern edge of the alluvial fan previously described for DEVA 83A-1 (see Map 4, Section IJ). The site is about 100 m north of a major wash that drains eastward from the Grapevine Mountains (about 4 km west) to the Amargosa River (about 11 km east). A road, now closed, has disturbed the western edge of the site.

DEVA 83A-5 (Fig. 6). This site is a very small lithic scatter that probably represents a single chipping station. Encompassing an estimated area of 212 m^2, it consists of two fragments of a single, white chalcedony core, and a few noncortical flakes of the same material. The flakes appear to have been removed from the core. The lithics are lying on, or are slightly embedded in, a desert pavement surface, and there appear to be no subsurface cultural deposits.

DEVA 83A-5 extends from the monument boundary eastward about 20 m. It is 15 m southeast of boundary marker #107, and a few meters south of a dirt road. Tire tracks cross the site. The elevation of the site is 3,600 feet. It is in creosote/shadscale scrub vegetation, in the central reaches of a gently sloping bajada that extends southeastward from the Grapevine Mountains and Bullfrog Hills, forming the northwestern margin of the Amargosa Desert (see Map 4, Section IJ). Additionally, the site is approximately 75 m north of a major wash that drains southeastward from the Bullfrog Hills and fans out on the bajada about 4 km east of the site.

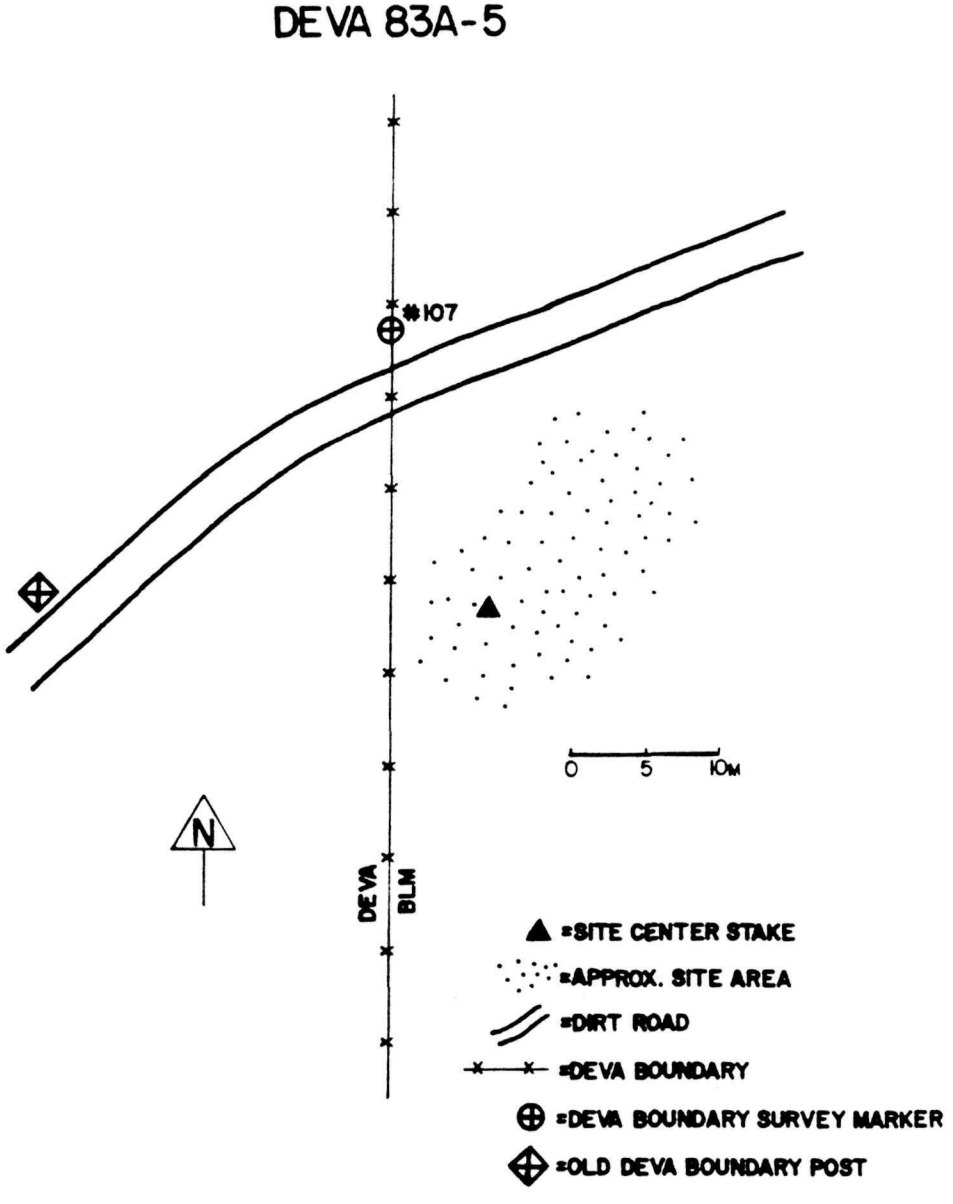


Figure 6. Plan view of site DEVA 83A-5.

DEVA 83A-7 (Fig. 7). This is a small rockshelter 13 m long and 4 m deep. A narrow terrace, a maximum of 5 m wide, extends in front of the shelter. A steep talus slope fronts the terrace. The roof of the shelter is heavily soot-blackened. The floor is littered with pinyon nut shells (from rodent and/or human activity), charcoal, and partially burned and unburned wood. A pile of brush and wood separates the northeastern third of the shelter from the remainder. A grinding slab and a sandal (of plant fiber cordage) are lying on the shelter floor. A few flakes were noted, scattered across the shelter floor, terrace, and talus slope. Most are of white chalcedony. Two are of obsidian, including one retouched primary flake. A single, plainware rim sherd (Paiute/Shoshone Utility Ware) was observed on the talus slope. The shelter floor and the terrace in front are composed of unconsolidated sediment (silt, sand, and roof spalls) of unknown depth. Buried cultural material seems very likely.

A low, shallow extension of the shelter stretches 11 m to the northeast from the main shelter. The laterally sloping floor is also of unconsolidated sediments, and on its surface are pinyon nut fragments and fragments of charcoal and wood. In its present state, the extension does not appear suitable for human habitation (sloping floor, low ceiling, and shallow depth). Additionally, the roof is not soot-blackened. Most likely, the cultural material is a result of alluvial transport of material from the main shelter. The extension could also have been used as a storage or midden area by the main shelter's inhabitants. Finally, the extension may have once been more suitable for human occupation, before sediment accumulation reduced the height of the opening.

At an elevation of 7,100 feet, the shelter is located in south facing cliffs, approximately 100 m north of the monument boundary (see Map 3, Section EF). The cliffs are along the northern side of a northeast trending valley, less than 1 km east of the crestline of the Grapevine Mountains. The valley is part of the upper reaches of a major, northeast trending, valley system that drains the Grapevine Mountains and empties into Sarcobatus Flat. The rockshelter is in pinyon/juniper woodland. The trees become denser immediately upslope

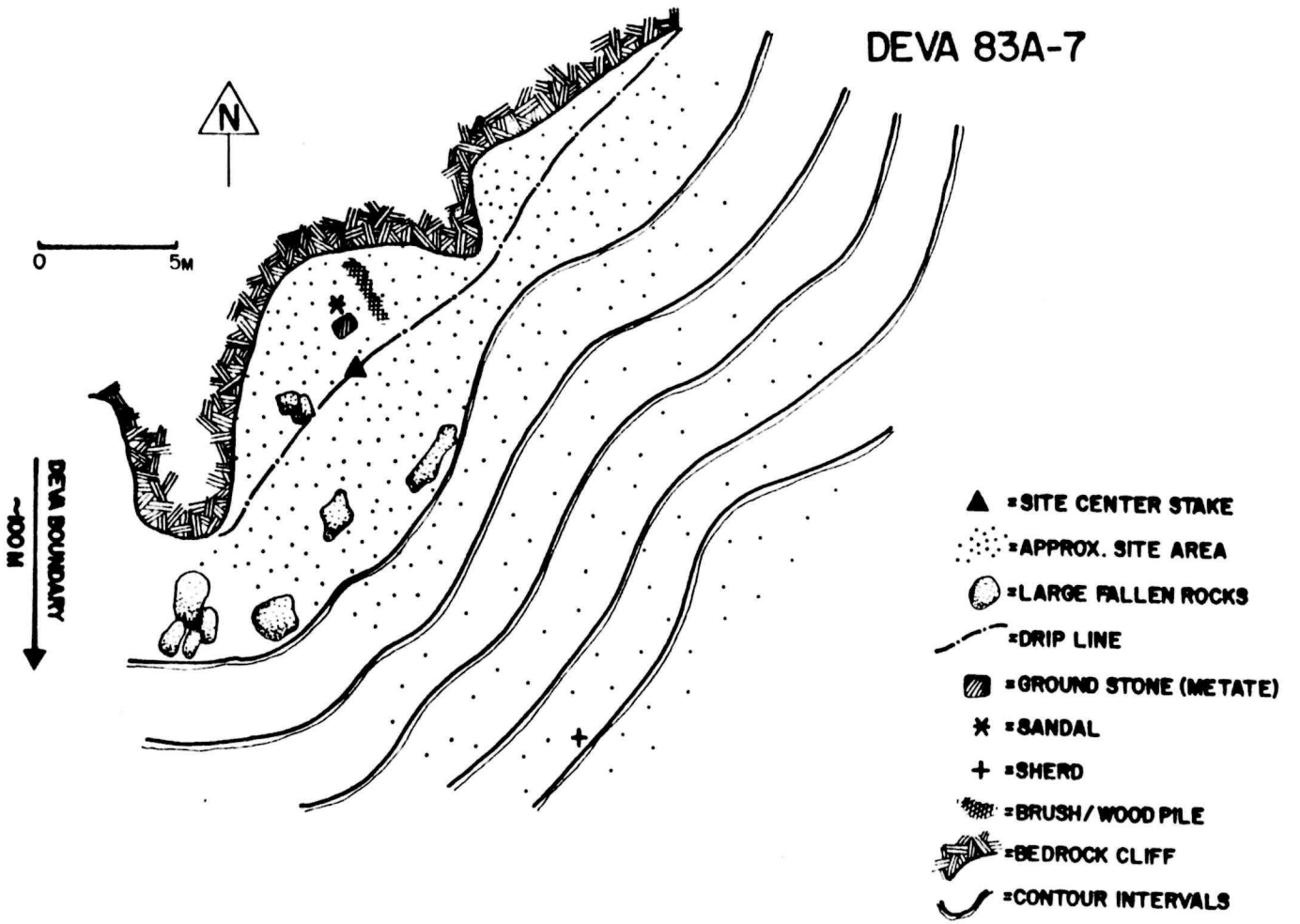


Figure 7. Plan view of site DEVA 83A-7.

from the shelter, and to the south and west. The woodland gives way to sagebrush scrub vegetation less than 1 km down valley, to the northeast.

Besides providing access to resources of the pinyon/juniper zone, the shelter also affords an excellent view of the surrounding terrain. From the shelter itself, one can look down the previously mentioned valley system and across Sarcobatus Flat. From a peak on the crestline of the Grapevine Mountains (0.7 km west of the shelter), there is an unobstructed view to the west, across the northern end of Death Valley, to the Last Chance and Panamint ranges on the valley's western edge. To the east, one can look across Sarcobatus Flat to the Bullfrog Hills, the Oasis Valley, and the mountains beyond. Likewise, the view to the north is unobstructed for many kilometers.

DEVA 83A-8 (Fig. 8). This represents a small, limited activity site at the base of a bedrock prominence. With an estimated total area of 456 m^2, it primarily consists of two cultural loci--a lithic scatter on one side of the prominence and a sherd scatter on the opposite side. The lithic scatter seems to predominantly represent a single, unsuccessful knapping event, consisting of a broken biface and noncortical debitage from its reduction--all from a gray-banded chert. The sherd scatter is a cluster of plain brownware sherds (Paiute/ Shoshone Utility Ware) that may well represent a single broken vessel. Additional cultural material noted at the site includes a few noncortical flakes of white chalcedony and a partially burned, ax-cut log. Judging from the angle and small size of the cut marks, the log may well have been cut with a stone ax.

Unconsolidated sediments occur throughout the site area. These appear to include alluvial silt, sand, and gravel from a small drainage adjacent to the site; colluvial sediments from the valley side immediately above the site; and spalls from the bedrock prominence. Although there are no direct indications of subsurface cultural deposits, such may occur at the site.

DEVA 83A-8 is approximately 20 m south of the monument boundary, at an elevation of 6,600 feet (see Map 3, Section EF). The bedrock spur, which the site surrounds, protrudes from the base of the northern wall of an eastward trending valley. DEVA 83A-7 is also located in this

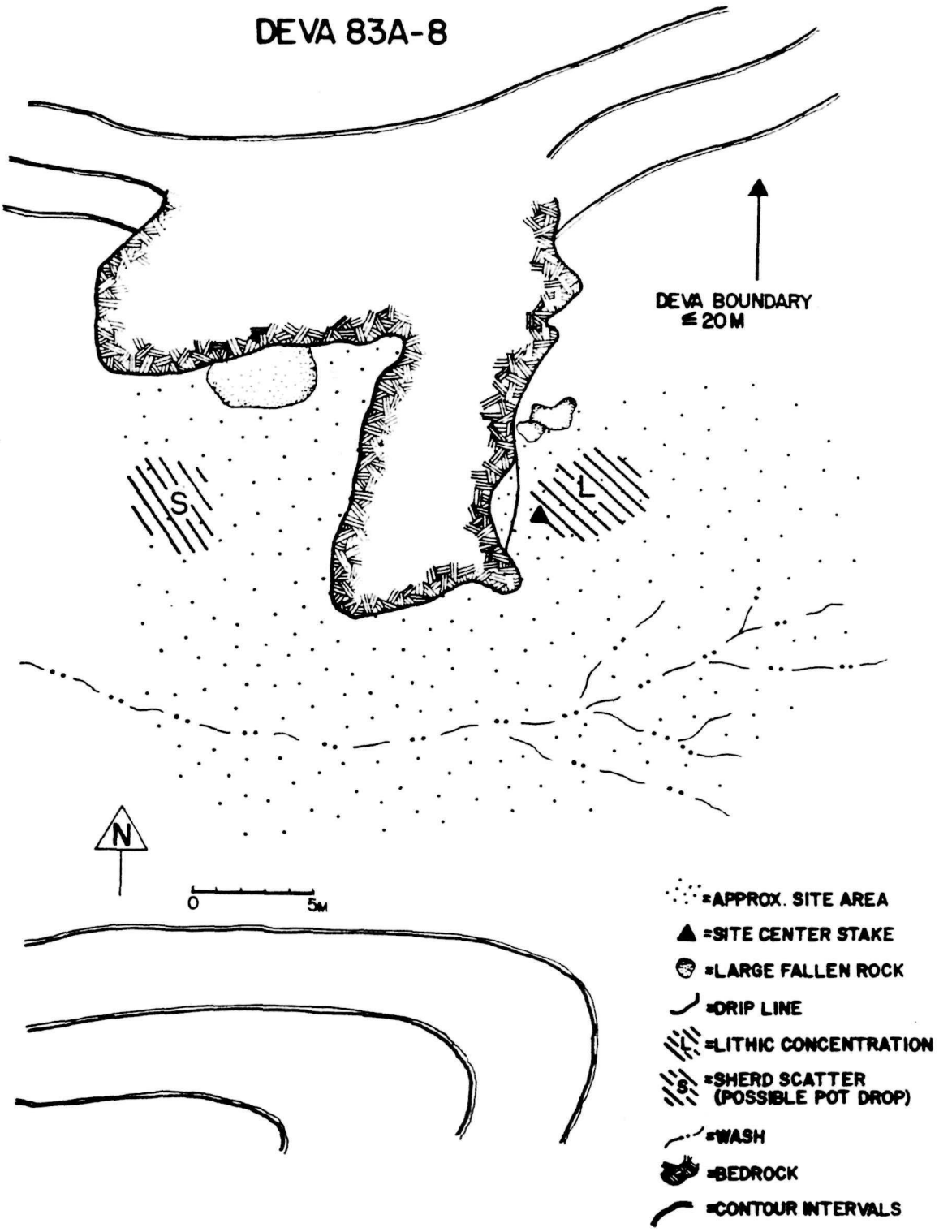


Figure 8. Plan view of site DEVA 83A-8.

valley (0.6 km to the west). The site is located about 100 m west of the confluence of two major valleys draining the northern Grapevine Mountains. This valley, as well as several others, also meet at this confluence. The small basin thus formed is at the head of the major valley system described for DEVA 83A-7.

The site is on the lower fringes of the pinyon/juniper woodland. Except for an occasional isolated tree, the woodland gives way to sagebrush scrub only a few hundred meters down valley, to the east and northeast.

DEVA 83A-9 (Fig. 9). With an estimated total area of 3,775 m^2, this site appears to be a large habitation site/base camp. Several features were noted on the site. These include: Feature 1, a semicircle of small boulders that probably represents the foundation for a habitation structure; Feature 2, a less regular alignment of small boulders that also probably represents a structure foundation; and Feature 3, a cluster of cobbles that may be the remains of a hearth. Ground stone is common on the site and includes at least five whole or partial metates/grinding slabs, a large boulder with a grinding slick, and two shaped manos. Plain brownware sherds (Paiute/Shoshone Utility Ware) are scattered throughout the site. Lithics are numerous. All stages of lithic manufacture are present, including cores, primary and secondary flakes, noncortical flakes, and retouched tools. Among the tools are a scraper on an obsidian flake and at least 12 bifaces or biface fragments. White chalcedony is the most common lithic raw material at the site, closely followed by a gray to gray-green chert. Obsidian is less common but not rare.

The site is covered with unconsolidated alluvival and colluvial sediment. Predominantly silt and sand, the finer matrix also contains gravel and larger pieces of eroding igneous bedrock. The relatively dark color of the sediment, as well as the partial burial of site features, strongly suggests that buried cultural material is present on the site.

A pie pan and a Worchestershire Sauce bottle were also found on the site. These are probably associated with a mine (M2) located about 100 m west of the site.

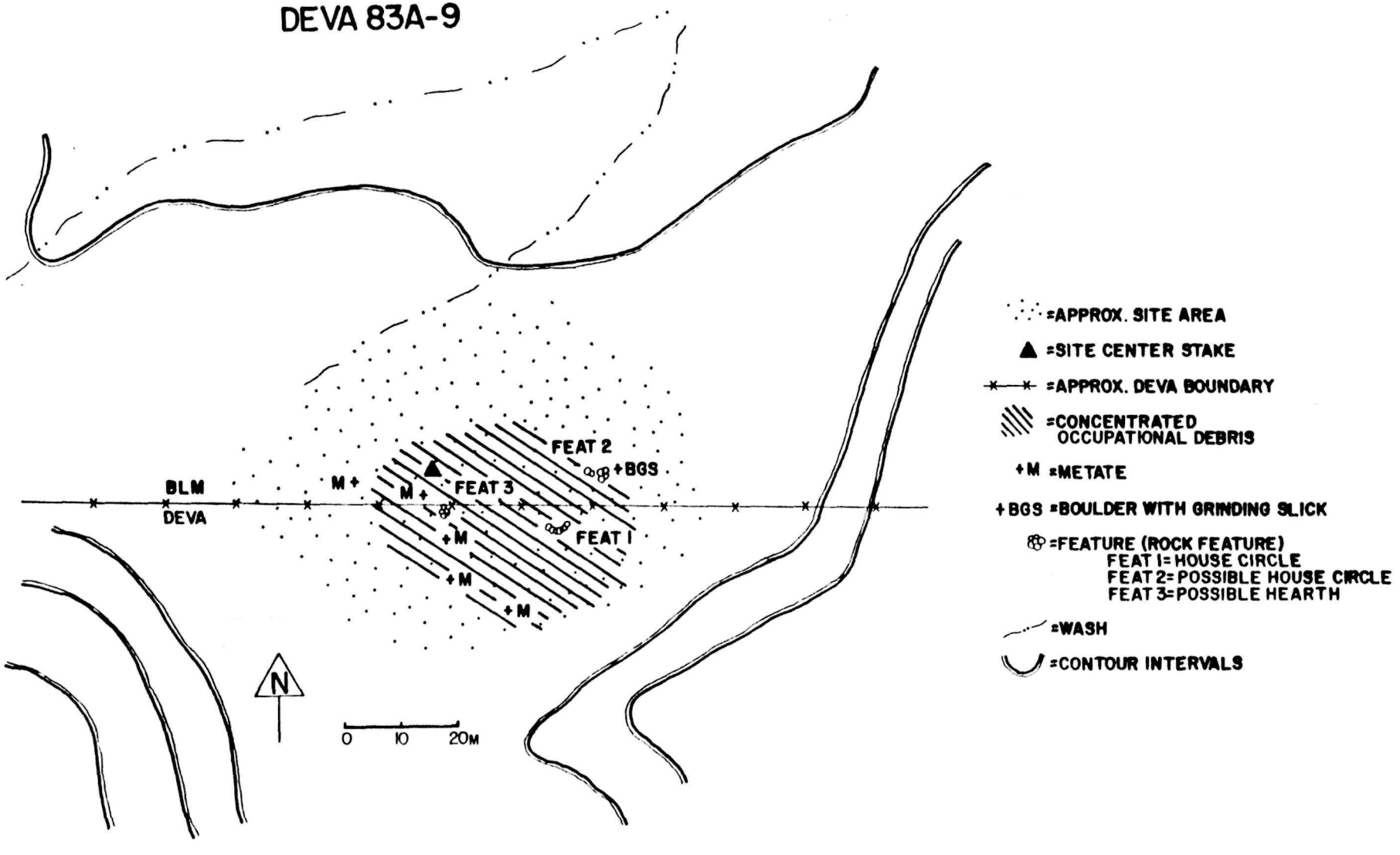


Figure 9. Plan view of site DEVA 83A-9.

DEVA 83A-9 is approximately centered on the monument boundary, extending 20-40 m on either side. At an elevation of 6,200 feet, it is located near the upper end of a long, relatively low ridge. The ridge projects northeastward into the major valley previously mentioned in the descriptions of DEVA 83A-7 and 8. Immediately below DEVA 83A-9 (northeast), the valley broadens to more than 1.5 km in width and is bordered by well-defined alluvial terraces. Extending for about 1 km to the southwest from the site is a small box canyon, framed by cliffs, that may contain rockshelters (see Map 3, Section EF).

The site is in predominantly sagebrush scrub vegetation. A few isolated pinyons and junipers occur on the site, however, and pinyon/juniper woodland begins at a slightly higher elevation less than 1 km to the southwest of the site. Small, presently intermittent, streams drain the valleys adjacent to the site. Active springs occur at Willow Springs (only one of many "Willow Springs" in the monument and vicinity) about 0.5 km northwest of the site. Considering the local topography, such springs may also have occurred even closer to the site in the recent past.

In summary, the site is well situated in an ecotonal area. There is access to the pinyon/juniper zone and the sagebrush zone, as well as permanent water, in the immediate vicinity of the site. Six kilometers to the northeast, the broad valley (at the head of which the site is located) opens onto the alluvial fans that border the southwestern margin of Sarcobatus Flat, providing additional access to resources of the creosote/shadscale zone.

DEVA 83A-10 (Fig. 10). This site is a very small rockshelter, about 2 m wide and 2 m deep. A grinding slab is partially buried directly in front of the shelter opening, and a white chalcedony flake was noted on the slope in front of the shelter. Fragments of charcoal and partially burned and unburned wood are scattered across the floor of the shelter, and the roof is soot-blackened. Unconsolidated sediment, composed of alluvial/colluvial sand and gravel with spalls from the shelter and the bedrock outcrop in which it is located, covers the floor of the shelter and forms a steep slope down to the wash 10 m in front (southeast) of the shelter. Buried cultural deposits are quite

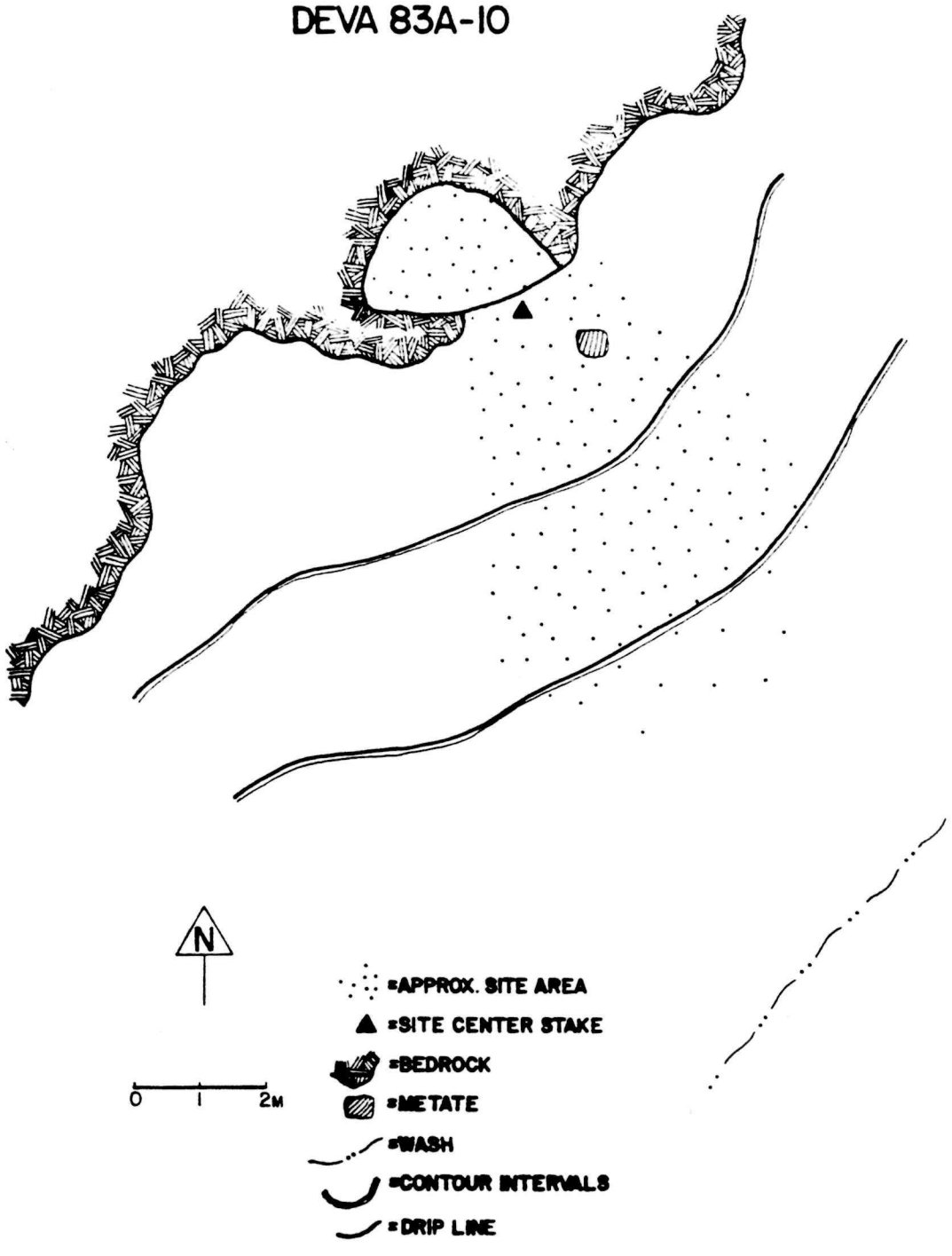


Figure 10. Plan view of site DEVA 83A-10.

possible, and are likely considering the fact that the grinding slab was partially buried.

DEVA 83A-10 is about 15 m north of the monument boundary, at an elevation of 5,600 feet. It is located in bedrock outcropping along the western wall of an arroyo. Headward erosion of the arroyo into bedrock has formed a dry fall and a tiny box canyon in the vicinity of the site. The floor of the wash that formed the arroyo is about 10 m southeast of the site. The wash is one of two major washes that drain a small catchment basin that spreads to the south, east, and west of the site and is about 1 km in diameter (see Map 3, Section EF). These two washes converge about 1 km north of the site and empty into the broad valley, described in the discussion of DEVA 83A-9.

The vegetation in the vicinity of the site is sagebrush scrub with joshua trees. The arroyo itself supports a slightly lusher vegetation that includes unidentified shrubs and herbaceous annuals.

DEVA 83A-11 (Fig. 11). This site is an extensive, low density lithic scatter. At least 4,900 m^2 in estimated area, it lies along the top of a long narrow ridge. The lithics tend to occur in fairly separate loci, probably representing discrete occupations, activities, or knapping events. This distribution pattern made the boundaries of the site difficult to delineate with certainty, and the site may extend considerably farther along the ridgetop than is indicated on Figure 11. A single core, a few cortical flakes, and a moderate number of noncortical flakes (more than 25) were observed.

Several lithic raw materials were noted, each tending to occur in one or more clusters, discrete from each other, lending support to the interpretation of the loci suggested above. Fine-grained red rhyolite and red jasper were the most commonly observed raw materials, followed by white chalcedony and possibly a few pieces of quartzite.

Variation in the amount of surface patina was observed on the lithics. Most exhibit no apparent patina. One or two have a lightly patinated surface, and a single blade was heavily patinated. Although it is not possible to obtain any accurate age estimate for the lithics based on patina alone, such variation indicates a substantial time depth for human presence at this site.

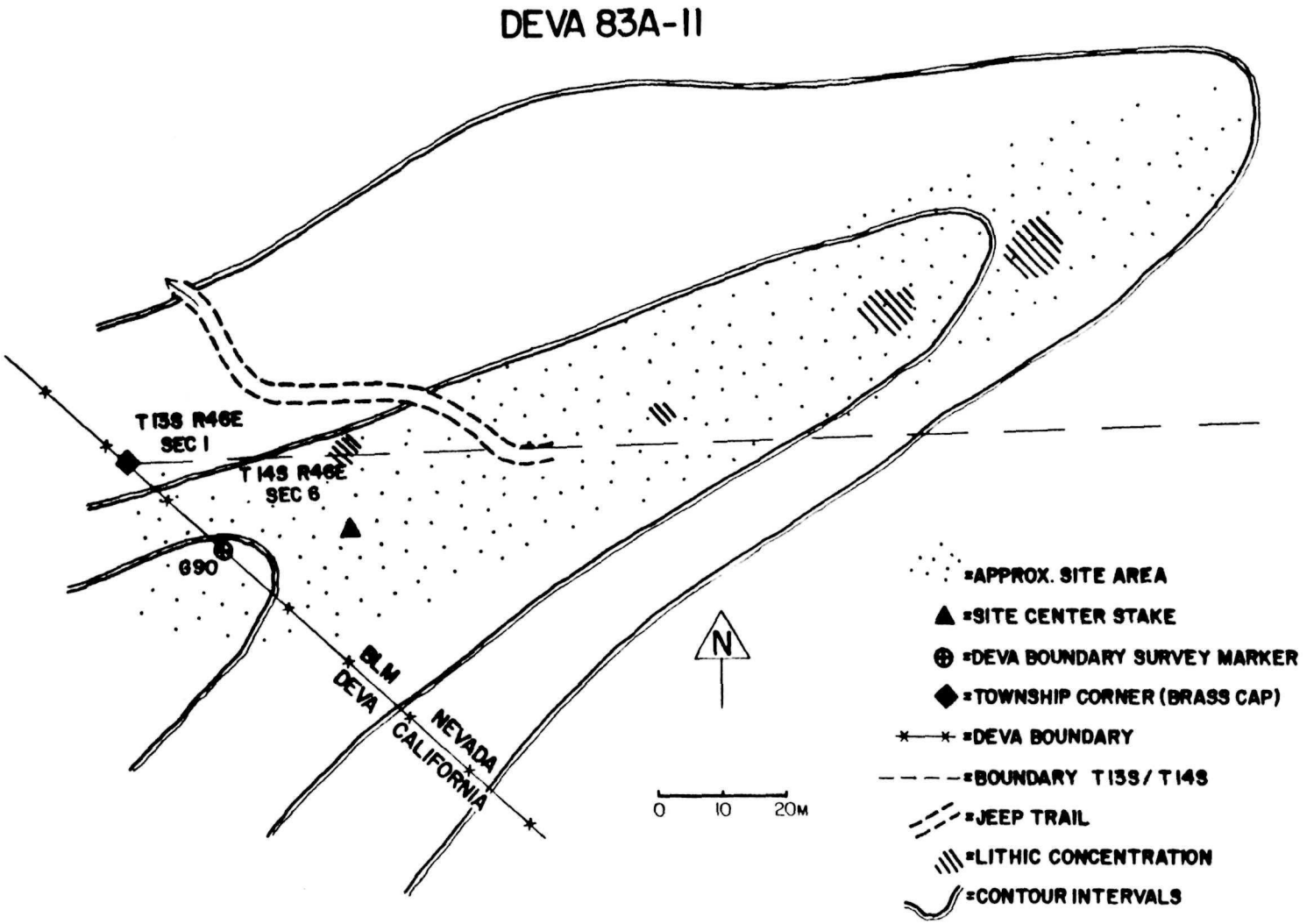


Figure 11. Plan view of site DEVA 83A-11.

The observed lithics are lying on, or are slightly embedded in, moderately to heavily patinated desert pavement. Additionally, the site is on an exposed ridgetop where sedimentation does not usually take place. Hence, it is unlikely that there are subsurface cultural deposits associated with this site.

DEVA 83A-11 extends for at least 20 m southwest of the monument boundary and 170 m to the northeast. At an elevation of 3,900 feet, it is in creosote/shadscale scrub vegetation. As previously mentioned, the site is located along the top of a long narrow ridge. The ridge extends eastward from the base of the Funeral Mountains and appears to be a remnant of an old, highly dissected alluvial fan (see Map 4, Section IJ). A major wash flows along the southern side of the ridge. It drains generally eastward onto a gently sloping bajada that forms the northwestern margin of the Amargosa Desert, and eventually into the Amargosa River, about 11 km east of the site.

Numerous jeep trails can be seen in the area. One set of tire tracks is visible along the northern edge of the site, and it is possible that less noticeable vehicle disturbance may also have affected the site.

Historic Sites

DEVA 83A-3 (Fig. 12). This site probably represents the townsite of Amargosa and the Big Bullfrog Mine. Over 45 ha in area, the site extends up to 200 m east and at least 300 m west of the monument boundary, and follows the boundary for about a kilometer. The very large size of the site and the restricted nature of this survey prohibited detailed mapping and recording of features and artifacts. However, features noted on the site include rock cairns, rock clusters that were probably structure foundations, and a mine with associated tailings and structural remains. Historic trash litters the site. Artifacts observed included cans, parts of an iron stove, bed springs, a metal pail, the top of a steel drum, corrugated iron, bottles and glass fragments, crockery, miscellaneous pieces of wood, and a narrow tire. Additionally, a white chalcedony flake (IA-24) was found on the site.

Both the town of Amargosa and the Big Bullfrog mine were founded as a result of a gold discovery on Bullfrog Mountain in the summer of 1904.

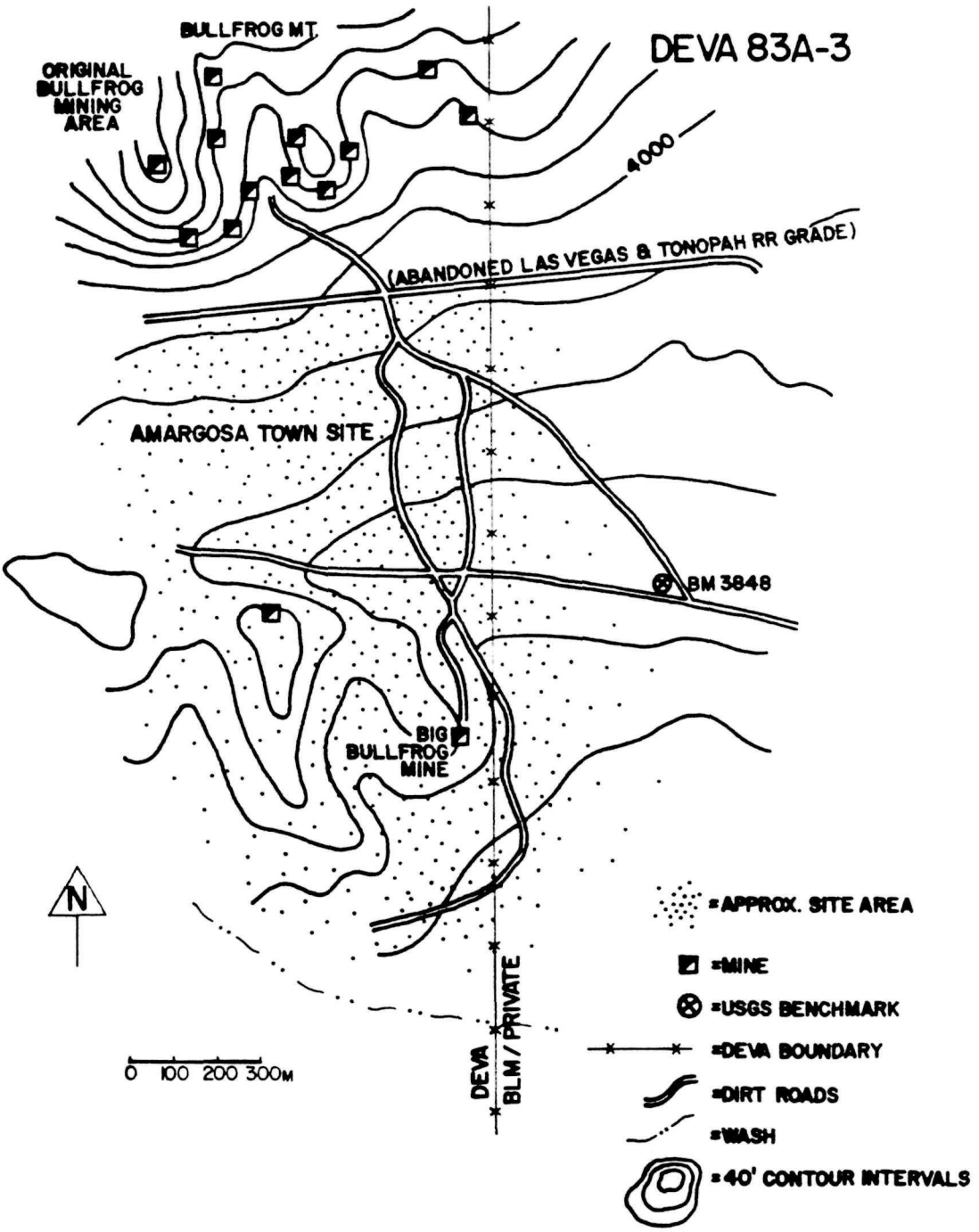


Figure 12. Plan view of site DEVA 83A-3.

Amargosa was founded on September 30, 1904, about 0.5 km south of the original strike, which became the Original Bullfrog Mine. By November of 1904, Amargosa ". . . boasted three stores, four saloons, two feed lots, restaurants, boarding houses, lodging houses, a post office, and 35-40 other tent buildings" (Greene and Latschar 1981: 3-4). In March 1905, the entire town was moved to the town of Bullfrog, about 4 km to the east (Greene and Latschar 1981:3-4). Thus ended the first town founded in the region and the one located closest to the original Bullfrog strike.

According to Greene and Latscher (1981:45-48), the Big Bullfrog Mine began as the Mammoth claim, located by M. M. "Old Man" Beatty in August 1904. He soon sold the claim, and the new owners incorporated the Big Bullfrog Mining Company in 1905. Work began, and by the end of 1905, a 120-foot deep shaft had been excavated. Although the finding of "good ore" was originally recorded, it was either scarce or, in reality, nonexistent. The financial basis of the mine was seriously weakened as a result of the San Francisco earthquake and fire of 1906 (headquarters of the financiers backing the mine). Work continued sporadically at the mine until March 1907, when it closed permanently.

The site of Amargosa is on a gently sloping bajada, in an embayment between Bullfrog Mountain (on the north) and a long ridge (on the south and west) that extends southeast from the southwestern edge of the mountain. The mine is located on the easternmost end of the ridge. The elevation of the site varies from 3,800 to 3,950 feet. It is located in creosote/shadscale scrub vegetation. Small washes drain the site, generally toward the southeast, where they fan out on the bajada that forms the northwestern margin of the Amargosa Desert (see Map 4, Section HI).

Numerous roads and jeep trails crisscross the site. The age of these roads could not be determined, although some probably date to the founding of the town and the mine. One road, bordering the northern edge of the site, follows the abandoned grade of the Las Vegas and Tonopah Railroad, which played a significant role in the development of the Bullfrog Mining District and the history of the towns of Rhyolite and Beatty to the east of the survey area.

DEVA 83A-4 (Fig. 13). This site is a small scatter of historic trash, with an estimated total area of 625 m^2. A small shallow pit, with associated spoils pile, was the only cultural feature noted at the site. Artifacts on the site include a 55-gallon steel drum, a section of stove pipe, two sections of steel pipe (one of which is driven into the ground), and various pieces of wood, including two railroad ties. The function and historic significance of the site is unknown.

DEVA 83A-4 is 40-45 m west of the monument boundary, at an elevation of 3,750 feet. It lies in creosote/shadscale scrub vegetation and is located on the central part of a gently sloping bajada that forms the northwestern margin of the Amargosa Desert (see Map 4, Section HI).

DEVA 83A-6 (Fig. 14). This site probably represents a small mining camp. Three features were observed within the site itself, which has an estimated area of 2,650 m^2. Three additional features were noted outside the site boundaries, but are probably associated with it. Features within the site include: Feature 1, a roughly circular cluster of small boulders, about 2 m in diameter, with coal clinkers and slag in and around the cluster--possibly a hearth used for ore processing; Feature 2, a roughly ovate cluster of small boulders, measuring approximately 1.5 m by 0.5 m, containing a rusty cigarette tin, a nail, and a piece of wood--probably a collapsed marker cairn; and Feature 3, a circular ring of small boulders and large cobbles, about 0.7 m in diameter--probably a hearth. There are three shallow rectangular pits (about 4 m by 5 m and approximately 1 m deep), with associated spoils piles, 50-100 m north of the site. These appear to be mines or test pits. Historic trash is scattered throughout the site, but is concentrated in two areas that may be trash dumps. Artifacts consist primarily of cans, pieces of corrugated metal, nails, and glass fragments. Additionally, a white chalcedony flake (IA-31) was observed on the site.

No historic records for this camp could be located. It may be associated with activity (mining, ore processing, and associated camp/townsite) at the Gold Bar and Homestake-King mines, located 1.2 km west of the site. The Gold Bar claim was staked in October of 1904,

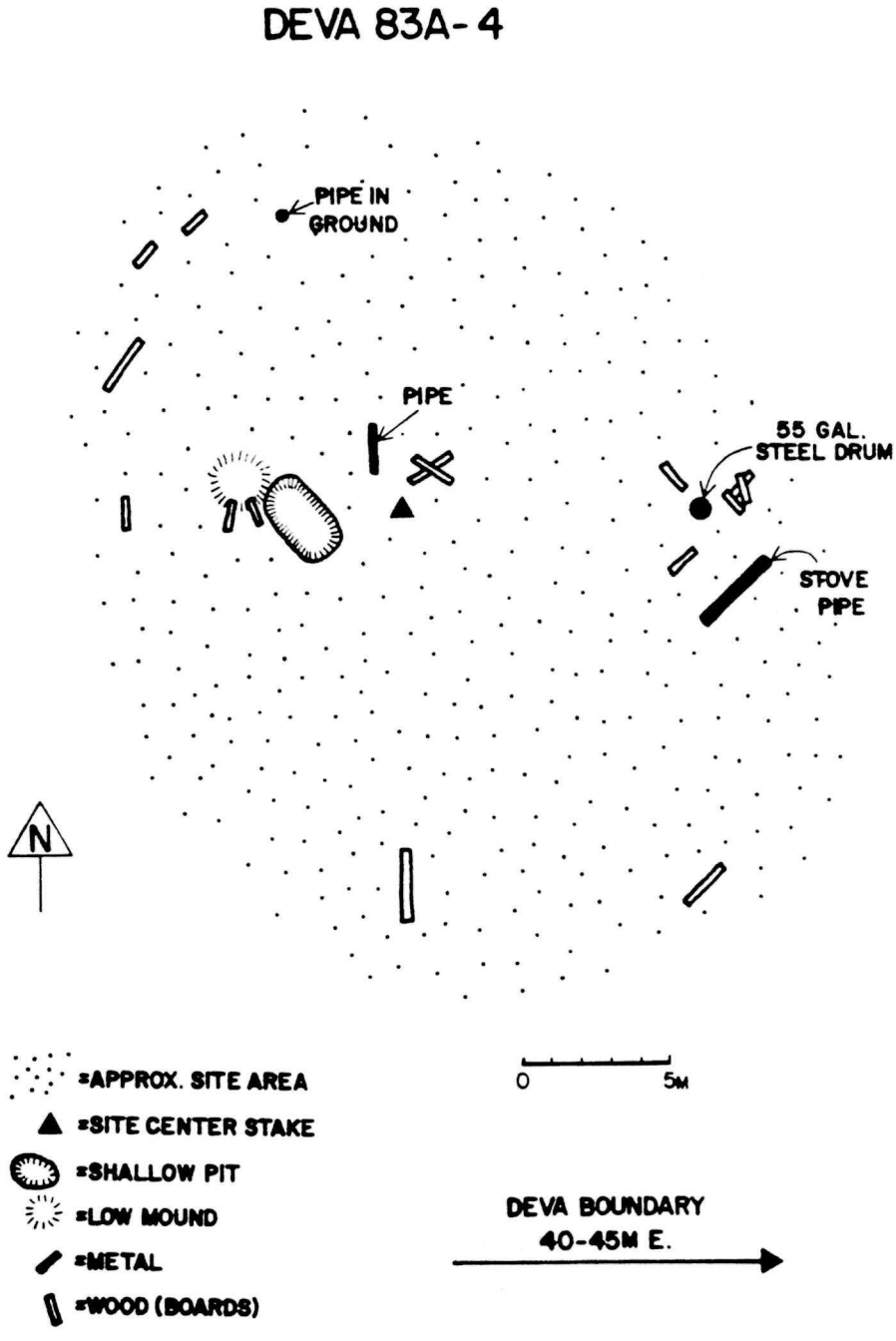


Figure 13. Plan view of site DEVA 83A-4.

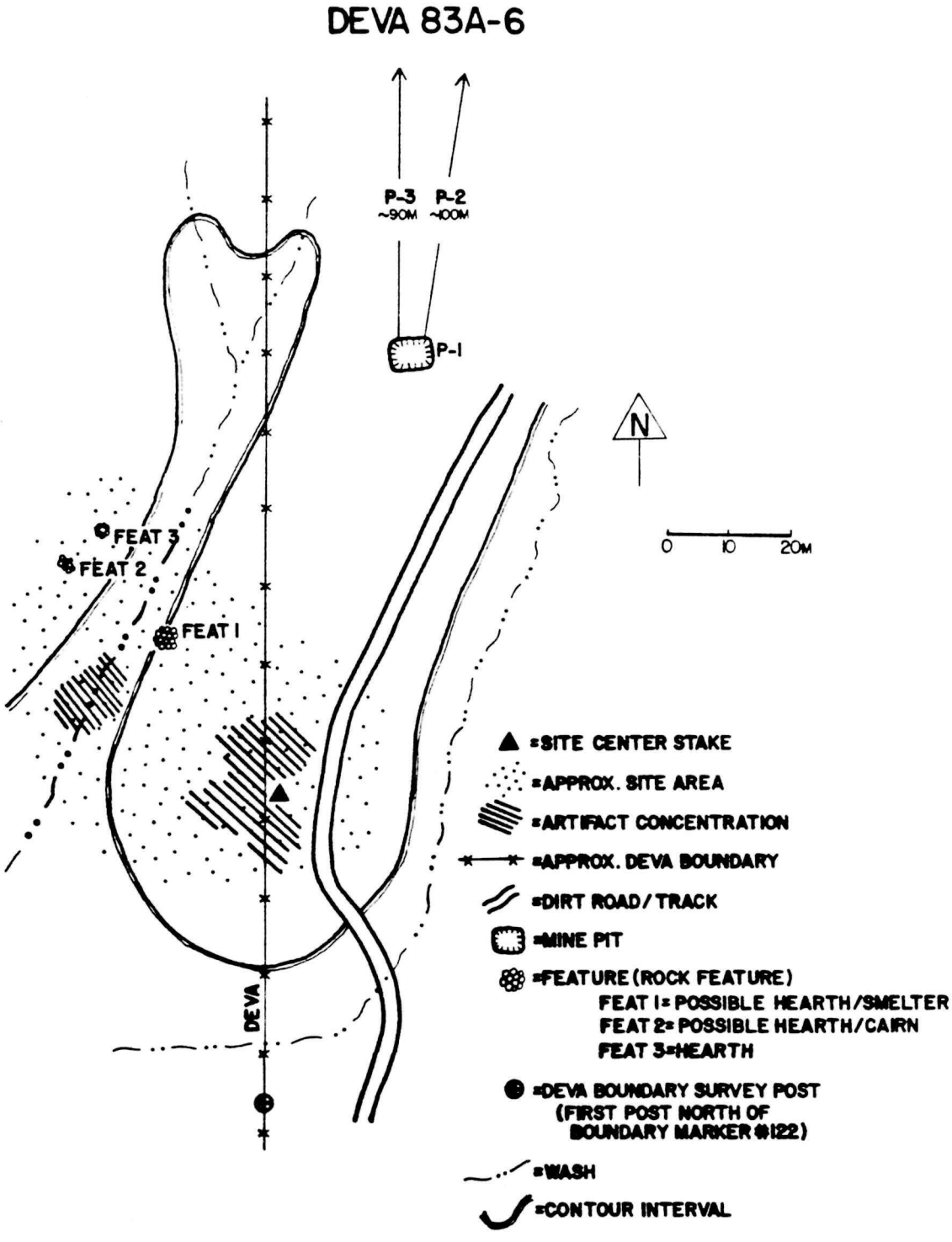


Figure 14. Plan view of site DEVA 83A-6.

and, in early 1905, the Bullfrog Gold Bar Mining Company was formed. Because of reports of rich ore, considerable development of the mine took place. By the beginning of 1908, an ore processing mill had been constructed at the mine, and it began operations. However, in actuality, the mine had little or none of the high-grade ore originally claimed. By late April 1908, both mine and mill closed amid numerous allegations of fraud (Greene and Latschar 1981:93-122).

Started at about the same time as the Gold Bar, and adjacent to it, the Homestake-King Mine was operated more honestly and was considerably more productive than its neighbor. The mine was developed, and a large, well-built mill began operations in June 1908. Despite good management, the mine eventually ran out of ore. The mine and mill closed in April 1909, after producing between $50,000 and $70,000 worth of gold (Greene and Latschar 1981:123-156).

Associated with the Gold Bar and Homestake-King mines, and located a little to the east, was a substantial mining camp (Greene and Latschar 1981:123-156). Judging from Greene and Latschar's report, however, this camp would have been located 0.5-1.0 km west of DEVA 83A-6. Thus, rather than being directly associated with these mines and camp, the site probably represents a prospecting camp or unsuccessful (or fraudulent) mining venture--one of the many spinoffs of the larger, more successful, mining operations in the area.

DEVA 83A-6 is located on the monument boundary, extending 15 m to the east and 40 m to the west. The site is in the central Bullfrog Hills, at an elevation of 4,600 feet, in sagebrush scrub vegetation. It lies in an almost completely enclosed, alluvium-filled basin (see Map 4, Section HI). The major outlet of the basin is on the western side of Bullfrog Mountain. The wash draining the basin follows this route, eventually leads southeast (south of the mountain) to fan out on the bajada, forming the northwestern margin of the Amargosa Desert.

Numerous roads and jeep tracks traverse the vicinity of the site. Most seem related to activity centering on the Gold Bar and Homestake-King mines. A road cuts through the eastern part of the site. This road, though easily visible and appearing well used, does not appear on the 1954 series U.S. Geologic Survey topographic map of the

area (Bullfrog, Nevada-California, 15"). It may, thus, postdate the map and very probably the site.

Isolated Finds

Isolated finds were recorded as isolated artifacts, cairns/rock clusters, and mines. Isolated artifacts are listed and briefly described in Table 3, along with their locations on maps 2-4. With the exception of a possible petroglyph (IA-25), all the prehistoric isolated artifacts (37) are lithics. The majority of these lithics (27) are unretouched, noncortical flakes. A few cores and primary flakes were also noted. Tools noted include only a possibly retouched obsidian flake (IA-38) and two projectile point fragments (IA-40 and 45), both of white chalcedony. IA-40 (Fig. 15A) is probably a Rose Spring series point (see Fig. 3; Heizer and Clewlow 1968; Heizer and Hester 1978:33). This would date the point to the Saratoga Springs period, A.D. 500-1200 (see Chapter 3). IA-45 (see Fig. 15B) is too fragmentary to make an accurate assessment of its type. Its size suggests that it is a dart or spear point rather than an arrow point. Also, although fragmentary, it does not appear to be one of the point types of the Lake Mojave period (see Fig. 1). Hence, IA-45 probably represents a member of one of the point series associated with the Pinto and Gypsum periods (see Fig. 2). This would roughly date the point to between 5000 B.C. and A.D. 500 (see Chapter 3).

Besides the lithics, a possible petroglyph (IA-25) was found. It appears to be a design (a spiral or concentric circles/arcs, with a line through it) pecked onto a rhyolite boulder, which is located along a small drainage channel. A sketch of the petroglyph is shown in Figure 15C. No other cultural material was found in the immediate vicinity of IA-25.

Interestingly enough, considerably fewer isolated historic artifacts were noted than prehistoric artifacts (13 compared to 39). It was no surprise that tin cans were the most common of historic artifacts observed.

Cairns/rock clusters occurred throughout the survey area. All, or nearly all, of the rock clusters seemed historic. This assessment was based on factors such as a cairn's general state of preservation, the

Table 3

DESCRIPTION AND LOCATION OF ISOLATED ARTIFACTS

IA #	MAP NO./SECTION	DESCRIPTION
1	3 / FG	Large, noncortical flake - white chalcedony
2	3 / FG	Angular debris - translucent chalcedony
3	4 / IJ	Noncortical flake - pink quartzite
4	4 / IJ	Noncortical flake - white chalcedony
5	4 / IJ	Noncortical flake - white chalcedony
6	4 / IJ	Noncortical flake - white chalcedony
7	4 / IJ	Noncortical flake - white chalcedony
8	4 / IJ	Noncortical flake - yellow chert - heavy patina
9	4 / IJ	Noncortical flake - white chert
10	4 / IJ	Core fragment - pink chert
11	4 / IJ	Noncortical flake - white/pink chert
12	4 / IJ	Core fragment - white/pink chert
13	4 / IJ	Noncortical flake - white chalcedony
14	4 / IJ	Noncortical flake - white chalcedony
15	3 / GH	(2 flakes) - large, noncortical - white chalcedony - noncortical - pink chert - heat-treated?
16	4 / IJ	Noncortical flake - pink chert
17	4 / IJ	Noncortical flake - pink chert
18	4 / IJ	Noncortical flake - yellow chert
19	4 / IJ	Noncortical flake - white chert
20	4 / IJ	Noncortical flake - white chert
21	4 / IJ	Noncortical flake - white chert
22	4 / IJ	Large, primary flake - red jasper
23	4 / IJ	(2 flakes) - large, primary flake - yellow quartzite - small, noncortical flake - yellow quartzite
24	4 / HI	Noncortical flake - mottled white chert (on DEVA 83A-3)
25	4 / IJ	Possible petroglyph on small boulder - pecked spiral design (see Fig. 15c)
26	4 / IJ	Tobacco can

Table 3 (continued)

IA #	MAP NO./SECTION	DESCRIPTION
27	4 / IJ	Tin can
28	4 / IJ	Core fragment - red-banded jasper
29	4 / IJ	Tobacco can
30	4 / HI	Horseshoe
31	4 / HI	Noncortical flake - white chalcedony (on DEVA 83A-6)
32	4 / HI	Tin cans (3)
33	4 / HI	Tin can
34	4 / HI	Metal scrap
35	4 / HI	Tin can lid
36	4 / HI	Pieces of plywood
37	4 / HI	Noncortical flake - white chalcedony
38	4 / HI	Large primary flake - obsidian - with use wear or retouch
39	4 / HI	Noncortical flake fragment - white chalcedony
40	3 / GH	Projectile point, base fragment - white chalcedony - Rose Spring Corner-notched (see Fig. 15A)
41	4 / HI	Tin can
42	3 / GH	Noncortical flake - white chalcedony
43	3 / EF	Primary flake - obsidian
44	3 / EF	Noncortical flake - white chalcedony
45	3 / EF	Projectile point, medial fragment - white chalcedony - unknown type (see Fig. 15B)
46	3 / EF	Tin can
47	3 / EF	Noncortical flake - white chalcedony
48	3 / FG	Noncortical flake - obsidian

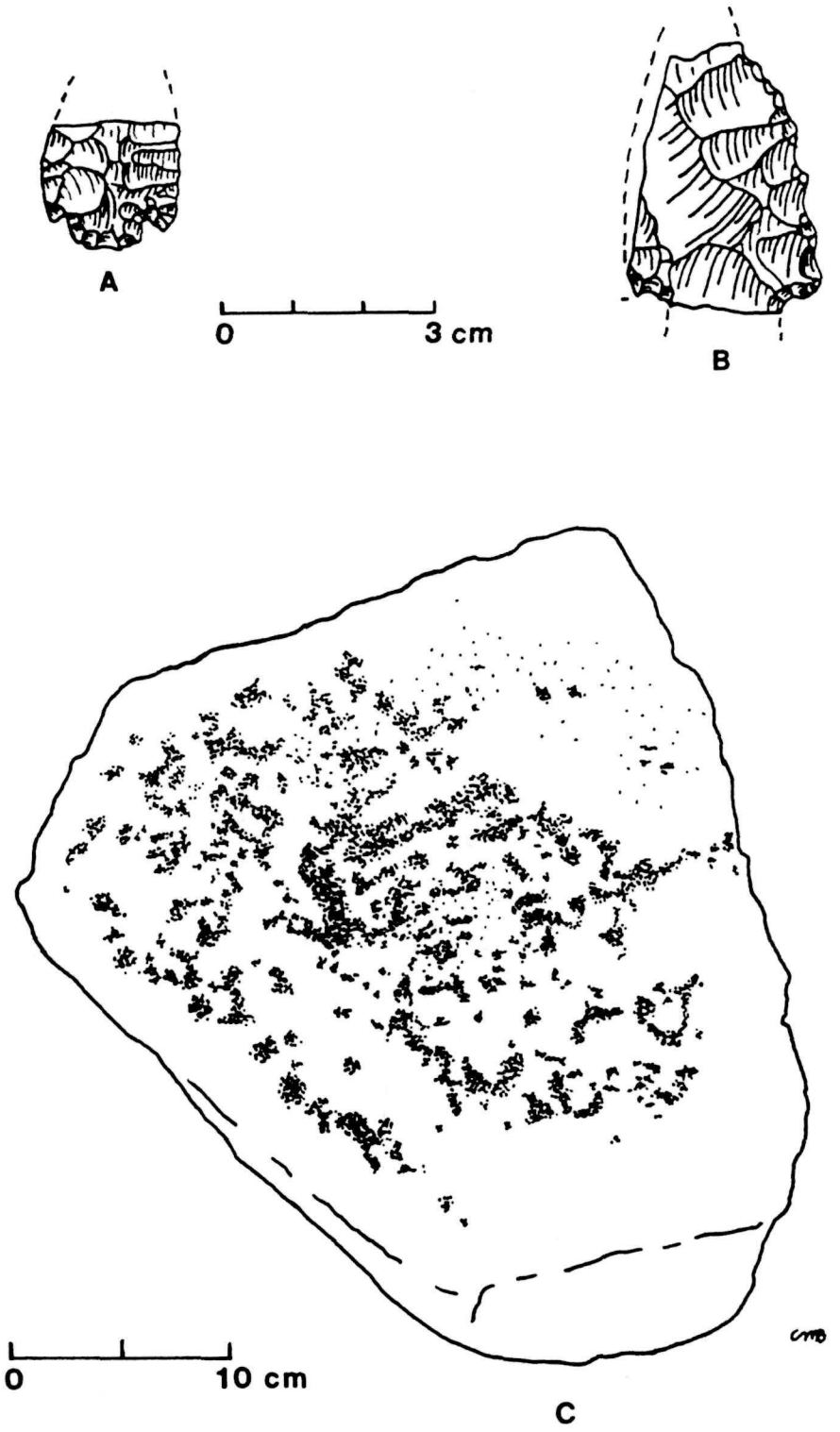


Figure 15. Isolated Artifacts: (A) Projectile point fragment (IA-40); (B) Projectile point fragment (IA-45); (C) Possible petroglyph (IA-25).

orientation of patina on the rocks, its association with other cairns, and the artifacts associated with the cairn. Most, if not all, the cairns located were probably marker cairns of some sort, to designate mining claims. One rock cluster (C-28, Map 2, Section CD), is a little different from the usual, however. C-28 consists of a rock cairn, 2.5 m in diameter and two groups of large cobbles less than 10 m to the south of this cairn. One group of cobbles appears to outline the letter "G," and the other appears to outline a "D." The entire complex appears to be very recent.

Two isolated mines were located. Both are vertical shaft mines with no remains of associated structures or other indications of human use of the area. Whatever materials were once associated with these mines probably has been removed since they ceased operation.

M1 is a vertical mine shaft a short distance west of the monument boundary, on the lower southern slopes of Bullfrog Mountain (see Map 4, Section HI). This mine is probably one of many opened, after the Bullfrog strike of 1904, in the vicinity of the Original Bullfrog Mine.

It may well have been the Last Chance mine of the Bullfrog Extension Mining Company (see Greene and Latschar 1981:40 and Hardesty 1981:Fig. 3). Work began at this mine in May 1905. Although considerable mining was done, no profitable ore was found. After failing for several years to become a profitable enterprise, the mine was closed and the equipment removed (Greene and Latschar 1981:40-45).

M2 is an isolated mine shaft located adjacent to DEVA 83A-9 (see Map 3, Section EF). The mine shaft is marked on the 1954 series Bullfrog, California-Nevada, 15 minute topographic map (U.S. Geologic Survey) and, so, predates the map. No historic records relating to the mine could be located, however. Although the only artifacts found in the survey corridor were a tin can, a pie pan, and a Worchestershire Sauce bottle found on site DEVA 83A-9, further examination of the area around the mine (outside the survey corridor) may reveal the presence of additional historic artifacts and/or structures that may be associated with the mine.

Chapter 6
DISCUSSION OF SURVEY RESULTS

Prehistoric Material

Several aspects of this survey and the results obtained limit the extent to which those results can be interpreted. First, only a very small amount of land was actually surveyed. The survey corridor, 65 km long and 60 m wide, represents an area of 390 ha (964 acres) or 3.9 km^2. This is only a tiny fraction of the amount of land represented by even the small northeastern corner of Death Valley National Monument. It is, thus, risky to extrapolate the results of this survey for even the local area. Second, very few sites were found. Taking the risk and extrapolating from the survey results provides an estimate of over 900 prehistoric sites in the 440 km^2 portion of the monument in Nevada alone. While this is probably a not very accurate number, it does provide some idea of the potential representativeness of the eight prehistoric sites found in the survey. Finally, only three of the sites (DEVA 83A-7, 8, and 9) can be dated, and then only generally (by the presence of ceramics), to the Shoshonean Period. With no way in which to assess contemporaneity between the sites, it is difficult to evaluate the meanings of intersite variability and patterns of site distribution.

On the other hand, several other aspects of the survey and the cultural history of the area benefit the interpretation of the survey results. First, the survey crosses virtually all environmental zones in the region. This allows some degree of assessment of the relationships between environmental variability and cultural variability as reflected in the archeological record. Second, the survey (in the Nevada portion of the monument) was basically a simple random sample of the terrain and cultural materials of the area. The boundary that the survey followed is a totally arbitrary line with respect to any of the environmental and cultural factors that affected past human activities and distributions. This helps offset the effect of a small sample size to some extent, and increases the chances that the sample of cultural material located during the survey is representative of the cultural material of the region as a whole. Finally, based on admittedly meager evidence, there appears to have been little significant change in the pattern of human

adaptation to this part of the Great Basin during the past several millenia at least (see Chapter 3). If this is indeed so, it allows some generalizations to be made about patterns of site distribution and intersite variability, in spite of the lack of information concerning comtemporaneity among sites.

Keeping in mind the reservations that are discussed above, several patterns are suggested by the cultural materal encountered on the survey. An interesting distribution of sites, with respect to elevation, is at first apparent. With one exception, all prehistoric sites encountered in this survey are located either below 3,600 feet or above 5,600 feet in elevation. This is in spite of the fact that nearly 60 percent (38 km out of 65 km) of the survey area lies between 3,600 and 5,600 feet. The single site in this altitudinal zone (DEVA 83A-11) is located on a prominent ridge near the base of the zone (at 3,900 feet). Environmentally, this zones includes the transition from creosote/shadscale dominated to sagebrush dominated scrub vegetation (about 3,500 to 5,000 feet), as well as the zone of sagebrush/joshua tree association (about 5,000 to 5,400 feet).

There are several characteristics that differentiate the lower altitude sites from those at higher altitudes. All four of the lower altitude sites (DEVA 83A-1, 2, 5, and 11) are low density lithic scatters. Again, with the exception of DEVA 83A-11, they are in an area of a relatively high density of isolated artifacts (21 artifacts in 6 km of corridor), indicating light human occupation/activity throughout this area and not just at the sites themselves. On the other hand, three of the four higher altitude sites have milling equipment (DEVA 83A-7, 9, and 10), and three of the sites have ceramics (DEVA 83A-7, 8, and 9). Additionally, the density of isolated artifacts is considerably lower in this area (four artifacts in 6 km of corridor), suggesting activity was more concentrated at the sites than was the case in the lower elevation zone.

These differences suggest that different sets of activities took place at the two groups of sites. The lower altitude sites are somewaht difficult to interpret due to a lack of artifacts beyond flakes and cores. In general, the nature of the sites (low density lithic scatters with no features) suggests very short-term occupations by few people,

probably engaged in a limited range of activities. Repeated use of the sites and the general area, however, is suggested by artifact loci at sites, variations in the amount of patina on artifacts, and the density of isolated artifacts. The lack of quantities of suitable raw material, many cores, or many pieces with cortex, indicates that none of these sites was a quarry site, or that activities included primary lithic reduction. Rather, the assemblages suggest secondary modification or reduction of already prepared cores and blanks, and resharpening of tools. Such would tend to be associated with activities involving the use of lithics rather than the manufacture of lithics. These activities would include hunting, butchering, and hide preparation. While plant gathering may also have been included in the activities that took place at these sites, there are no indications of plant processing (milling equipment or heavy chipped stone tools) or storage (storage features or ceramics, although baskets may well have been used but left no traces).

A wider range of activities is indicated for the higher elevation sites. DEVA 83A-9 is probably a base camp. A considerable length of occupation, or regular reoccupation, of the site is suggested by the amount of cultural materials (especially the not very portable ground stone), structure foundations, and the presence of a large boulder with a well-used grinding slick. The considerable amount of milling equipment suggests that plant processing was an important activity. The numerous bifaces (including projectile point fragments) are indicative of hunting and butchering. As with the lower elevation sites, the lithics observed suggest that collection and initial reduction of lithic raw materials occurred elsewhere, and only secondary reduction, retouching, and resharpening took place at the site. Notable, also, is the fact that this site is the only one found on this survey that is located near a permanent water source (Willow Springs). Situated at an elevation of 6,200 feet in a sheltered valley, the site would be both comfortable in summer and also quite habitable in winter.

The mountain rockshelter (DEVA 83A-7) could have accommodated only a few people--possibly a family--due to its size. Recurrent occupation is suggested by the stockpiled wood and brush, and the grinding slab left in the shelter. The grinding slab is also indicative of plant processing activities. Based on this, and its location in the

pinyon/juniper zone, it is very probable that this site was primarily associated with pinyon nut harvesting. It is worth mentioning that pinyon nut shells litter the floor of the rockshelter. It is not possible to determine, at present, whether some of these shells are the result of human occupation of the site or whether they are from recent rodent activity in the shelter. Pinyon nuts become ripe in the fall, hence, this site was probably used in that season. The site may have also been used as a base for hunting and other plant collecting activities in fall and other seasons. Due to its elevation (7,100 feet) and exposed location, it is less likely that the rockshelter was occupied in winter than in other seasons.

The other two sites in the higher elevation group appear to be briefly occupied, limited activity sites. The sherd scatter on DEVA 83A-8 could well be from a single dropped pot, and may not represent an occupation at all. The lithic scatter is primarily associated with the unsuccessful reduction of a biface and is probably related to hunting activities.

The metate at DEVA 83A-10 indicates plant processing. The associated rockshelter is so small that it seems more appropriate for storage than habitation. The small size of the shelter and paucity of surface artifacts may be misleading, however, Excavation of a rockshelter, in the region, that is almost as small as this one (Grapevine Rockshelter No. 1) uncovered rich and varied archeological materials (Kritzman 1966). The presence of charcoal on the floor of the shelter is noteworthy in this respect. Hence, this site at least represents a small milling station and may contain evidence of a wider range of activities.

In summary, the lower elevation sites seem to all be small, briefly occupied, and associated with limited activities. Repeated use of these sites and the surrounding area are suggested. A greater variation in sites and activities are associated with the higher elevation group. Sites include a large base camp, a mountain rockshelter probably associated with pinyon nut harvesting, possibly a small hunting camp, and a small milling station with potentital storage facilities.

The bimodal distribution of sites relative to elevation cannot be explained as the basis of data obtained in this survey. The

distribution may only be a result of small sample size. Since no lower elevation sites were datable, changes in settlement patterns through time may also be a possible explanation (with lower elevation sites being earlier than the Shohonean period higher elevation sites). The long span of occupation suggested by patina on artifacts at DEVA 83A-11, argues against this, however. On the other hand, differences between the higher and lower elevation sites suggest that different sets of activities, perhaps associated with seasonal movements, may be the most important factors influencing site distribution. Additionally, other more extensive surveys to the south of the survey area have noted that prehistoric sites seem to be clustered by elevation (Coombs and others 1979:76-118; Brooks and others 1981:128-163). The major clusters occur in the mountains (equivalent to the higher elevation sites of this survey), the upper pediments (equivalent to lower elevation sites), and the valley bottoms--associated with dunes, mesquite groves, and water sources (not represented in the survey area or vicinity). Judging from the results of these surveys and ethnographic accounts of the historic Paiute and Shoshone (see Warren and others 1980:137-184), the last explanation seems the most likely. If so, the sites found in this survey would then represent two of the more heavily utilized zones in the prehistoric settlement/subsistence systems of the region.

Historic Material

Only three historic sites were found, and little can be added to the interpretation of these sites beyond the descriptions in the preceding chapter. However, a few words concerning the distribution of the historic material encountered are in order here. With the exception of cairns, all historic material encountered occurs in three clusters. The major cluster is located in the vicinity of the Bullfrog Hills (see Map 4, Section HI). This was a focus of mining activity at the beginning of this century, and sporadic mining activity has occurred here from that time up until the present. All historic sites found are located in this area. Both from historic records and from the results of this survey, this cluster represents the major focus of historic occupation and activity in the region. A second, smaller cluster of isolated historic artifacts was encountered along an old road (see

Map 4, Section IJ) that heads southwest from the abandoned mining town of Rhyolite (east of the survey area) toward Death Valley. Rhyolite was the major center of the Bullfrog Mining District during the boom days. Hence, this material is also predominantely related to mining activities in the Bullfrog Hills.

The third cluster of historic material consists of a few isolated artifacts in the vicinity of M2 (see Map 3, Section EF). This material is probably associated with the mine and may derive from small camp or settlement in the area, not found on this survey.

Cairns are located throughout the survey area but are most concentrated in the vicinities of the three clusters of historic material previously discussed. Many are definitely claim markers, containing tobacco or cigarette tins that once held (or still hold) claim descriptions. The others are also probably claim markers. Thus, the distribution of ore bodies and associated mining activities seem to be the primary factors affecting the distribution of historic material encountered in this survey. While cattle ranching currently occurs in the area (one of the reason for the planned fence construction that resulted in this survey), no artifactual evidence for this activity was encountered in the survey.

Chapter 7
CULTURAL RESOURCE MANAGEMENT RECOMMENDATIONS

The recommendations presented here for management of the cultural resources identified in the course of this survey are based on an assessment of the archeological and historic significance of these resources and an evaluation of the potential impact of fence construction upon them. When there is more than one possible management option for dealing with these resources, all will be presented as well as recommendations for the "best" option(s) where appropriate.

Prehistoric Resources

DEVA 83A-1, 2, 5, and 11

(1) Significance: These sites are very similar in many respects and are, thus, grouped together in this discussion of management recommendations. All are low density lithic scatters, with no evidence of subsurface cultural deposits. No culturally diagnostic artifacts or other datable materials were observed on these sites. The primary archeological significance of these sites lies in their relationship to an, as yet, undefined settlement/subsistence system. The lack of culturally diagnostic or datable materials on these sites limits their value in this respect, however.

In and of themselves, these sites can probably only provide rather scanty information about lithic manufacturing techniques and lithic raw material utilization. Much of the data needed for the studies mentioned above have already been collected in the course of this survey. Detailed mapping and provenienced collection of the lithics from these sites would allow quantitative data to be acquired with respect to spatial patterning of lithics, variation in technological attributes, and frequencies of types of raw materials.The value of such quantitative studies, considering the limitations of the sites and the time and effort required for such work, would seem marginal.

(2) Potential impact of fence construction: As planned, the fence will pass through, or immediately adjacent to, all of these sites. Three sets of construction related activities could potentially affect the sites: (a) foot traffic on the sites, (b) driving fence posts into

the sites, and (c) unauthorized collection of artifacts by the fencing crew. Foot traffic across the sites, as well as dragging equipment and materials, could displace artifacts and possibly cause breakage and spurious retouch. Such impact, however, should be no greater than that caused by the cattle, burros, and other animals that currently traverse the area, or by other natural forces such as erosion and plant growth. As the sites probably lack subsurface deposits, driving steel fence posts into the sites should not affect them in any way. Finally, unauthorized collection of artifacts from these sites by the fencing crew is unlikely. The unretouched flakes and cores that make up these sites do not have the aesthetic or monetary value of retouched tools--especially projectile points. In fact, owing to the lack of such tools, these sites would probably not be apparent to the untrained eye. In summary, the potential impact of fence construction of these sites would be negligible.

(3) Management recommendations: Due to the low level of significance of the sites, and the lack of adverse effects by construction activities, it is recommended that no action be taken to mitigate the impact of fence construction at these sites. It is suggested for these, and all other sites identified on this survey, that the fencing crews be requested not to disturb the site location stakes. It is also suggested that the possibility of unauthorized (and fruitless) digging and searching for artifacts by the fencing crew might be avoided by not informing them of the significance of the stakes.

DEVA 83A-7

(1) Significance: This rockshelter contains datable material (organic material for C-14 dating and ceramics), probable subsurface cultural deposits, and some usually perishable materials (the sandal found on the shelter floor). The soot blackening on the ceiling of the rockshelter suggests considerable prehistoric use. The probable subsurface deposits in the shelter and on the terrace in front may well hold a stratified record of human activities in this area over a long period of time.

The good preservation of perishable materials in the shelter suggests that its deposits may contain more than the ceramics, lithics,

and ground stone usually found at archeological sites. Artifacts which are rarely preserved, such as textiles and wooden implements, would provide a more comprehensive picture of prehistoric life than is usually possible at most sites. Additionally, these deposits may contain preserved faunal and floral remains that could yield valuable information about both prehistoric subsistence activities and past environmental conditions.

The potential wealth of archeological information that can be recovered from a rockshelter, such as this one, is illustrated by the excavations at Coville Rockshelter (Meighan 1953) and Grapevine Canyon Rockshelter No. 2 (Kritzman 1979), two shelters in the region that are of comparable size to this one. Finally, it should be noted that there is no evidence of human disturbance and only minimal natural disturbance of the site and its deposits since the last prehistoric use of the shelter. In sum, DEVA 83A-7 holds a very high potential for providing very significant archeological data concerning prehistoric activity in the Great Basin.

(2) Potential impact of fence construction: Due to its location about 100 m north of the monument boundary, construction of the planned boundary fence should have no direct impact on the site. The only potential impact could come from unauthorized collection of artifacts and excavation in the rockshelter. Such activities could seriously damage, or completely destroy, the archeologically pristine and potentially very rich deposits at the site. While not overly obvious, the shelter is definitely visible from the planned fence line, making such disturbance a possibility.

(3) Management Recommendations: As the fence construction will not have any direct impact on the site, no action mitigating this impact is needed. However, it is recommended that the existence and location of the shelter should not be revealed to the fencing crew or members of the general public. It is further suggested that a park ranger (or other qualified National Park Service personnel) accompany the fencing crew while they are working in the vicinity of the rockshelter in order to prevent rediscovery and disturbance of the rockshelter and its deposits.

DEVA 83A-8

(1) Significance: In many respects, this site has roughly the same archeological significance and research potential as the lithic scatters discussed at the beginning of this chapter. That is, it is primarily significant as part of a settlement/subsistence system, with additional potential for studying lithic manufacturing techniques and lithic raw material utilization. Several aspects of the site give it a slightly greater potential significance than the small lithic scatters. First, the site has culturally diagnostic artifacts (ceramics) and other datable material (the partly burned, ax-cut log). Whether these are culturally associated with each other or with the lithic scatter cannot be determined at present. Nevertheless, the fact that the site can be placed in a temporal context, makes it more valuable, archeologically, than sites that cannot be so placed. Additionally, while no evidence of subsurface cultural material was observed, the potential for such deposits is much higher than for the previously mentioned lithic scatters. Unlike the patinated desert pavement underlying these other sites, the land surface at DEVA 83A-8 appears much more dynamic, with a higher potential for repeated episodes of deposition and erosion. Additionally, the bedrock outcrop around which it is located is visually prominent and provides a sheltered locale. These factors increase the potential of more significant archeological deposits underlying this site. To conclude, while from initial appearances DEVA 83A-8 seems to be another small, relatively insignificant site, it may contain more significant, buried archeological materials. Such a possibility cannot be fully assessed without additional study of the site.

(2) Potential impact of fence construction: Due to the lack of boundary survey markers in this area (see p. 27), the exact position of the site relative to the planned fence is not known. It is probably within 20 m (south) of the boundary, however. Even if it is on the boundary and does have subsurface cultural deposits, the driving of fence posts into the site would have little, if any, impact on the cultural material. Also, as with the lithic scatters mentioned above, foot traffic across the site would cause only minimal disturbance of the meager surface artifacts. As with the other sites, unauthorized

excavation and collection of artifacts has the greatest potential for adversely affecting the cultural resources here.

(3) Management recommendations: There are several management options available for preventing the impact discussed above should the fence pass through or very near the site.

(a) Avoidance. The fence could be rerouted to go around the site. Such an option would increase the expense of labor and fencing materials. It would also require additional archeological survey to provide clearance for the new fence route. Finally, circumventing the site might simply call greater attention to its existence--the very occurrence this strategy would be seeking to avoid.

(b) Data recovery. Recovery of archeological data from the site by trained archeologists prior to fence construction would prevent any damage to the cultural resources of the site, due to the unauthorized disturbance by members of the fencing crew. Such archeological work should entail at least detailed mapping and provenienced collection of surface artifacts. Ideally, such work should also include testing for the existence and extent of subsurface deposits. In addition to preventing adverse impact to the site, such work would permit a more accurate assessment of the archeological significance of the site and perhaps improve our understanding of the prehistory of the area. There are several drawbacks to this option, however. They include: potential delay in the fencing project due to the archeological recovery program, the expense of the archeological project, and the not unlikely possibility that the material recovered would be so limited in quantity and variety as to be of very little archeological value in spite of the quality of the recovery work and subsequent analysis.

(c) Monitoring. A park ranger (or other qualified National Park Service personnel) could accompany the fencing crew while they are working in the area in order to prevent unauthorized disturbance of the site should it be rediscovered. While this will not prevent any crew member so inclined from returning to the site at a later date, the inaccessibility of the area, along with the apparent lack of "collectable" artifacts would probably discourage such activity. This last option is the one recommended here as the simplest and most cost effective.

DEVA 83A-9

(1) Significance: This is the largest and perhaps the archeologically richest prehistoric site encountered on this survey. It contains a relatively large quantity and variety of cultural remains, including probable features and habitation structures. It also may have subsurface cultural deposits. It has the potential to provide important information about a wide range of economic, social, and ritual activities. As a base camp, it could have been a major nexus in a regional settlement subsistence system. For these reasons, this site is archeologically very significant and can provide a great deal of valuable information concerning the prehistory of the area.

(2) Potential impact of fence construction: In spite of the lack of Death Valley boundary survey markers, it was possible to locate this site with respect to the monument boundary due to the presence of several topographic and cultural (that is, M2 and a General Land Survey marker) features. The planned fence will probably pass directly through the site.

There are several ways in which fence construction could adversely affect the site. For the most part, driving fence posts, foot traffic, and other construction activities would tend to result in only minimal displacement or damage to artifacts. Rock features and structures, however, could suffer greater disturbance. This could occur from driving posts into these features and structures, moving rocks to clear a place for the posts or other materials, and using rocks from these features and structures to provide supporting cairns for the posts. The potential for unauthorized excavation and collection of artifacts is greater here than for any other prehistoric site found in this survey. The quantity of material on the surface makes the site relatively noticeable even to the untrained observer. Projectile point fragments and other bifaces are common on the surface of the site. These are always desireable as "collectables." Finally, there is a substantial quantity of ground stone on the site, including manos and metates which are ever popular for paperweights and doorstops. These artifacts, by their presence, could also encourage additional pothunting, which would seriously damage the archeological integrity of the site and reduce its value as a cultural resource.

(3) Management recommendations: Management options are basically the same as those for DEVA 83A-8. The major difference would be an increase in scale for these options due to the larger size of the site and its much richer archeological content. For example, archeological recovery of data would involve more time in the field. While, unlike DEVA 83A-8, such a project would result in the recovery of a considerable amount of data, time and expense for the analysis of these data would be correspondingly more. Of course, there would also be a greater amount of information that could be derived from these data.

As with DEVA 83A-8, monitoring of the fencing crew and construction activities while the work is taking place in this area is the option recommended here. A monitor could not only prevent intentional disturbance of the site but could also prevent inadvertent disturbance of features and structures by construction activity.

DEVA 83A-10

(1) Significance: The lack of artifacts and the small size of the rockshelter makes its significance difficult to assess. It is at least a small milling station with some undetermined use (storage?) of the shelter. On the other hand, subsurface deposits may contain much richer archeological material. Given these extremes, an accurate assessment of the significance of this site cannot be made at this time.

(2) Potential impact of fence construction: As it is about 15 m north of the monument boundary, the site should not be directly affected by fence construction. It could, however, be affected by associated activities and the actions of the fencing crew. As one of the only sheltered spots in the immediate vicinity, the shelter could be used as a lunch site or for storing equipment and construction materials. Such activities could disturb surface deposits. A grinding slab is the only visible artifact that could be collected. However, its presence at the shelter could encourage unauthorized excavation of the deposits in and in front of the rockshelter. Such activity would seriously damage any potential archeological significance the site might have.

(3) Management recommendations: Management options are again the same as for those described for DEVA 83A-8 and 9. The major difference is that a data recovery program would be almost entirely limited to

testing and excavation (if warranted) of the deposits in and in front of the shelter. As with DEVA 83A-8 and 9, monitoring fencing activities in this area is recommended as the simplest and most cost effective means of avoiding adverse impact to the site.

Historic Resources

DEVA 83A-3

(1) Significance: DEVA 83A-3 represents the townsite of Amargosa, the first town founded in the region as a result of the Bullfrog mining boom. This mining was the fundamental impetus behind the initial Anglo settlement of this region and had significant economic and social effects throughout the surrounding region. This site is not only representative of a significant period in the region's history, but typifies, in its six-month history, the development and ultimate fate of a great many boom towns on the western mining frontier at the beginning of the 20th century. Additionally, this site could potentially provide valuable information, not recorded elsewhere, about the daily lives of miners, merchants, and other inhabitants of Amargosa during its brief lifetime.

(2) Potential impact of fence construction: As planned, the fence will pass through nearly 1.5 km of the site's eastern edge. Several aspects of fence construction could potentially affect the site. As with DEVA 83A-9, driving posts and related activities could disrupt features and structures. No such features and structures were observed directly along the fence line, however; most seemed to be located to the west of the monument boundary. Foot traffic could also displace and/or damage artifacts, features, and structures. Additionally, crew members could engage in unauthorized collection of historic artifacts. Bottles, ceramics, buttons, and other objects are often sought by collectors.

The site is easily accessible and has been repeatedly disturbed. Roads and tracks crisscross the site; only the major ones are shown in Figure 12. There is considerable evidence of recent human presence and activity on and near the site (for example, very recent mining claim markers). Construction activities and the potential actions of the fencing crew would, then, appear to be of negligible significance

compared to the amount of disturbance experience by the site since it was abandoned 80 years ago.

(3) Management recommendations: The three management options mentioned for other sites could be used here to prevent impacts resulting from fence construction. Due to the very great extent of this site, however, such work, especially data recovery, would be both costly and time consuming. As with the other sites, monitoring of fence construction would be the most cost effective of the options. However, considering the extent of prior disturbance at the site and the relatively few potential effects of fence construction, no action is recommended as the most practical management option, unless there is a plan to protect the site. Protection of the site, accompanied by interpretive displays, could make it a valuable asset to the monument and provide visitors with a better understanding of this historic area. If such a course is eventually planned by the monument, the first three options should be reconsidered.

DEVA 83A-4

(1) Significance: This is a small site, of uncertain function, with very little historic material. Judging from the condition of the artifacts, it may be quite recent in age (less than 50 years old). Its significance to the history of the area cannot be fully assessed, based on data aquired during this survey, but it is probably quite minimal.

(2) Potential impact of fence construction: As this site is a considerable distance (40-45 m) west of the planned fence, it is unlikely that it will be in any way directly affected by construction or related activities. No "collectable" historic artifacts were observed on the site (although the steel drum is salvageable). It is doubtful that fence construction will have any impact on this site.

(3) Management recommendations: Due to the probably minimal significance of the site and the lack of potential impact due to fence construction, no action is the management option recommended here.

DEVA 83A-6

(1) Significance: The site appears to be a small mining camp. While no definite age or associations can be determined, the site may be

associated with the strikes and subsequent development at the Gold Bar and Homestake-King mines. As such, information from this camp could provide a valuable contrast to the larger, better documented boom towns and camps of the Bullfrog Mining District and permit a more complete understanding of early Anglo settlement and activity in this region.

(2) Potential impact of fence construction: While the fence passes through the site, it should not directly affect any features on the site (see Fig. 14). Foot traffic and construction related activities could displace or damage artifacts, but this impact would probably be minimal. Unauthorized collection of artifacts could also adversely affect the site; however, no commonly collected artifacts were observed. Additionally, a recently used road cuts through the site. The amount of disturbance caused by the building of this road and the activities by those who use it, could not be adequately assessed but may be considerable. Considering these circumstances, it is very doubtful that fence construction would have any significant adverse effects on the site.

(3) Management recommendations: The same options discussed for DEVA 83A-3 are possible here. For the same reasons already discussed, no action is again recommended here (because of the negligible disturbance resulting from fence construction relative to the extent of past and potential future disturbance of the site). Also, as with DEVA 83A-3, if the monument has plans for protecting this site, the management options of avoidance, data recovery, or monitoring of construction should be reconsidered.

Isolated Finds

For the most part, construction of the fence should not affect any isolated finds. Possible exceptions would be the two mine shafts (M1 and M2) encountered. In their historic resource study, Greene and Latschar (1981:62-63) feel that the group of mines, which probably includes M1, is of minimal historic significance. It is also doubtful that construction or related activities would affect the mine in any way. The reverse may be true, however. As with many other mines in this area, M1 is an unfenced open shaft of undetermined depth. At least one of the shafts of the Bullfrog Extension Mining Company that probably

owned this mine extended to a depth of 141 feet (Greene and Latschar 1981:40). This and other mine shafts could be a hazard to the fence construction crew, and they should be made aware of this.

The significance of M2 cannot be fully assessed at this time. A camp or settlement of some kind may have been located in the vicinity. While fence construction will not affect the mine, related activities (unauthorized collection of artifacts) could affect this postulated settlement. Identification and protection of such a camp should take place in conjunction with the management option chosen for DEVA 83A-9, which is adjacent to M2.

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