Homestake - Docket 40-8903

ARCHAEOLOGICAL INVESTIGATIONS ON THE ROUNDY RANCH NEAR GRANTS, NEW MEXICO

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ARCHAEOLOGICAL INVESTIGATIONS ON THE ROUNDY RANCH NEAR GRANTS, NEW MEXICO

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INTRODUCTION

During the latter half of February, 1990, archaeologists from Southwest Archaeological Consultants, Inc. conducted a cultural resources inventory survey of approximately 295 ha (730 acres) of land 16 km (10 miles) northwest of Milan, New Mexico (Figure 1). Legal description of the property is:

T12N, R10W	SE 1/4 Section 9
	SW 1/4 Section 10
	SW corner Section 14
	NW 1/4 Section 15
	NE 1/4 Section 16
	portions of the N 1/2 Section 23

Figure 2 identifies the project area.

All of the land surveyed is owned privately with the exception of Section 16; Section 16 is New Mexico State Trust land and was surveyed under State Permit No. 90-002.

The surveyed area consists of a 3 km (2 miles) long, 152 m (500 ft.) wide corridor encompassing approximately 49 ha (120 acres) and a proposed uranium tailings site area (615 acres) 249 ha, located in a shallow basin.

The project was conducted at the request of A.K. GeoConsult, Inc. of Albuquerque, a company under contract with Homestake Mining Company Grants Operation to gather information relevant to preparation of a required environmental document (Uranium Facility Regulatory Guide 3.8, Revision 2, October 1982). Initially, however, the project was part of a feasibility study for land purchase.

ENVIRONMENT

The project area occurs at the eastern end of the Zuni Uplift, an elevated feature of the Colorado Plateau measuring approximately 129 km long (80 miles) by 64 km wide (40 miles) (Tainter and Gillio 1980:6). The region is characterized predominantly by sedimentary deposits of Cretaceous and Triassic age sandstones, and isolated quaternary age basalt and lava flows (malpais). Soils are medium textured, interspersed with light textured soils, and are shallow to moderately deep (PNM 1978:79). Area topography is characterized by gently rolling hills of 0 to 8 percent grade (PNM 1978:89).

Specifically, the survey area is near the eastern end of the Red Mesa Valley, bounded on the north by Mesa Montanosa, on the east by Cordova Mesa and Grants Ridge, on the south by Black Mesa, and on the southwest and west by malpais. The survey area encompasses a shallow, east-oriented, closed drainage basin rimmed by low relief dune ridges covering Triassic sandstone cliffs and ledges (Figures 3 and 4). A small north-south, re-entrant canyon forms the southwest boundary. The survey corridor extends southeast of the basin, crossing the dune slopes and continuing onto the alluvial flats of San Mateo Creek.

San Mateo Creek is the major drainage of the area, located 1.6 km (1 mile) east of the project area, and flowing southward 2 km (1 mile) into the Rio San Jose.

Vegetation is Upper Sonoran, characterized by mixed grama-galleta steppe grasslands with isolated stands of juniper (PNM 1978:183). In the project area, juniper concentrates along the north and west ridges of the project area; otherwise only isolated trees occur. Predominant shrubs include four-wing saltbush, sage and snakeweed. Small stands of narrowleaf yucca also were observed.

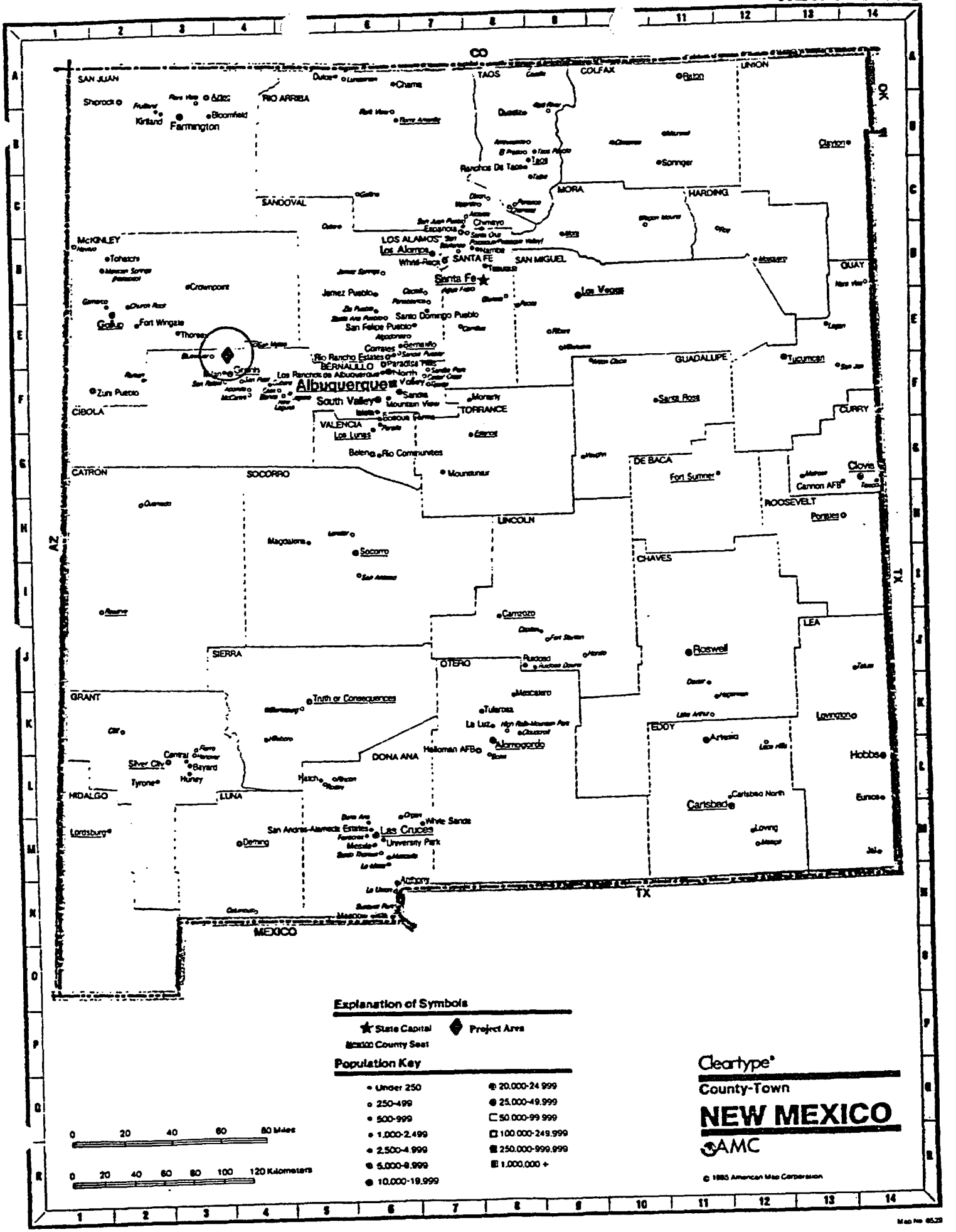

Figure 1: General Project Area.

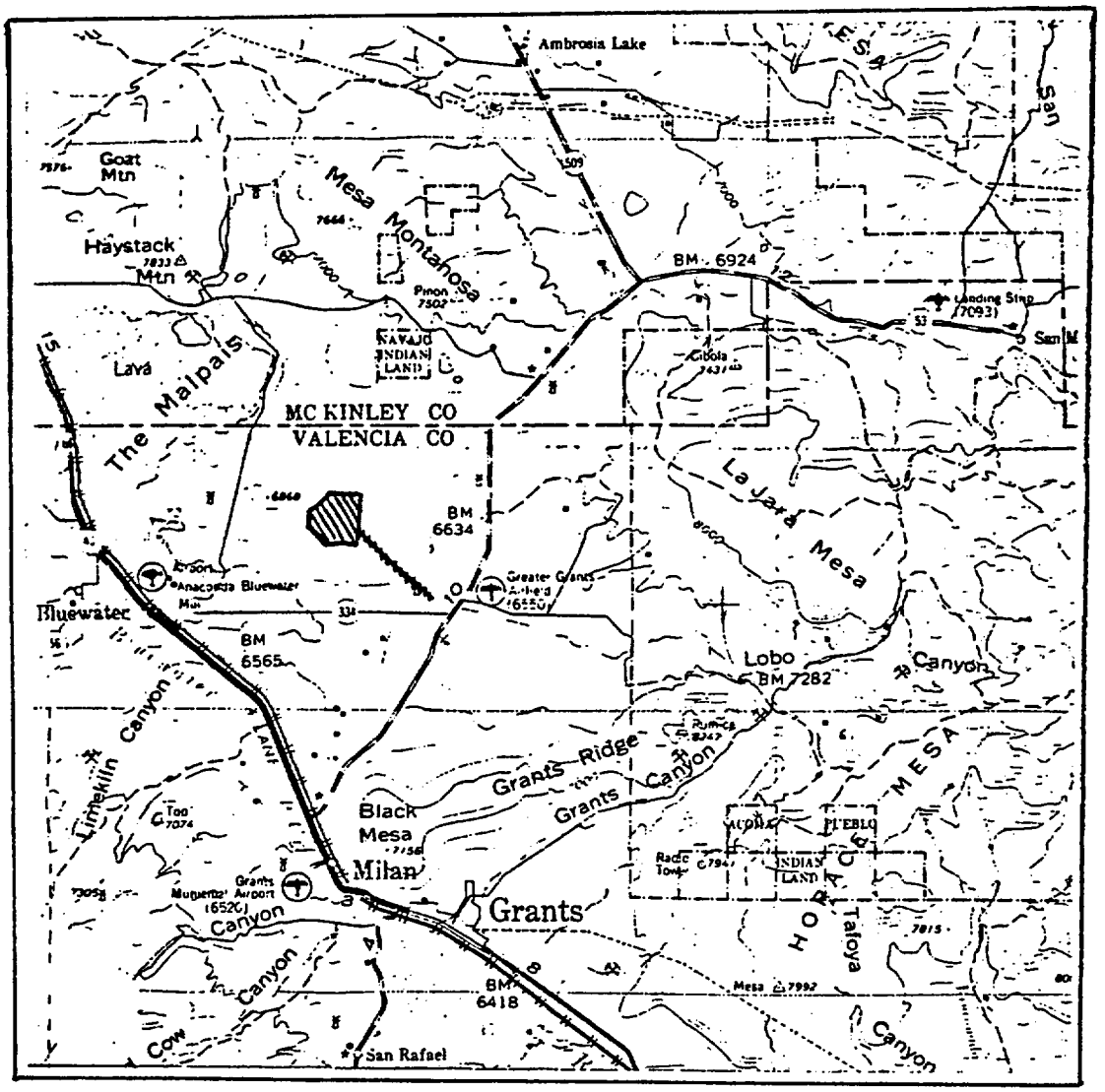

Figure 2: Physiographic location of project area. Map adapted from U.S.G.S. Albuquerque Quadrangle, New Mexico (1963). Scale 1:250,000.

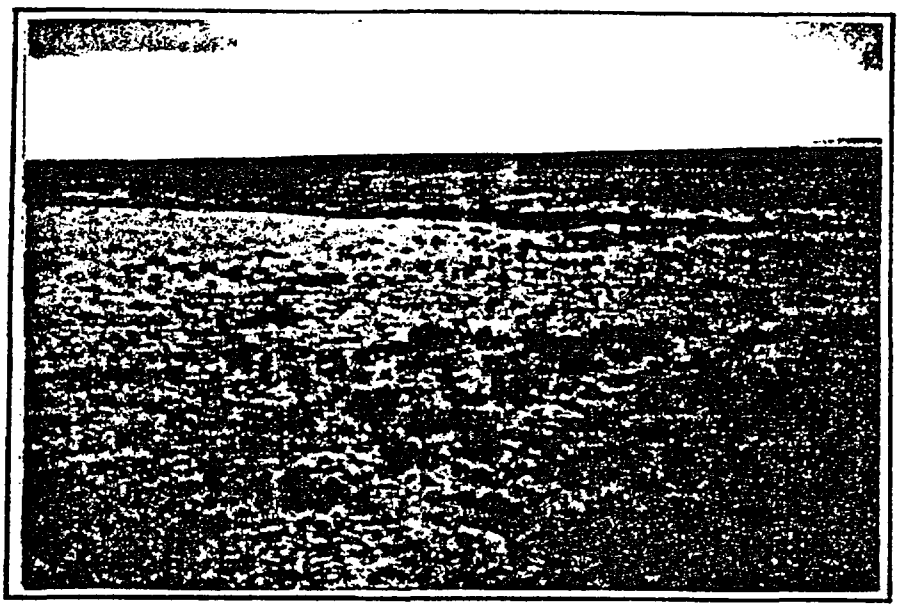

Figure 3: Project area overview, overlooking basin.

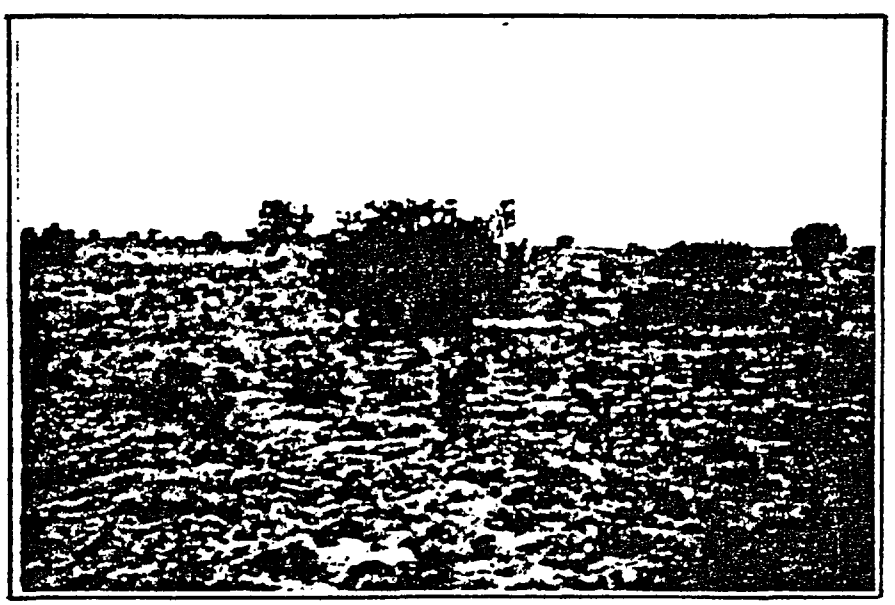

Figure 4: Project area overview, near perimeter of basin.

Fauna common to the zone include mule deer, coyote, many species of rodents and small birds, raptors and waterfowl. Observed fauna are cottontail rabbits, blacktail jackrabbits, ravens, horned larks and a golden eagle. Coyote sign was observed, but none of tracks noted were fresh.

Area climate is mild and arid (PNM 1978:100). Moisture is localized, resulting mostly from summer precipitation. Frost-free days average about 130 (PNM 1978:109), and rainfall in Bluewater is recorded at 24 cm (9.56 inches) (Tuan et al. 1973).

Successful, large-scale agriculture in the area requires irrigation, although sheltered valleys tend to collect runoff. Unfortunately, they also collect the heavier cold air, increasing the potential for frost (Tainter and Gillio 1980:11).

CULTURAL OVERVIEWS

Prehistoric Occupation

The Red Mesa Valley forms a natural pathway between population centers in the Little Colorado and Puerco rivers to the west and the Rio Grande to the east, thus encouraging the movement of people in both directions. Consequently, sites of various cultural traditions from all points in time occur in the area. But regardless of how many studies have examined those remains, only recently have regional syntheses emphasizing subsistence-settlement patterns and cultural processes been presented (Tainter and Gillio 1980; Scheick 1981, 1985, 1990).

The following discussions borrow heavily from those syntheses.

Paleoindian

Paleoindian culture is the first recorded evidence of human occupation in the Southwest (9500-5500 B.C.), and sites are identified by the presence of specific projectile point types found in association with scatters of chipped stone. Primary subsistence was based on pleistocene megafauna, such as the mastodon and *bison antiquus*, supplemented by smaller game and wild plants. Although characteristic projectile points, found either in isolation or on sites with remains of later occupations, are recorded for the region (Scheick 1979; Whitmore 1979), single component Paleoindian sites are few. Most of these finds occur in the highlands (Tainter and Gillio 1980). As a rule, Paleoindian sites tend to contain large amounts of unutilized white chert and obsidian debitage. The lack of Paleoindian remains in the area may be due to the absence of exposed geologic features associated with that time period (Cordell 1979).

Paleoindian use of the study area apparently was transitory and by small populations. Within the Red Mesa Valley, sites yielding artifacts diagnostic of the Paleoindian period occur in wooded highlands; however, in all likelihood, the artifacts are curate items.

Study of the Paleoindian period in the Red Mesa Valley has focused primarily on finding and identifying those sites. Consequently, information on settlement patterns and area use is minimal.

Archaic

The Archaic culture (5500 B.C. - A.D. 400) succeeds the Paleoindian period and also is identified by distinctive projectile point styles. Whether due to climatic changes and/or the disappearance of megafauna, populations relied increasingly on small game and wild plants. These mobile hunter-gatherers probably followed a seasonal circuit based on the availability of game and maturation of wild plants. In later Archaic periods, maize horticulture was introduced to the subsistence base.

Sociotemporal and technological changes of the local Archaic culture follow cultural-temporal phases developed primarily from Cynthia Irwin-Williams' work in the middle Rio Puerco Valley (1973) where she defined the Oshara tradition. Generally, the Oshara tradition is thought characteristic of northwestern New Mexico with a southern boundary posited along the Rio San Jose.

The Jay phase marks the beginning of the Oshara tradition sequence (5500-4800 B.C.) and is defined by distinctive stone tools and specific site locations suggesting game-animal observation. Within the middle Rio Puerco Valley, basalt was a preferred raw material type for chipped stone artifacts. The absence of groundstone in site assemblages is interpreted as a reliance on hunting. Two types of sites were identified by Irwin-Williams: the base camp, located near canyon heads and representing repeated returns to the same locality, and the specialized activity site, occurring in locations reflecting mixed but limited subsistence activities. Irwin-Williams believes the tool kit, limited faunal evidence and reoccupation of favorable localities suggests a mixed spectrum of subsistence activities adapted to year-round exploitation of a fixed group of local resources by small groups of people.

The Bajada phase (4800-3200 B.C.) is an outgrowth of the Jay with many similarities in tool kit and site location preference; however, slight differences occur in projectile point styles together and an increasing number of large chopping tools and poorly made flake side scrapers. The choppers and scrapers indicate increased reliance on coarse plant foods. The greater incidence of Bajada sites implies a population increase.

The data indicate continuity from the preceding Jay phase with adaptation to a broad spectrum resource base.

During the San Jose phase (3200-1800 B.C.), formal tool styles changed, the number of large chopping tools increased and groundstone first appeared in artifact assemblages. The presence of groundstone suggests the increased importance of wild plants in the food base. Although hearths occur on Bajada phase sites, the multiple hearths characteristic of San Jose phase sites suggests populations either were larger and aggregating for short periods of time or they were serially reoccupying sites. Post-holes found on excavated San Jose phase sites indicate shelters were built at the larger camps. Habitation sites or base camps correlate with canyon heads above seeps and springs and on dunes of valley slopes (Beal 1980). Special activity sites continued to be present, with some fairly large ones recorded.

Data suggests increasingly localized adaptation focused on the favorable canyon head environments. Noticeable is the abundance of medium and small game animals in site faunal assemblages.

During the Armijo phase (1800-800 B.C.), maize agriculture was introduced and is reflected in types and frequency of groundstone on sites of the phase. Irwin-Williams suggests that within the middle Rio Puerco seasonal population aggregation with concomitant complexity of social and economic organization occurs (1973:9-10). Site locations continue with base camps on cliff tops, with some use of cliff base shelters as base camps.

The En Medio phase (800 B.C. - A.D. 400) has the recognizable antecedents of the Anasazi tradition and generally is termed Basketmaker II. Bifacial knives and drills are more common in these assemblages than those of San Jose. Armijo cliff shelters apparently were used in the fall and winter seasons, and dune sites in the summer (Irwin-Williams 1973:12). Winter sites are characterized by slab-lined cists for food storage. Reliance on plants is more pronounced as demonstrated by the increasingly number of groundstone types, with increased emphasis on maize horticulture. These changes were concomitant with regional population growth.

A second Archaic tradition represented in the study area is the Cochise culture, normally found in southern New Mexico and Arizona and northern Mexico. As with all aceramic cultural traditions, it is recognized by distinctive projectile point styles. Archaeological evidence indicates maize was incorporated into the diet at an earlier period than in the Oshara tradition (Irwin-Williams 1973). Historically, the Rio San Jose was suggested as the northern boundary of the Cochise.

The Cochise culture is subdivided into phases, spanning a period of between circa 7,000 B.C. and A.D. 1 (Irwin-Williams 1979:37). Phases are identified by their distinctive projectile point types and associated chipped stone assemblages. The earliest sites represent the remains of economically eclectic groups whose physical evidence includes thin flat milling stones and cobble manos as well as percussion flaked choppers, scrapers and knives. Evidence suggests that by 7,000 or 6,000 B.C. populations practiced a mixed hunting-gathering strategy, but by the end of the Archaic, site assemblages reflect a mixed foraging economy with emphasis on a well-developed groundstone industry dominated by shallow basin-shaped metates and cobble manos. The wide variety of plants retrieved from sites, representing different environmental zones, suggests scheduling was an integral part of the settlement system. By about 2,500 B.C. maize and squash were added to the diet, but with little initial effect on the subsistence cycle. Changes in site locations, reduction in territory size, and the creation of surplus is postulated, however, by about 750 B.C. when a more productive variety of maize was introduced into the Southwest. Other artifacts representative of the late Archaic

Cochise tradition include crude choppers, various scraper forms, and a range of projectile point types.

Archaic sites in the Red Mesa Valley, for the most part, represent limited activity locales associated with hunting game, opportunistic foraging and/or stone tool raw material acquisition (Scheick 1985). Preferred site locations were wooded mesatops and elevated features in the pinon-juniper woodland in the highlands and ridgetops and/or dune slopes in the valleys. Scheick (1985) suggests the valley was exploited during late summer/early autumn by transient groups possibly enroute to the foothills of the Zuni Mountains. Further, she hypothesizes these same populations also were exploiting the southeastern portion of the San Mateo Basin during the spring and summer months. Because of the ephemeral quality of the sites, and possibly due to shifting sand overburden, not as many Archaic sites are recorded compared to surrounding regions (such as the San Juan Basin).

One major research concern identified for the Archaic period is the presence of both the Oshara and the Cochise Archaic traditions in the area. Remains of both traditions have been identified in the region, often on the same site. Consequently, archaeologists are being forced to reassess their assumptions about spatial boundaries drawn and relationships postulated for them. A second research issue concerns the applicability of the Oshara settlement-subsistence pattern as proposed by Irwin-Williams (1973) outside the Rio Puerco Valley. Evidence from adjacent areas suggests many local variations occur and that the base camp-specialized activity locus model may be a specialized settlement pattern restricted to specific areas. Finally, the nature of Archaic occupation and land use within the Red Mesa Valley is only poorly understood, and inter-area relationships not well defined.

Anasazi

The discussion of Puebloan cultural development is derived from Scheick 1985, and the reader is referred to that publication for more detailed dialogue.

The Basketmaker period is viewed as transitional between a hunting/gathering population and an increasingly aggregated sedentary population that relied on horticulture (Irwin-Williams 1968:53). In the San Juan Basin subregion, Basketmaker manifestations are believed to have developed directly from the earlier San Jose Complex (Bryan and Toulouse 1943), which encompasses Irwin-Williams' San Jose, Armijo and En Medio phase distinctions. In the Rio Puerco to the east, the Trujillo phase has been assigned dates of A.D. 400 to 600 (Irwin-Williams 1968a:12). Also, grayware pottery is associated with the San Juan Basin sites, as are corner-notched projectile points similar to those of the En Medio phase.

Lobo Complex (Bryan and Toulouse 1943:269) diagnostics comprise "...a group of stone implements consisting of serrated and nonserrated points smaller than those of the San Jose Complex, drills, knives, scrapers and grinding implements. The points are...small and either wide or narrow...In general, the Lobo points are less well finished than those of the San Jose...Also common to this complex...are leaf-shaped points, leaf-shaped knives, choppers, and the mano and metate..." (Bryan and Toulouse 1943:273). The Lobo Complex was first identified in the Grants area on the southwest flank of Mt. Taylor, and although remains are associated primarily with this area, some tools at En Medio Shelter on the Rio Puerco are suggestive of the Lobo Complex (Irwin-Williams and Tompkins 1968:18-19). Byran and Toulouse propose that Lobo Complex materials are the only remains of an Archaic/Pueblo interface in this portion of the San Juan Basin because they are associated with supposedly contemporaneous ceramics and Puebloan lithic materials. Interestingly, the lack of Basketmaker sites tends to support that theory.

Several hundred archaeological sites dating to the Anasazi period have been recorded in the Eastern Red Mesa Valley. Yet, very little is understood about the nature of that occupation. Most attempts at interpreting the wide range of variability exhibited in the archaeological record of the area have been speculative and biased by other developments in the San Juan Basin, particularly by Chaco Canyon. However, this approach has considerable precedent. Beginning with Gladwin (1945), the interpretation of occupation in this general area has been that it was somehow tied to the vagaries of the Chaco phenomenon. Gladwin saw these ties as developmental, while more recent authors view them as economic and/or social.

Gladwin isolated a series of phases within the broader periods defined by the Pecos system. According to Gladwin (1945), during Basketmaker II southern immigrants influenced the traditional Basketmaker culture. As a result, the culture took form that evolved into what is described as the Kiatuthlanna Phase through Pueblo I, later becoming the Red Mesa Phase in the early half of Pueblo II, the Wingate Phase in later Pueblo II, the Hosta Butte phase in the early half of the Pueblo III, and finally the Bonito phase in late Pueblo III (Gladwin 1945:6). Architectural and material culture remains associated with each of these

developmental sequences became progressively more sophisticated.

White Mound phase (A.D. 750-800) sites consist of pithouses in conjunction with contiguous, rectangular, above-ground storage rooms made of jacal, and associated pithouses contain many features characteristic of kivas. Southern ceramic types are found on these sites, and other types found show strong similarities to those southern types.

During the following Kiatuthlanna phase (A.D. 800-850) architectural changes include the use of above-ground structures for habitation, the removal of dividing walls in pithouses, a shift from clay to slab-lined firepits, pole support modifications, and the addition of benches. The ceramics still show a southern influence as well as the presence of southern types, but the beginnings of specialization can be seen.

The Red Mesa phase (A.D. 850-925) apparently was a period of architectural experimentation. Above-ground pueblos consist of four to six rooms and are rectangular; the walls exhibit combinations of construction techniques including adobe, wattle and daub, jacal or masonry. Firepits or hearths are located outside structures. Pit structures are assumed to be functioning as both habitations and kivas.

Wingate phase sites (A.D. 925-1000) are considerably different from their predecessors, with architecture consisting almost entirely of masonry roomblocks. Hearths occur inside and outside rooms. Pueblos contain from six to eight rooms as a rule. Pithouses continue, and kivas changed with the reduction of benches to alcoves and/or recesses. Ceramics include the introduction of Gallup Black-on-white and Wingate Black-on-red. Nonlocal ceramics on these sites are thought to be rare. Gladwin believed the Red Mesa Valley was abandoned by A.D. 1050.

The Hosta Butte phase (A.D. 1000-1075) is applied to sites located north of Crownpoint, New Mexico that are characterized by their size (from 20 to 30 rooms), the presence of multiple kivas, and a distinct style of banded masonry. Chaco Black-on-white appears and although McElmo Black-on-white does also, it is considered an intrusive.

Criticisms of Gladwin's work (Whitmore 1979; Tainter and Gillio 1980; Cordell 1982) focus on the simplified, mutually exclusive progression of cultural traits associated with each period that are now known to be more complicated and interrelated. Further, important behavioral changes associated with changing material cultural traits were largely ignored. More recent discussions of area archaeology have been structured within broad cultural periods (Pueblo I-IV) and focus on settlement patterns (Powell 1979), economic strategies (Sebastian 1983), and on economic and social organization (Marshall et al. 1979; Tainter 1980; Stuart and Gauthier 1981).

For example, Sebastian (1983) views Puebloan cultural periods in terms of settlement patterns and adjustments in economic strategy. Basketmaker II (100 B.C. - A.D. 400) sites are ephemeral and associated closely with arable land, but also are found in areas with access to hunting and gathering resources. The data suggests earlier trends of wild resource dependence and population mobility continued. Basketmaker III (A.D. 400-700) habitation sites yield evidence of seasonal sedentism and some reliance on horticulture, although the location of limited activity sites still reflect exploitation of a wide variety of wild resources. By Pueblo I (A.D. 700-900) sites are located close to alluvial land where run-off occurs, emphasizing the importance of horticulture in the economic strategy. Evidence also indicates an increase in population and incidence of storage on sites. During Pueblo II (A.D. 900-1100) populations increased significantly, expanded into previously unoccupied areas, and formed community clusters of permanent and semipermanent settlements. By the middle of Pueblo II, populations become aggregated, and evidence exists for a region wide interaction/exchange network identified as the Chacoan Phenomenon. Specialized architectural features referred to as Chacoan outliers appear in locales removed from Chaco Canyon, suggesting changes in area social organization and local economies. In the Red Mesa Valley, outliers often occur near the base of a mesa in areas not densely settled by local populations. By Pueblo III (A.D. 1100-1300) outlier communities became pronounced. Typically, Chacoan outliers are surrounded by a variety of site types, the highest concentrations occurring within a 3 km (2 mile) radius (Whitmore 1979). Within the first kilometer most sites are fieldhouses, and site type variety increases with distance, particularly in the third kilometer (Scheick 1985). Also, the earliest dating sites are farthest away, suggesting a deliberate congregation near population centers apparently occurred even before the Chaco influences. This situation is interpreted as a consequence of the expanding Chaco system, centered in the San Juan Basin 69 km (43 miles) to the north. The Chacoan system was characterized by sophisticated public architecture, extensive trade relationships and support of a large population in a relatively small area (Sebastian 1983:13). Finally, the collapse of the Chaco system resulted in a collapse of the support systems, and many areas were abandoned.

In the Red Mesa Valley, little evidence exists for increased reliance on maize agriculture during the Basketmaker period and the similarity of these sites to earlier cultural manifestations argues for a continuation of largely marginal use of the area. Most Basketmaker II and II/III manifestations are isolated finds or small artifact scatters, while Basketmaker III sites are sherd and lithic scatters often with or without associated hearths or cists. Of interest, however, is that during Basketmaker III a shift from inhabiting high resource diversity slopes or elevated locations toward valley bottoms is seen and horticulture occurs (Scheick 1985). No large habitation sites are known.

The larger number of sherd and lithic scatters combined with a few small surface structural sites reflects a gradual population increase over earlier periods. Nevertheless, use still was sporadic, and economic strategies focused on hunting and gathering, with possibly some attempts at horticulture made.

A small increase in population is evident during Pueblo I, the majority of sites being sherd and lithic scatters.

Settlement patterns are identified more readily during Pueblo I, with elevation playing a vital role in site type/placement correlations. Pithouses and small surface structures are located in pinon-juniper fringe areas at elevations between 7,000 and 7,100 feet, while larger pithouse villages occur at elevations up to 7,200 feet. Limited activity sites are located in these areas and also in the lower grasslands (Scheick 1985).

By A.D. 800 Pueblo I/II occupation of the valley was seasonal, with semipermanent sites established on the valley slopes (6,800-6,900 feet) as well as on mesatops. Sites containing late Pueblo I/early Pueblo II ceramics include surface rooms with associated pit structures, contiguous surface rooms with possible kivas, fieldhouses, and large villages. During this period, a number of traits developed that later solidified around large Chacoan outliers. At the same time, however, pithouse villages with possible surface structures were established along the pinon-juniper fringes bordering secondary drainages of Casamero Draw in the highland areas (Scheick 1985:17)

Archaeological evidence indicates occupation and use of the region increased during Pueblo II (A.D. 900-1100). Discrete clusters of small, medium and large sites are spread out along the numerous drainages that form the headwaters of the Rio San Jose. Early to middle Pueblo II sites consist of isolated fieldhouses associated spatially with small to medium-sized roomblocks (of from three to six rooms) with kivas, to larger groups of roomblocks of comparable and large size (Museum of New Mexico, Survey Record Room Files). Limited activity sites, petroglyphs, and rockshelters are also documented.

Occupation of elevations below 6,800 feet became common, as tributaries of the major drainages were farmed. The correlations of specific site types within particular elevations is pronounced for sites of this period. For example, farmsites (3+ rooms seasonally occupied and located near agricultural lands) occur at elevations between 6,800 and 6,900 feet and between 7,200 to 7,300 feet, pueblos (primary habitations occupied semipermanently and located in the most favorable physiographic zones) occur at elevations between 6,900 and 7,000 feet, and fieldhouses (1 or 2 room sites occupied intermittently and located near agricultural lands) occur between 6,800 and 7,000 feet and 7,200 and 7,300 feet. Limited activity sites (usually containing no visible structures, representing specialized use of an area and thus occurring in various locations) are found all elevations (Scheick 1985).

By late Pueblo II (A.D. 1000-1100), Chacoan outliers were well established in the eastern Red Mesa Valley. Three outliers occur 6.4 km (4 miles) north of the project area at the base of Mesa Montanosa (LA 6022, 12573-A and 12573-D). The earliest constructed, LA 12573-D, was occupied between late Pueblo I and early Pueblo II (A.D. 900-1000). The site is situated on a broad bench at an elevation of 6,940 feet. LA 12573-A dates exclusively to Pueblo II (A.D. 1000) and was constructed on a broad sandy ridge at an elevation of 6,960 feet. LA 6022 is the latest of the three, inhabited from late Pueblo II to early Pueblo III (A.D. 1000-1100). The site is also the largest of the three outliers and is located at 6,980 feet above sea level (Marshal et al. 1979).

Other community types also documented in the valley and contain large multiple or isolated C- and T-shaped roomblocks with kivas as the center of the cluster (Powell 1979; Miller and Frizell 1980). Whitmore feels these communities are either part of a large interconnected regional pattern in which the individual communities were directly associated with the outlier community, or that they are a series of smaller independent communities (1979:55). Interestingly, the alternate community types (mainly habitation) are located along the many tributaries and headwaters of the Rio San Jose, while the outliers are located in the Rio San Jose valley, an area never densely occupied prior to their introduction.

Further, upland populations were probably loosely related, mobile, and highly adaptive. The kinds and locations of sites suggest a fluid system, and population alliances within that system may have been temporary and constantly changing. Outlier communities associated with the lowland valley drainages apparently were more localized and focused in resource exploitation, probably as a result of social and environmental circumscription rather than attempts at creating surplus for systematic exchange.

No evidence exists to suggest that populations in the lowland or upland communities participated in long distance trading of food. There is no evidence of technological specialization in the production of economic goods other than the presence of expedient technology related to subsistence production. The sites produced no evidence of production or storage of surplus food. The heavy reliance on native plants in combination with the small numbers of storage features indicates there was little surplus.

The low percentages of intrusive ceramics at farmsites, fieldhouses, and other residential sites suggest that simple exchange was conducted at the site or group level. Evidence suggests intra-valley exchange was far more common than exchanges farther afield. The low percentages of nonlocal goods in Puebloan inventories make suggestions of large-scale trade insupportable. There were no interruptions in local ceramic or flake tool traditions that would suggest new innovations. Ceramic hybridization and combinations are interesting, but their presence can be attributed to experimentation, communication networks, etc. rather than to population movement.

There is some indications that Chacoan outliers may have been in situ developments (Tainter and Gillio 1980; Doyel 1982) and that they fulfilled public or administrative functions.

The role of the outliers in the Red Mesa Valley is based largely on conjecture since few excavations have been conducted and surveys have provided only limited data. Data from excavations by the School of American Research (Beal 1982) of portions of the Casamero sustaining complex suggest the majority of the surrounding three to four room pueblos were seasonally occupied farmsites, and that by the early Pueblo III period populations were affected by nutritional stress. Beal feels that pre-A.D. 1000 sites represent temporary, short-term occupation, while post-A.D. 1000 sites exhibit long-term or repeated use. Most importantly, there is no evidence that local sites participated extensively in or benefited from trade with a sophisticated cultural system. There is no indication of surplus production or processing capacities beyond what was necessary for simple subsistence (Beal 1982:349).

Occupation of the Red Mesa Valley continued into Pueblo III (A.D. 1100-1300) but is represented by far fewer sites than Pueblo II. Throughout the period, subsistence strategies continued to emphasize a mixed pattern of hunting, gathering and agriculture. During early Pueblo III, populations concentrated near small tributaries serving restricted drainage basins, on gentle slopes without established watercourses, or in the highlands that benefited from increased precipitation. By A.D. 1050, however, the climate became too wet, and floods rendered the lower portions along major watercourses unusable (Beal 1984). Populations began to abandon valley floor settlements, and by the latter half of the Pueblo III period, the outliers were abandoned.

Sites constructed during Pueblo I and Pueblo II continued to be occupied in the highlands. Reminiscent of earlier Pueblo I patterns, large permanent habitation sites of the period are located between 7,000 and 7,100 feet along the edges of the pinon-juniper woodland. Those fieldhouses and farmsites that occur are found normally above 7,000 feet, and occupation of these two site types probably was short-term and possibly intermittent. Limited activity sites occur in a wide variety of environmental situations.

Smaller pueblos of 8 to 10 rooms were abandoned first in the highlands, about the same time as or following those in the lower major tributary valleys, leaving only a few large complexes in the most favorable areas (Scheick 1985:259). Abandonment of the area was gradual and probably occurred in two separate episodes. Indications are that the relationships between upland and lower valley groups were severed by Pueblo III as a result of competition for arable land. The number of sites in the uplands did not increase dramatically with the abandonment of the lower valleys; rather, the increase in site size could be a result of the abandonment of many of the smaller pueblos already present in that area. Ruppe (1966) notes an increase in population and in western influence on local pottery assemblages in the Malpais-Cebolleta area during the Pilares phase (A.D. 1100-1200). There was another surge of population in the Malpais-Cebolleta area during the following Kowina phase (A.D. 1200-1400), perhaps as a result of abandonment of the large upland communities around A.D. 1200. The population increase to this eastern area may be from the Red Mesa Valley area.

Between A.D. 1200 and 1250, the highlands of the Red Mesa Valley were used as a source of wild plant and animal foods, as reflected in the increased number of limited activity sites dating to this time. Final abandonment of the area occurred about A.D. 1250.

Major research concerns of the Puebloan period in the area focus on the nature of Pueblo II expansion, the role of Chaco Outliers, and the nature of Chacoan and indigenous population interactions.

Historic Occupation

Pueblo

A cultural hiatus occurs in the Red Mesa Valley after A.D. 1250, as apparently the population center shifted eastward. Upon the arrival of the Spanish in 1539, the Acoma Pueblo use area extended a considerable distance from the mesatop in all directions. Modern Acoma residents claim the mesatop pueblo has been occupied continuously for at least 1,000 years and that their origins are from the east and northeast, as far away as Mesa Verde (Ellis 1979). Records indicate the Puebloans relied on dry farming and ditch irrigation for their crops, and hunted and gathered in the mesas and mountains of Mount Taylor and the Zuni Mountains.

The Acoma participated in the Pueblo Rebellion of 1680, and in 1692 accepted Reconquest refugees from the Rio Grande Pueblos of Cochiti, Cieneguilla, Santo Domingo and Jemez. Sometime between 1697 and 1699, the refugees and a few resident Acomas split from the pueblo and founded Laguna Pueblo to the west (Ellis 1979).

Both pueblos relied on sheep and goat herding as well as agriculture. But constant Navajo raids caused the size and location of their herding territories to fluctuate during the next century, and when the Spanish established ranches in the confluence of the Rio Puerco and Rio San Jose, territory was further reduced (Ellis 1979; Garcia-Mason 1979).

Today, the use area claimed by the Acoma people extends almost to Bluewater; that of the Laguna is farther west of Grants (Winter 1980). The Laguna often crossed the Red Mesa Valley, however, when traveling to the Zuni Mountains and/or to the Little Colorado River. The project area occurs just within the northwest corner of the historic Acoma territory (Rands 1974). Indications are that the flats east of San Mateo Creek were used for seasonal agriculture, and the highlands, more often than not, also were used in the warm months for summer pastures, raw material acquisition, and wild plant food and game exploitation.

Preferred warm-weather herding site locations apparently were open airy lands with a northern exposure and good sheep beds (a large shady juniper is important). Structure openings most often are oriented to the east because of the prevailing west winds, and a U-shaped hearth occurs 1 to 2 m in front of the door. No large corrals were built, but small lambing pens were used. In the winter, herds were moved to lower elevations. Winter sites were established in areas with natural windbreaks, such as sheltered canyons, along talus slopes, and major mesa slopes surrounding drainage valleys (Cattle et al. 1981). Lambing pens were built across small rincons. Acoma summer ranges included the south slopes and top of Mount Taylor; winter ranges centered around Lagunas Monte and Ambrosia. Laguna herds ranged farther south and east of these areas (Rands 1973).

Pueblo herding structures are of dry-laid, unshaped boulders that often incorporate natural features; wall heights average 40 cm. Few artifacts are found in association. Small cairns, consisting of two or three stacked rocks, are found in the area (Cattle et al. 1981). Since the early twentieth century, tents were used, leaving only rock rings or rectangles.

Navajo

Dates for when the Navajo began to use/inhabit the Red Mesa Valley are problematic. Predominantly nomadic hunter-gatherers, the Navajo were present in the area when the Spanish entered the area and had been creating problems with the local Puebloans by occasionally raiding them for crops and slaves. Because of the threat they posed, Puebloan use area boundaries shifted and shrank considerably. Moreover, it was impossible for the Spanish to establish settlements in the area until the mid-1800s when the Navajo were forced onto reservations. Indications are that at least one peaceful Navajo group, however, was allowed to remain in the area (Schaafsma 1977:26). Early Navajo populations subsisted on hunting, gathering, trading and raiding,

but with Spanish influence, herding of sheep and goats became important.

By the 1880s, herding was supplemented by wage-jobs with the railroad. Between 1880 and 1930, competition for optimum grazing lands increased, but then fell between 1930 and 1950 with government stock reduction programs. As a result, wage labor increased, including working as herders for Anglo, Hispanic and Puebloan ranchers. In fact, after the 1950s, little herding of their own stock occurred.

In the Red Mesa Valley, recorded sites most often reflect herding activities, with only a few habitation sites known. Sites are found in sheltered alcoves, near rock outcrops and escarpments, at canyon heads, and in pinon-juniper woodlands and grassland fringe areas (Tainter and Gillio 1980).

The primary research concerns in area historic archaeology are the identification of early Acoma and Navajo sites, settlement and use patterns, and the processes of acculturation as reflected in the archaeological record. Other than architectural features, such as hogans and sweatlodges, little material remains provide clues to the ethnic identity of the majority of historic sites in the area. Thus, establishing cultural affiliation also is important for understanding area history.

Spanish/Anglo

Although the Spanish first entered the region in 1539, the area already was occupied by the Puebloans and the Navajo. Relative peace was established with the Puebloans after the Reconquest of 1696. The Navajo, however, prevented any permanent settlements until the 1800s. Since 1846, local sheep herders, Texas cattlemen, Oklahoma farmers, California gold seekers, Mormon settlers from Utah, and railroad workers have steadily populated the east end of the Red Mesa Valley. The closest community to the project area, Bluewater, was settled as a small irrigated farm in 1850 by the Frenchman Martin Boure. In the 1870s other French families followed, moving into the area and organizing a cattle company, and a small reservoir was built to supply more irrigation water (Pearce 1965). In 1880 the AT & SF railroad was constructed, providing supplemental wage labor to the herding and farming subsistence base. The railroad sponsored construction of a larger reservoir so that the entire valley around Bluewater could be irrigated. The town of Grants, located 18 km (11 miles) southeast of Bluewater, was established in 1882 as a railroad construction camp, named for three brothers who were contractors for the railroad (Pearce 1965). Today, Grants is the largest community center in the area.

By the 1930s the valley bottom between Bluewater and Grants supported truck crops, such as carrots, beets, asparagus, etc. The area remained an agricultural center until uranium was discovered at Haystack Mountain just west of Mesa Montanosa. Anaconda built a uranium processing mill at Bluewater in the early 1950s and began mining an open pit at Jackpile Mine on the Acoma reservation. The uranium boom lasted through the late 1970s (Cattle et al. 1981), and the area is still considered the largest uranium producing and milling center for the United States.

The project area remained public land until 1931 when the land was homesteaded for stockraising by Golden P. Roundy; the homestead was applied for in 1931 but not granted until 1955 (BLM records). The southwestern quarter of the project area is New Mexico state land.

EVALUATION OF AREA RESEARCH

Archaeological research in the project region began in 1943 with the identification of the Archaic culture in the archaeological record (Bryan and Toulouse 1943). Yet, most research conducted during the early 1900s focused on investigating the large pueblo sites and documenting occurrences of specific groups using the area. During the 1950s, investigations took the form of salvage archaeology as highways begun to be built across the land. By the 1960s, however, awareness of site variability increased, and settlement pattern studies became the focus of area archaeology. Although site variability was recognized in the area during the 1970s, systematic surveys were not common. Within the Red Mesa Valley alone, 1,700 sites are documented (Scheick 1985). Most archaeological work thus far has been near Prewitt and Thoreau and west toward Gallup north in the San Mateo Valley (see Scheick 1985 for complete list of references). Most projects address particular research concerns, but those that do not at least provide descriptive information. A brief overview of major research concerns for the Red Mesa Valley is presented below.

First, the identification of regional use groups is one of the earliest topics of research, with particular emphasis on the reassessment of Cochise and Oshara tradition boundaries. The Cochise are assumed to have inhabited southern New Mexico, and the Oshara northeastern New Mexico. Segregation was assumed fairly rigid, but in the project region, sites with diagnostic projectile points of either or both cultures are found (Scheick 1985, 1990). Is such a boundary between two cultures real? Did the Cochise introduce maize horticulture to Oshara or was it an in situ development?

Second, another research question concerns the transition from Archaic to Pueblo. Basketmaker/early Puebloan ceramics often are associated with late Archaic projectile points in the area - are these sites multicomponent, or do they represent transitional cultures (Bryan and Toulouse 1943; Condie 1987)?

Third, Puebloan architectural sites are readily identifiable, but nondiagonsitc lithic scatters of both the Archaic and the Puebloan periods often are identical. Many of the sites recorded in the area are artifact scatters associated with limited activities, and since many sites lack diagnostic artifacts, differentiating between Archaic and Puebloan sites is an important research concern for the Red Mesa Valley.

Fourth, settlement pattern definitions are a major issue also, particularly during the Pueblo II period. Most notable is the role/influence of the Chacoan System in regional settlement-subsistence dynamics (Whitmore 1977; Beal 1977, 1979; Gossett and Gossett 1983; Acklan and Bertram 1985; Scheick 1985, 1990). Many assume that the Chaco system disrupted/changed local settlement patterns by exerting highly organized, religious-based control over indigenous populations, but no concrete evidence of this exits to date. Furthermore, the outliers are assumed to have served as gathering centers for raw material and agricultural produce, which were then funneled into an extensive interaction network. Finally, the abandonment of the Red Mesa Valley is correlated with the collapse of the Chaco system (Sebastian 1983:13-14). So far, the archaeological record does not support these assumptions.

Investigations of historic sites focus on questions of ethnicity - who were the ancestors of the Acoma; when did the Navajo first inhabit the area? And are rock pens and juniper corrals affiliated with the Navajo or were they also made and used by the Historic Puebloan groups of Acoma and Laguna? Also, the processes involved in the acculturation of these groups is a major research concern as it is, or is not, reflected in the archaeological record (Schaafsma 1977; Beal 1982).

Finally, the definition of traditional use areas and representative site types of historic Puebloans is a concern. Lately, research has focused on demographic studies, and site descriptions concentrate on modern manifestations without establishing links to past remains (Rands 1973, 1974; Winter 1980; Cattle et al. 1981).

METHODS AND RESULTS

The project site area boundaries are defined by seven tall metal rods festooned with three to four colors of flagging tape. They are located at each corner of the boundary and are referred to as Stations A through G. The corridor is marked in a similar fashion along the centerline with eight stations designated X2 through X8; X9 and X10 inside the project site boundaries.

Parallel contiguous transects spaced 15 m apart were used to survey inside the project area. Flagging tape was used to maintain transects and to ensure total coverage; the outside edge was laid going in one direction, and followed and retrieved on the return swath while another flag was laid on the outside again. For the corridor, the same strategy was employed using the corridor centerline as the initial guide.

Sites, isolated occurrences, and recent trash were recorded, or noted when appropriate, on the project map. A site is defined as collections of cultural material and/or features usually numbering at least ten artifacts and exhibiting internal consistency, a concentrated distribution, and/or a specific activity orientation. An isolated occurrences usually contains less then ten artifacts and exhibits none of the above-mentioned attributes. Locations of recent trash also were recorded since these remains were surprisingly sparse in the survey area, as were the locations of the two isolated pinon trees observed within the project boundaries.

The project site map scale is 1 inch to 400 feet with 2 foot contours; the corridor maps are 1 inch to 200 feet.

All documented information was recorded in field notebooks. Categories of information include physiographic location, site size and physical description, physical characteristics of features and artifact inventories, artifact distribution patterns, and site condition/disturbance. Site plan maps were made, and photographs of most sites were taken. Isolated occurrences were described and photographed or sketched when appropriate. Both site and isolated occurrence locations were plotted on field maps and U.S.G.S. quadrangle maps, 7.5-minute series.

Sites were marked on the ground by a piece of orange flagging tape with the site number on it and flagging was tied to a prominent tree or bush either within the site boundaries or on the edge. Isolated occurrences were not marked on the ground.

SITE DESCRIPTIONS AND DISCUSSIONS

Thirty-three sites (Figures 5 and 6) and 203 isolated occurrences (Figures 7 and 8) were recorded. Through a counting error, site number 27 was not assigned. However, isolated occurrence 1 was later reclassified as a site and given the SW 244-27 designation. The change resulted after observation of other sites in the project area; originally, the cultural material was considered to be too dispersed over too large an area, but later was considered consistent with the parameters of site definition in the area.

Site descriptions are presented first, followed by Table 1, listing the isolated occurrences. Legal descriptions for each site are presented as are the site's physiographical location, dominant on-site vegetation, and any physical disturbance to the site. The site character also is described, including site size, features and artifact types, numbers, dimensions, etc., and finally, a discussion of the site is presented. The site discussion includes each site's type, its cultural/temporal affinity, and site function as well as site density data, and settlement patterns.

Diagnostic artifacts, chipped stone assemblage profiles, and ethnographic data were used in defining cultural/temporal assignations to the cultural remains. Assemblage profile characteristics were identified by Beal (1980, 1984) and Scheick (1990), and ethnographic data were gathered from a variety of written sources (Rands 1973, 1974; Schaafsma 1977; Cattle et al. 1981; Beal 1982). Diagnostic artifacts include projectile points, ceramics and glass, for the most part. Projectile point styles change through time (for a complete style description, see Irwin-Williams 1973), providing cultural-temporal markers. Ceramic styles also differ through time, progressing from plain grayware to neck-corrugated to all over corrugations, and carbon paint to mineral paint with increasingly diverse design styles throughout the Pueblo period into the Historic (Post 1985). Maker's marks on historic artifacts, embossed on the bottoms of bottles and jars, are temporally sensitive and are used to determine site dates. Dates also are established by glass color; particular colors of glass were popular during particular periods in history. For example, purple glass found today actually once was clear, but the manganese used in glass between 1880 and 1920 turns purple when exposed to sunlight (Vogler et al. 1983).

Architectural styles also differ from culture to culture and through time. Structures prior to Pueblo I/Pueblo II often cannot be seen on the present ground surface, while later Puebloan architecture generally consists of surface masonry structures. Historic structures usually are characterized by different masonry techniques and differ in size, often shape, and function.

In the event diagnostic artifact or feature information is lacking on a site, particularly the case with lithic scatters, lithic profiles are used to assign relative cultural/temporal affiliations. First noted by Bryan and Toulouse (1943), and later expanded upon by Gossett and Beal (1984) and Scheick and Sleeter (1990), raw material types and attributes of lithic reduction debris are used to differentiate Archaic and Puebloan sites.

Site functions are determined by identification of intra- and intersite variability in artifact assemblages and occasionally by architecture. Lithic assemblage variability is monitored by attributes such as reduction stage, assemblage size, types and numbers of formal artifacts, and types of visible wear patterns. The archaeological context in which the artifacts are found also is considered, e.g., curation, storage, breakage, discard, tool manufacture, use or maintenance. Distribution patterns are assumed to relate directly to resource procurement strategies and are based on the following assumptions:

1. The number of items and the size of the concentration(s) indicates occupational intensity and/or reoccupation.

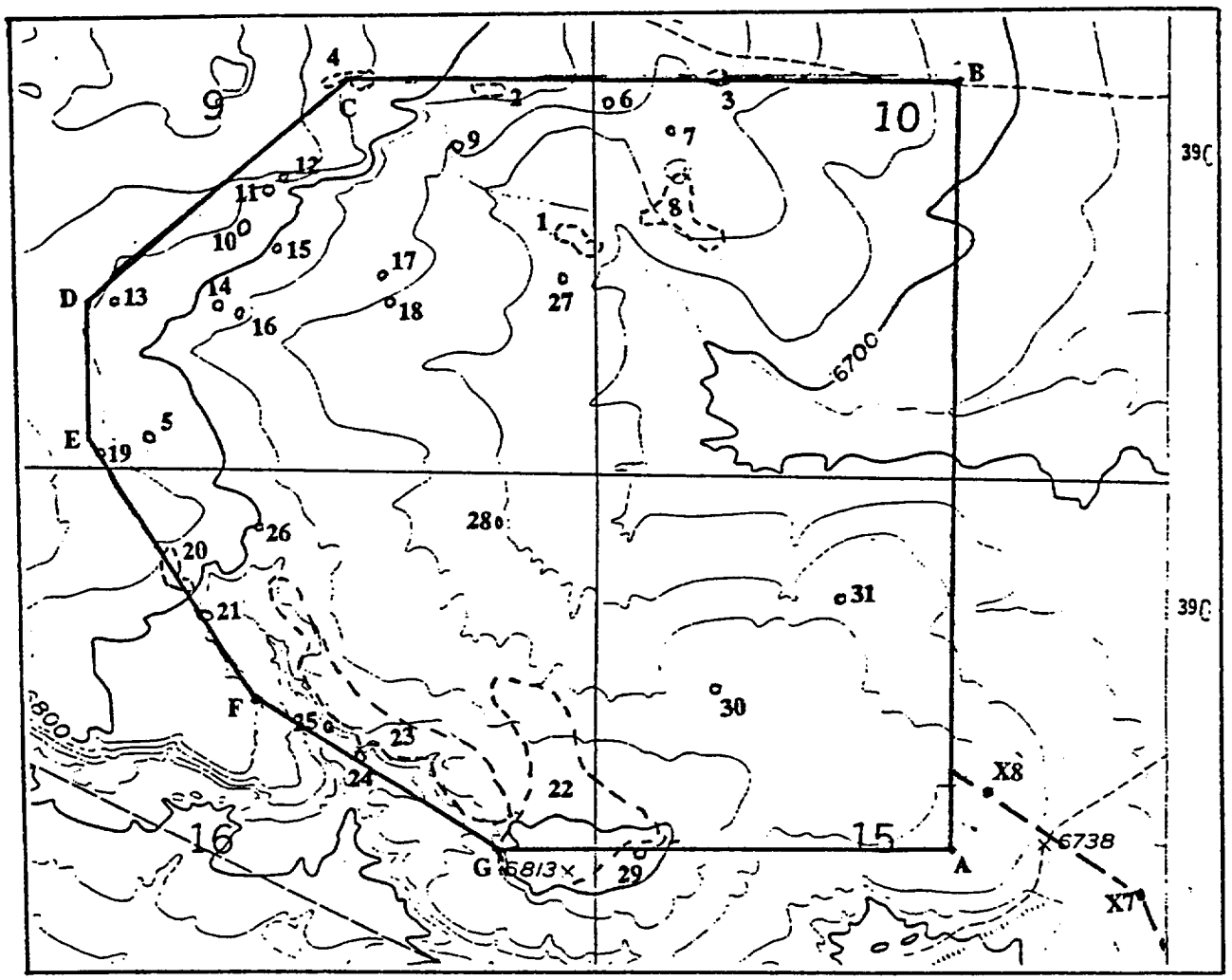

Figure 5: Locations of sites SW 244-1 through 244-31. Map adapted from U.S.G.S. Bluewater Quadrangle, New Mexico (1957, photorevised 1971). Scale 1:24,000. Map has been enlarged 154% from original size.

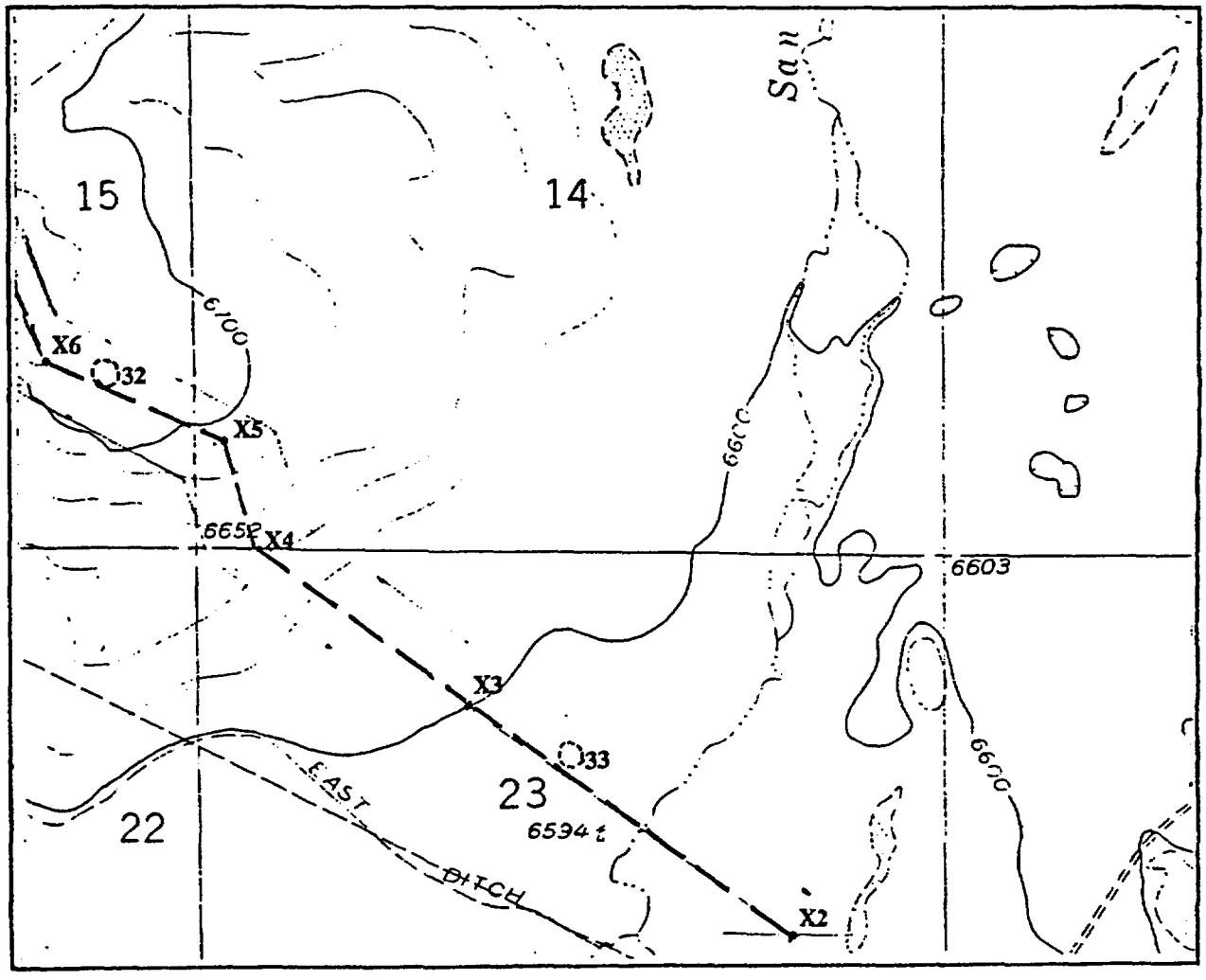

Figure 6: Locations of sites SW 244-32 and 244-33. Map adapted from U.S.G.S. Dos Lomas Quadrangle, New Mexico (1957, photorevised 1980). Scale 1:24,000. Map has been enlarged 154% from original size.

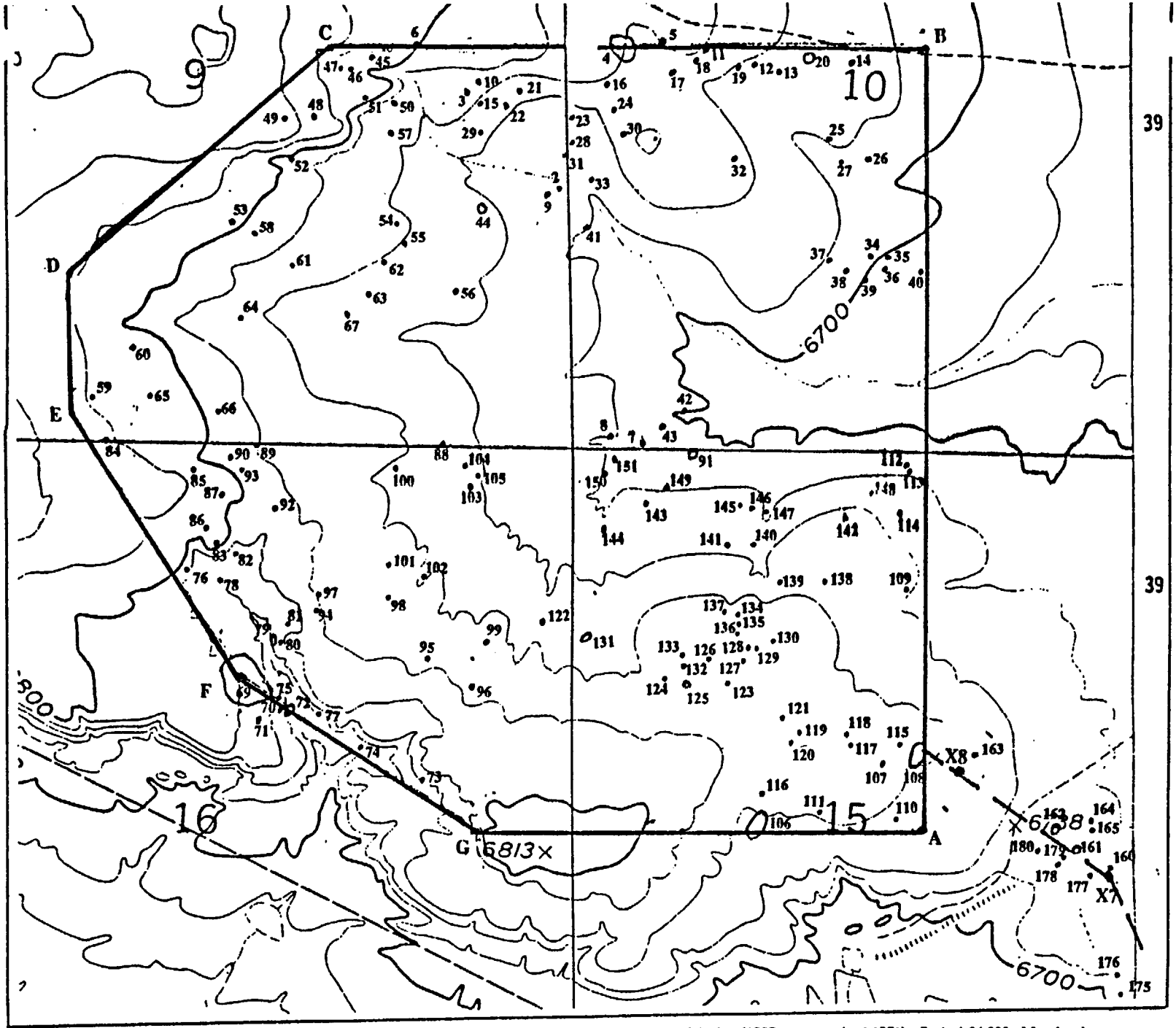

Figure 7: Locations of Isolated occurrences. Map adapted from U.S.G.S. Bluewater Quadrangle, New Mexico (1957, photorevised 1971). Scale 1:24,000. Map has been enlarged 308% from original size.

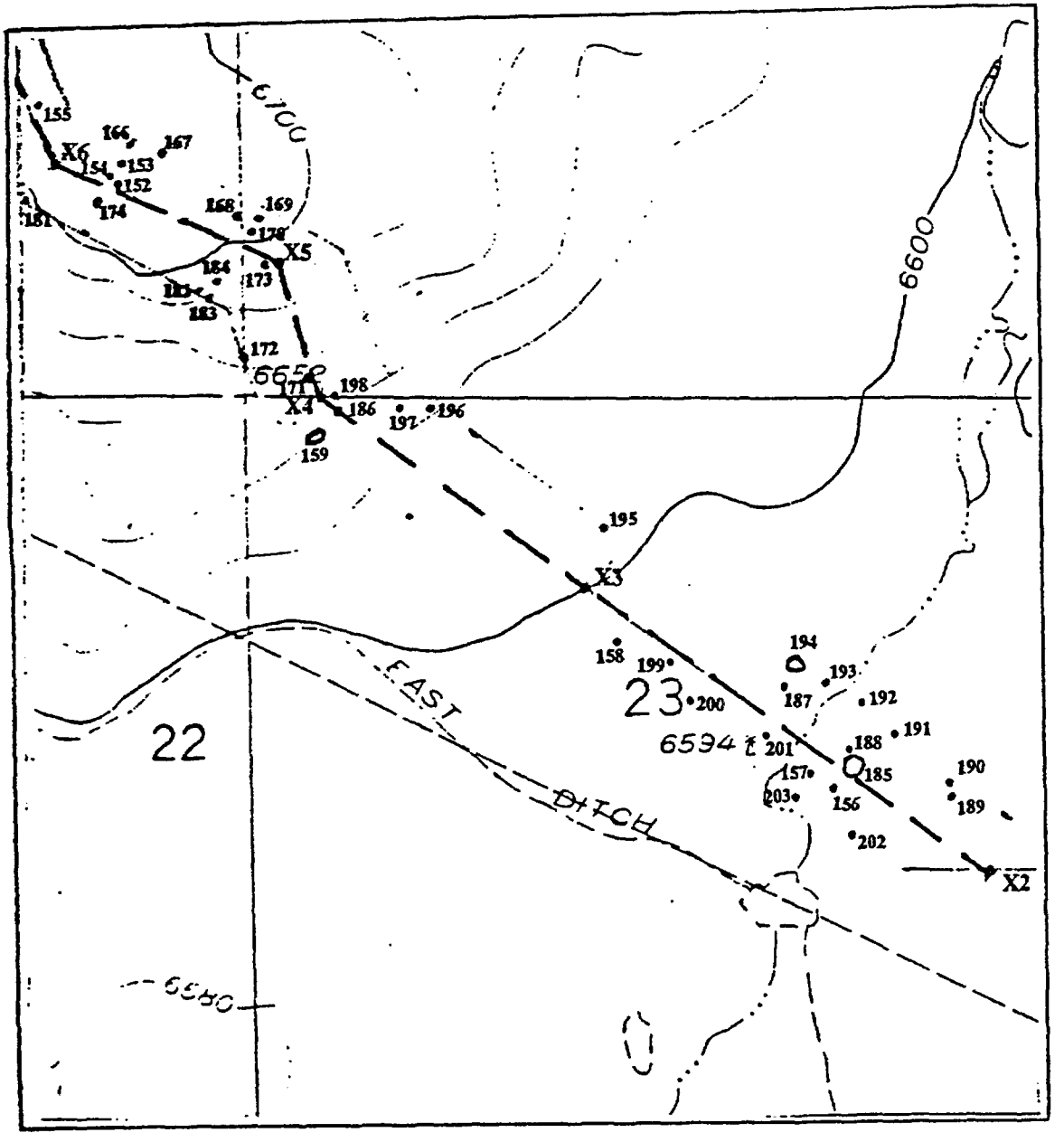

Figure 8: Locations of Isolated occurrences. Map adapted from U.S.G.S. Dos Lomas Quadrangle, New Mexico (1957, photorevised 1980). Scale 1:24,000. Map has been enlarged 308% from original size.

2. Intact, curated tools, including groundstone, in an homogeneous assemblage evidences preplanned resource procurement and thus anticipated activities.

3. Storage features and hearths indicate intrasite activity areas.

4. The lack of formal tools or tool fragments on a site and a high ratio of primary reduction flakes and flake tools suggests an expedient manufacture strategy (opportunistic utilization rather than preplanned tool use).

5. High percentages of primary and secondary reduction flakes in conjunction with unfinished, broken tools indicates a complete tool manufacturing process, from raw material reduction to finished formal tools.

6. Tool maintenance as indicated by high percentages of trimming and microreduction flakes.

The selection of raw materials for tool manufacture and use relates to procurement strategies as well as to the types of tools. Assumptions are that:

1. Durable raw materials were selected for tools to be transported long distances and intended for planned resource procurement.

2. Raw material types for tools used in expedient activities were more likely to be selected at random, resulting in unpatterned scatters at sites.

Three assumptions guide interpretations of artifact concentrations with respect to occupational episodes at a site:

1. Sites with artifact concentrations composed of tools of similar types and raw materials are considered single component with possible reoccupation.

2. Large numbers of artifact concentrations with similar assemblages indicate intense occupation with similar, recurring activities.

3. Variety in artifact and raw material types may indicate sites with multiple activities.

SITE DESCRIPTIONS

244-1

Location: T12N, R10W, Section 9

UTM Coordinates: N 3907820 E 237240
N 3907780 E 237300

Situation: The site is near the middle of the basin on the east edge of a dune ridge above the main drainage of the basin. Grasses and four-wing saltbush predominate, but a few isolated junipers are present. A dirt road bisects the site.

Site Character: The sherd and lithic scatter, measuring 117 by 175 m, consists of at least 200 artifacts with four separate concentrations visible on the ground surface Figure 9). Loci 1 and 4 contain predominantly dark colored secondary flakes, primarily Grants obsidian. Locus 4 also contains a Bajada-style projectile point base. Loci 2 and 3 consist mostly of light colored chert secondary flakes. A groundstone fragment with one ground and polished facet and a white chert biface were recorded in Locus 3. Locus 1 contain three eroded black-on-white bowl sherds and one indented corrugated jar sherd.

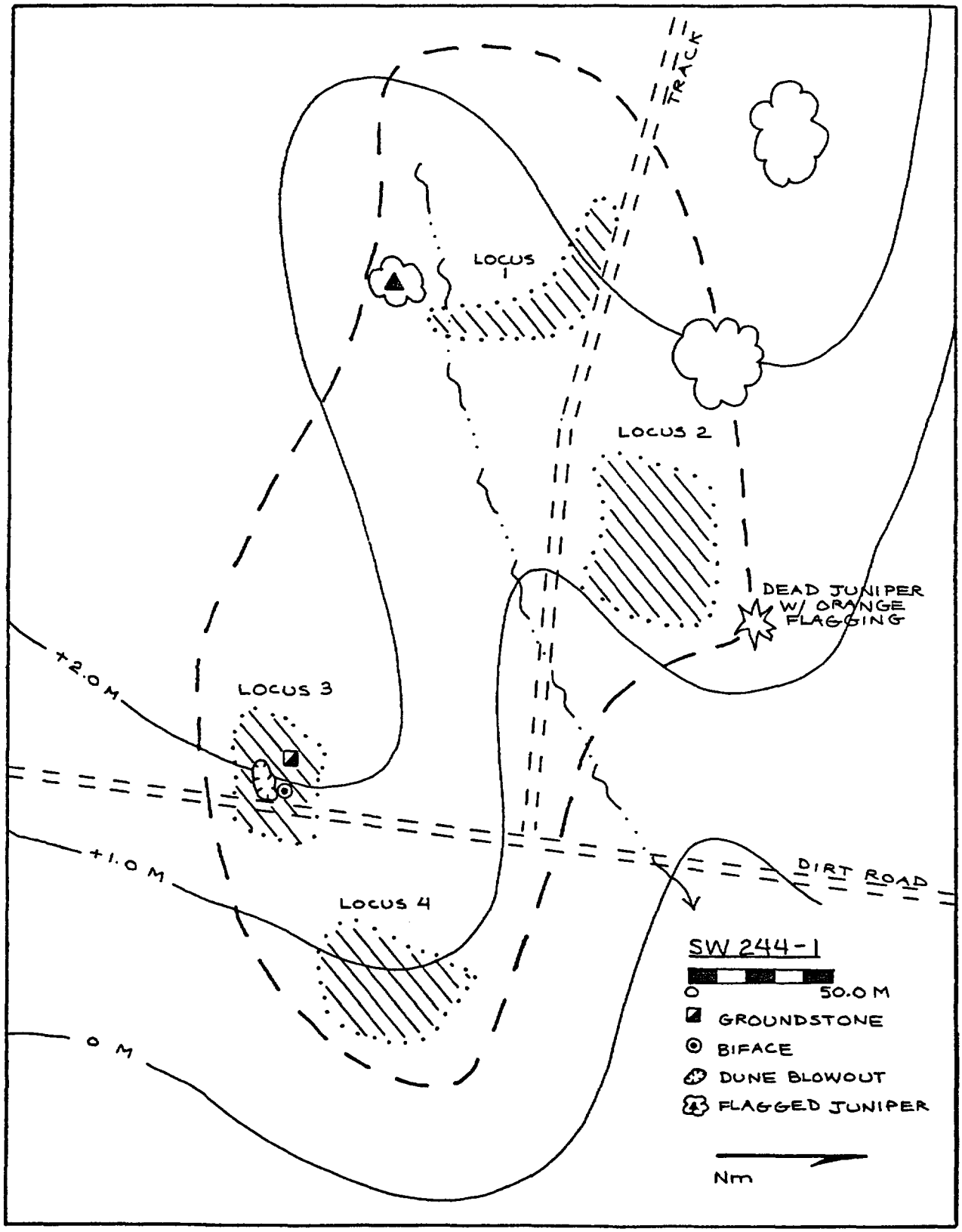

Figure 9: Site plan.

Discussion: The site probably is multicomponent, with the earliest occupation dating to the early Archaic (4800-3200 B.C.) based on projectile point styles and lithic profile (Loci 1 and 4). A second component dating to the Puebloan period (A.D. 900-1300) also is represented based on ceramics recorded and lithic profiles (Loci 1, 2 and 3). Suggested site function is a limited activity locus related to plant food procurement and processing where some hunting occurred. Repeated use is indicated.

244-2

Location: T12N, R10W, Section 9

UTM Coordinates: N 3908150 E 237100

Situation: The site extends north from the edge of a cliff face past a small rise on top of a ridge. Grasses and isolated juniper predominate in the site area. A seldom used east-west running dirt track bisects the site.

Site Character: The 21 by 50 m dispersed lithic scatter includes at least ten Grants obsidian secondary flakes; five light gray or white chert secondary and tertiary flakes, and pieces of angular debris; one Jemez obsidian tertiary flake; and a basalt Jay style projectile point (Figure 10).

Discussion: Based on projectile point style and lithic profile attributes, the site is early Archaic (5500-4800 B.C.). Site function is as a short-term limited activity locus related to plant collecting, tool manufacture/maintenance and hunting.

244-3

Location: T12N, R10W, Section 10

UTM Coordinates: N 3908160 E 237590

Situation: The site is on a ridgetop overlooking a small drainage. Grasses predominate and juniper is clustered along the edge of a cliff. A seldom used dirt track bisects the site east to west.

Site Character: The 33 by 64 m dispersed lithic scatter consists of at least 15 Grants obsidian and gray chert secondary flakes and pieces of angular debris, most of which occur in a concentration on top of the ridge (Figure 11). A number of tested gray chert pebbles also are present. Although petrified wood occurs as a natural outcrop on the ridge, few pieces were identified as true artifacts. A single Pelona-style projectile point of Grants obsidian was found. Five jar sherds with thin white slip also were recorded.

Discussion: The site is multicomponent. The earliest component dates to the middle Archaic (4000-1000 B.C.), based on the projectile point and from at least Pueblo I (A.D. 700-900) when slipped ceramics occurred. In all likelihood, the site functioned as a short-term, single-episode locus for wild plant food procurement and expedient tool manufacture during each occupation.

244-4

Location: T12N, R10W, Section 9

UTM Coordinates: N 3908160 E 236820

Situation: The site is on a ridgetop just north of a small, deep drainage lined with exposed sandstone bedrock. Station C, a project boundary marker, is on the west side of the main artifact concentration at the site; artifacts extend farther west but in less frequency. Grasses and junipers predominate.

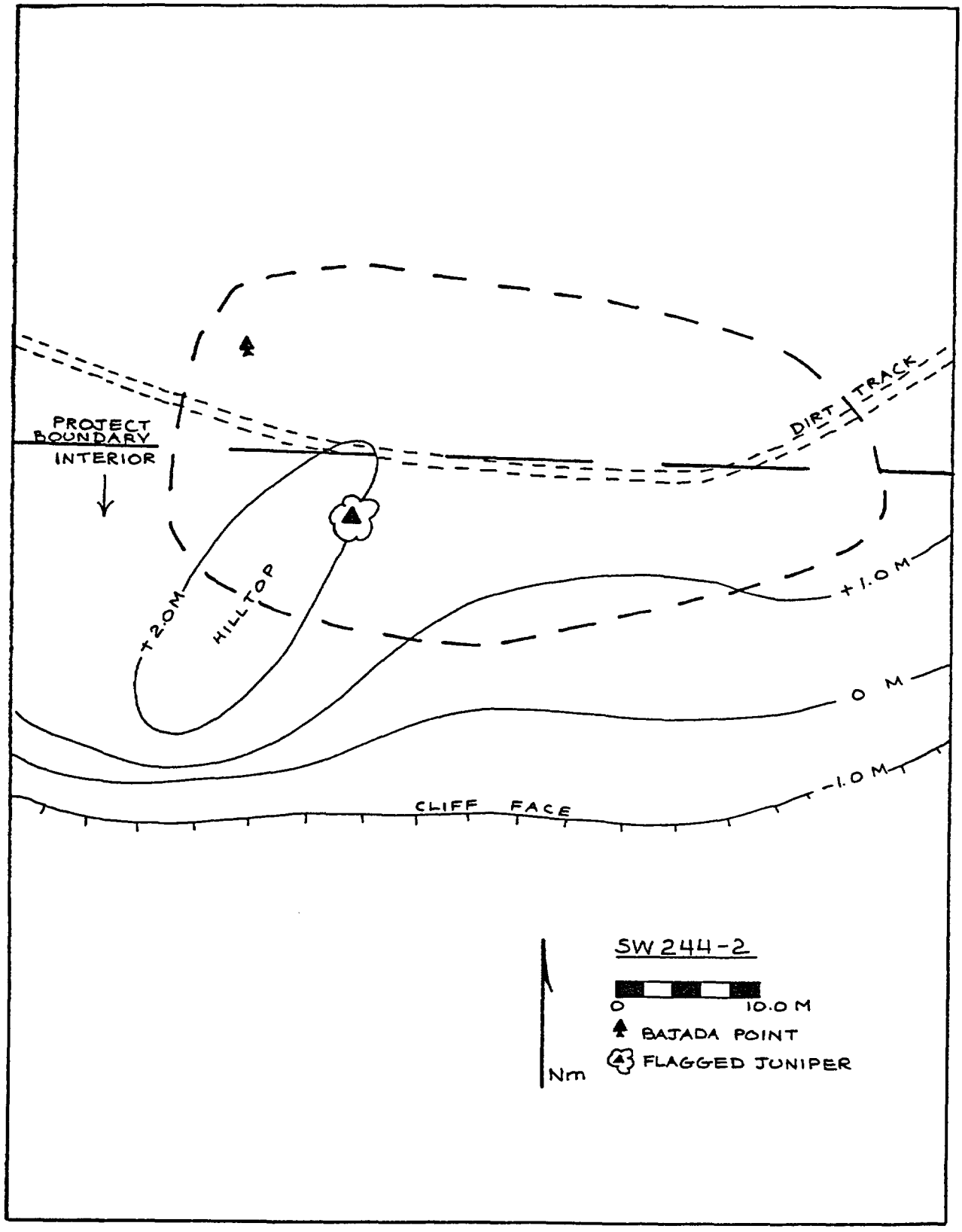

Figure 10: Site plan.

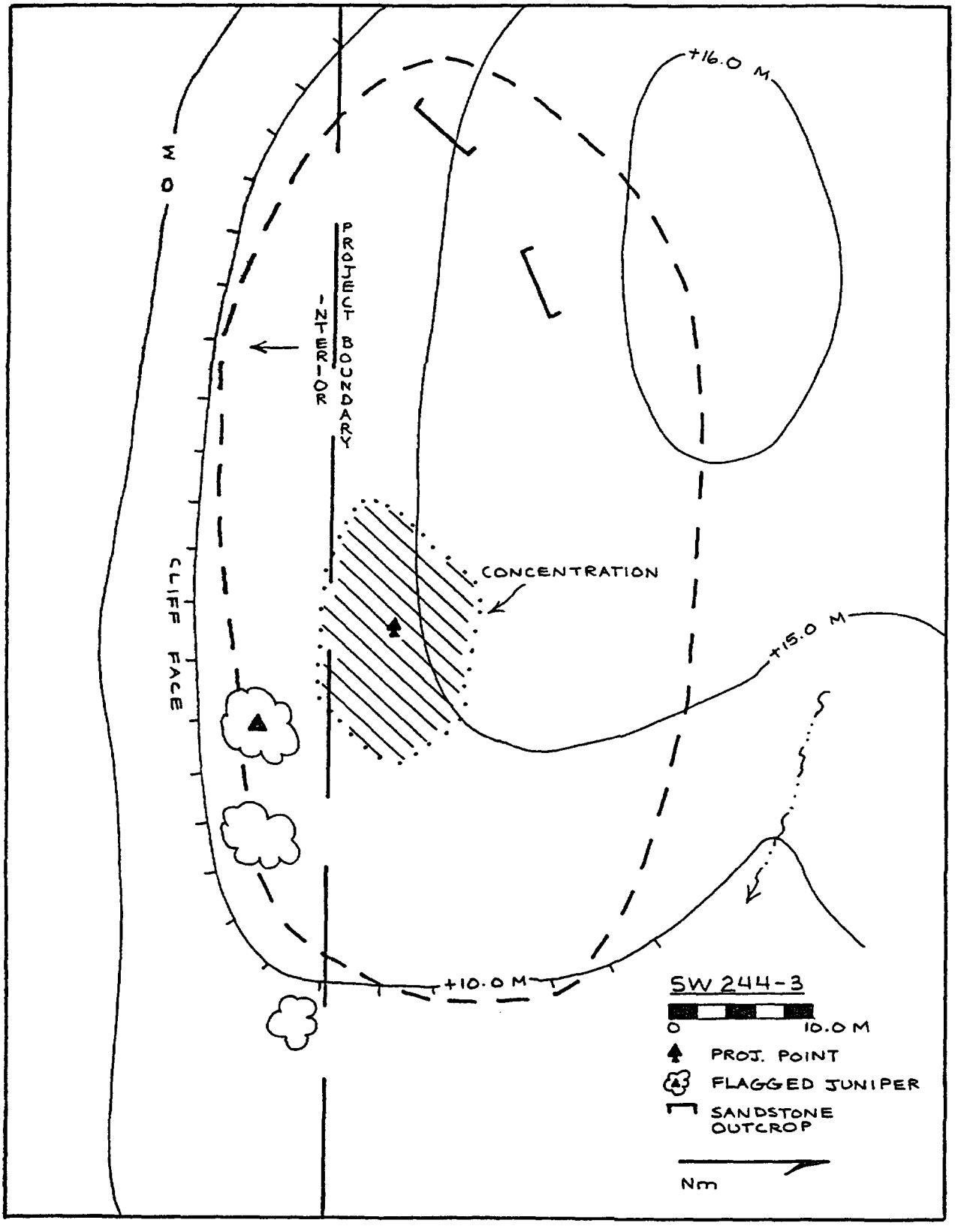

Figure 11: Site plan.

Site Character: The low density sherd and lithic scatter measures 70 by 100 m and contains a single artifact concentration at the east end of the site. The concentration covers an area 18 m in diameter (Figure 12). Thirteen artifacts were observed and consist of secondary flakes and pieces of angular debris of predominately light colored cherts, followed by Grants obsidian. Two bifacial thinning flakes, a chert Pueblo-style projectile point, and two grayware jar sherds (possibly neck-banded) also were recorded. South of the artifact concentration a 20-plus grayware sherd potdrop was noted.

Discussion: The site probably served as a food procurement locus attributed to the early-middle Puebloan period (A.D. 800-1000). Use probably was short-term but with repeated visits.

244-5

Location: T12N, R10W, Section 9

UTM Coordinates: N 3907380 E 236340

Situation: The site occurs on the east-facing basin slope, approximately 130 m east of Station E, a project boundary marker. Grasses and isolated juniper occur in the area.

Site Character: The 50 by 30 m lithic scatter consists of 17 scattered secondary flakes of light and dark gray cherts, and Jemez, Polvadera Peak and Grants obsidian (Figure 13). A small artifact concentration, representing a chipping station, occurs at the north end of the site and consists of about 30 pink quartzite secondary flakes. A petrified wood core also was observed.

Discussion: Based on the raw material assemblage, the site is suggested as a late Archaic/Basketmaker II (800 B.C. - A.D. 400) expedient plant food procurement locus and the chipping station. Artifact distributions imply repeated use. Possibly, the chipping station represents a later Puebloan occupation.

244-6

Location: T12N, R10W, Section 10

UTM Coordinates: N 3908100 E 237360

Situation: The site is located on a small sheltered bench at the southeast end of a ridge. The west and north sides are protected by 1 m high sandstone bedrock ledges. Grasses, four-wing saltbush, snakeweed and juniper compose the site vegetation.

Site Character: The sherd and lithic scatter, measuring 15 by 20 m, occupies the west end of a bench. Most of the lithic artifacts are concentrated in the center of the site (Figure 14). The 12 Grants obsidian lithics noted within the concentration include pieces of angular debris, secondary and tertiary flakes, and one biface. The other 12 lithic artifacts observed are light colored chert secondary flakes and pieces of angular debris. Two mano fragments, one each of sandstone and vesicular basalt, were recorded. Both, probably, are one-hand types. Ceramics present include nine indeterminate whiteware jar sherds (one with a lug), an indeterminate grayware jar sherd, and three Red Mesa, three Chaco, and one Puerco black-on-white bowl sherds.

Discussion: Although possibly multicomponent, the majority of the identifiable ceramics date to the Pueblo II period (A.D. 900-1100). Identified on-site activities include wild plant food procurement and processing, temporary storage, and tool manufacture and maintenance. A single, short-term use episode is suggested.

244-7

Location: T12N, R10W, Section 10

UTM Coordinates: N 3908050 E 237490

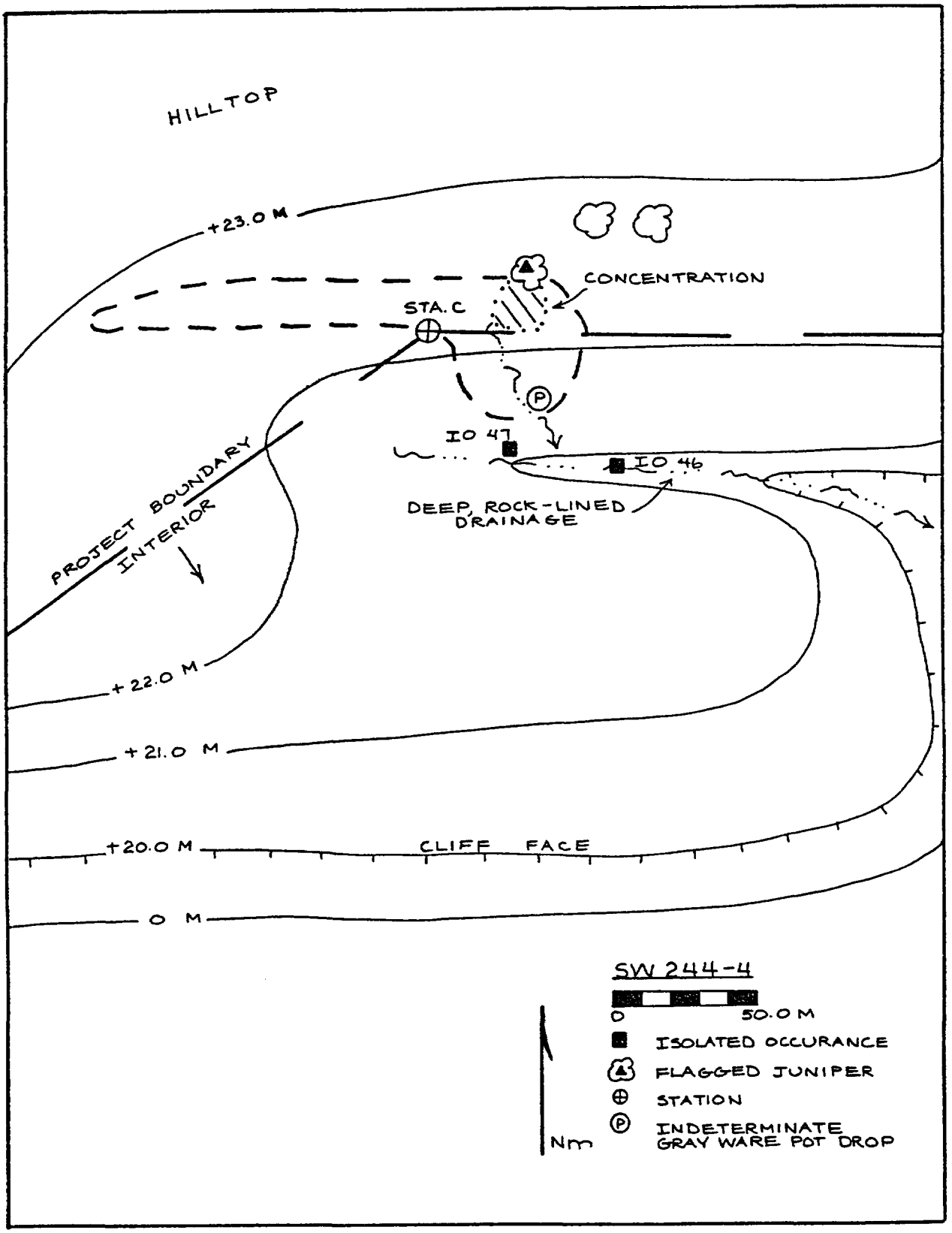

Figure 12: Site plan.

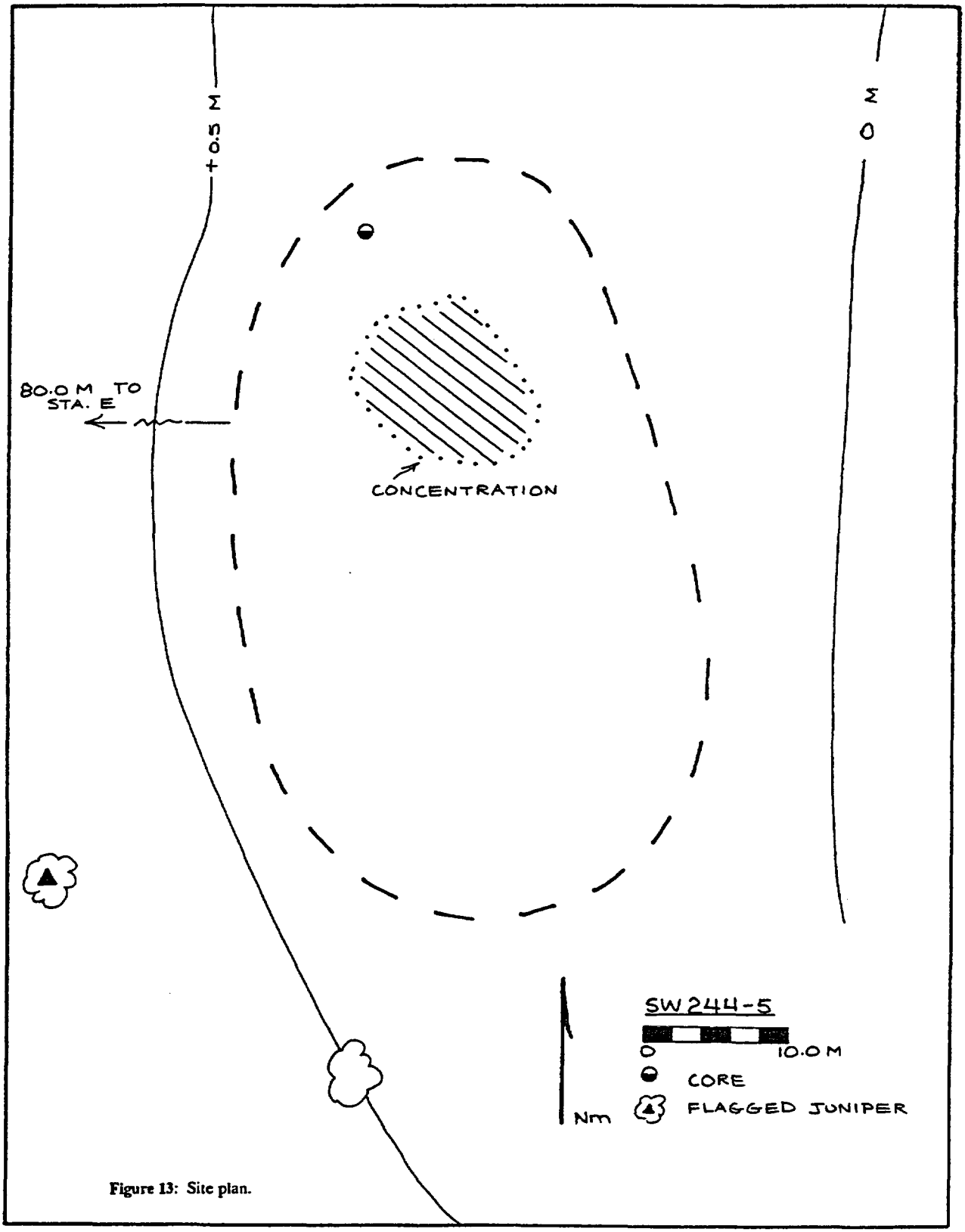

Figure 13: Site plan.

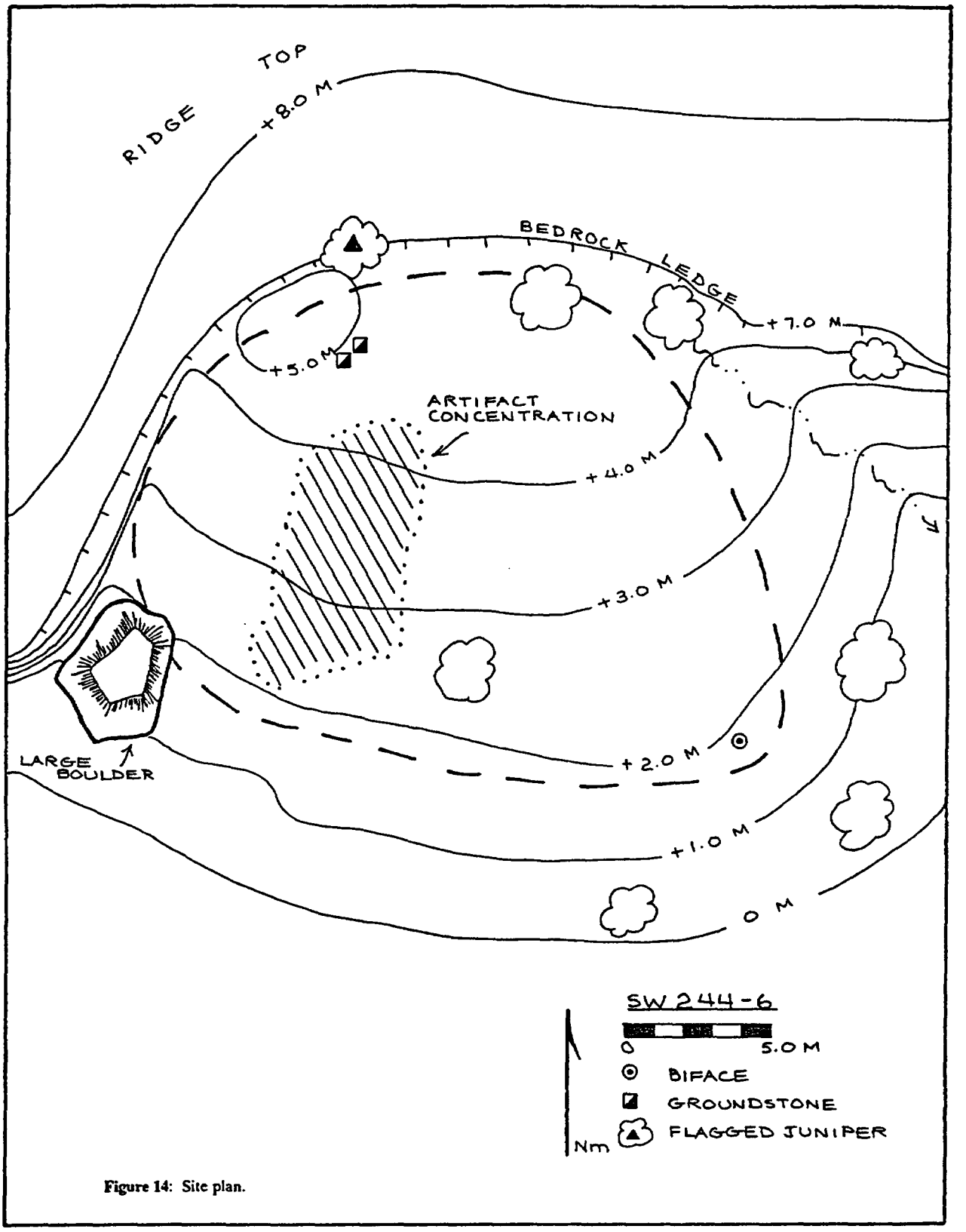

Figure 14: Site plan.

Situation: The site is in a saddle between two ridges, with artifacts visible in shallow dune blowouts. Grasses predominate in the area with isolated juniper growing on the ridge to the south.

Site Character: The dispersed lithic scatter measures 25 by 15 m (Figure 15). Most of the 14 artifacts observed are light colored chert secondary flakes. Noted obsidian artifacts include three Polvadera Peak secondary flakes, one piece of angular debris, one tertiary flake, and a Grants obsidian exhausted core.

Discussion: The expedient tool manufacturing and wild plant procurement site probably dates to the late Archaic/Basketmaker (1800 B.C. - A.D. 400) period. A single use episode of short-term duration is represented.

244-8

Location: T12N, R10W, Section 10

UTM Coordinates: N 3907940 E 237510
N 3907780 E 237560
N 3907840 E 237400

Situation: The site is large and extends over the southwest end of a ridge enclosing the east side of the basin. The primary drainage in the basin runs northwest/southeast along the base of the ridge. Vegetation includes grasses, four-wing saltbush, snakeweed and isolated junipers.

Site Character: The large sherd and lithic scatter measures 200 by 270 m and contains artifacts numbering in the thousands (Figure 16). Three identifiable loci were noted. Locus 1 (120 x 75 m) contains most of the stone tools; five whole Bajada-style projectile points of Grants obsidian, basalt or Jemez obsidian, a possible Jemez obsidian Pueblo-style point, and two chert bifaces. Most of the chipped stone debitage at the locus is Grants obsidian and consists of secondary and tertiary flakes. Although Locus 3 has similar debitage assemblage, no tools were observed. It measures 20 m in diameter. Locus 2 is a small concentration of sherds and lithics, measuring 30 m in diameter and is located at the base of the ridge on the west. Artifacts consist mostly of Grants obsidian secondary flakes, two indeterminate grayware sherds, and a red chert drill base. A collapsed cairn of three rocks and associated purple glass shards were noted in Locus 1. Four pieces of miscellaneous groundstone fragments were scattered across the site.

Discussion: The site is multicomponent and hosted repeated and serial use. The earliest component is early Archaic (4800-3200 B.C.), clearly represented at Locus 1 where a late Puebloan (A.D. 700-1300) component also occurs, indicated by ceramics and a projectile point. Historic use of the mesa circa late 1800s/early 1900s was related to herding activities. Suggested prehistoric site use includes plant collection and preparation, tool maintenance, hunting related activities, and temporary storage.

244-9

Location: T12N, R10W, Section 8

UTM Coordinates: N 3908020 E 237020

Situation: The site is situated at the base of a sandstone cliff where a deep drainage emerges from the cliff face. The site is on the east side of the drainage. Although the ground is fairly bare, grasses, four-wing saltbush and wolfberry occur in the area. Five foot high wolfberry grows on the west side of the drainage.

Site Character: The site consists of a low, L-shaped dirt and rock mound with artifacts spread over a 20 by 150 m area (Figure 17). The long arm of the mound measures 7 by 1 m, the short extension to the west, 1 by 2 m. Small sandstone spalls are intermixed with dirt, forming the 30 cm high mound. Artifacts occur from the edge of the arroyo to west of the mound and include a small fragment of ground gypsum, a possible secondary flake of gypsum or calcite, two additional secondary flakes (Polvadera Peak obsidian and white chalcedony), two grayware bowl sherds (one with a lug), a clapboard corrugated jar sherd, and a Chaco corrugated jar sherd. On the west side of the arroyo, opposite the site, is an old Vaseline jar dating 1908 to the 1930s from

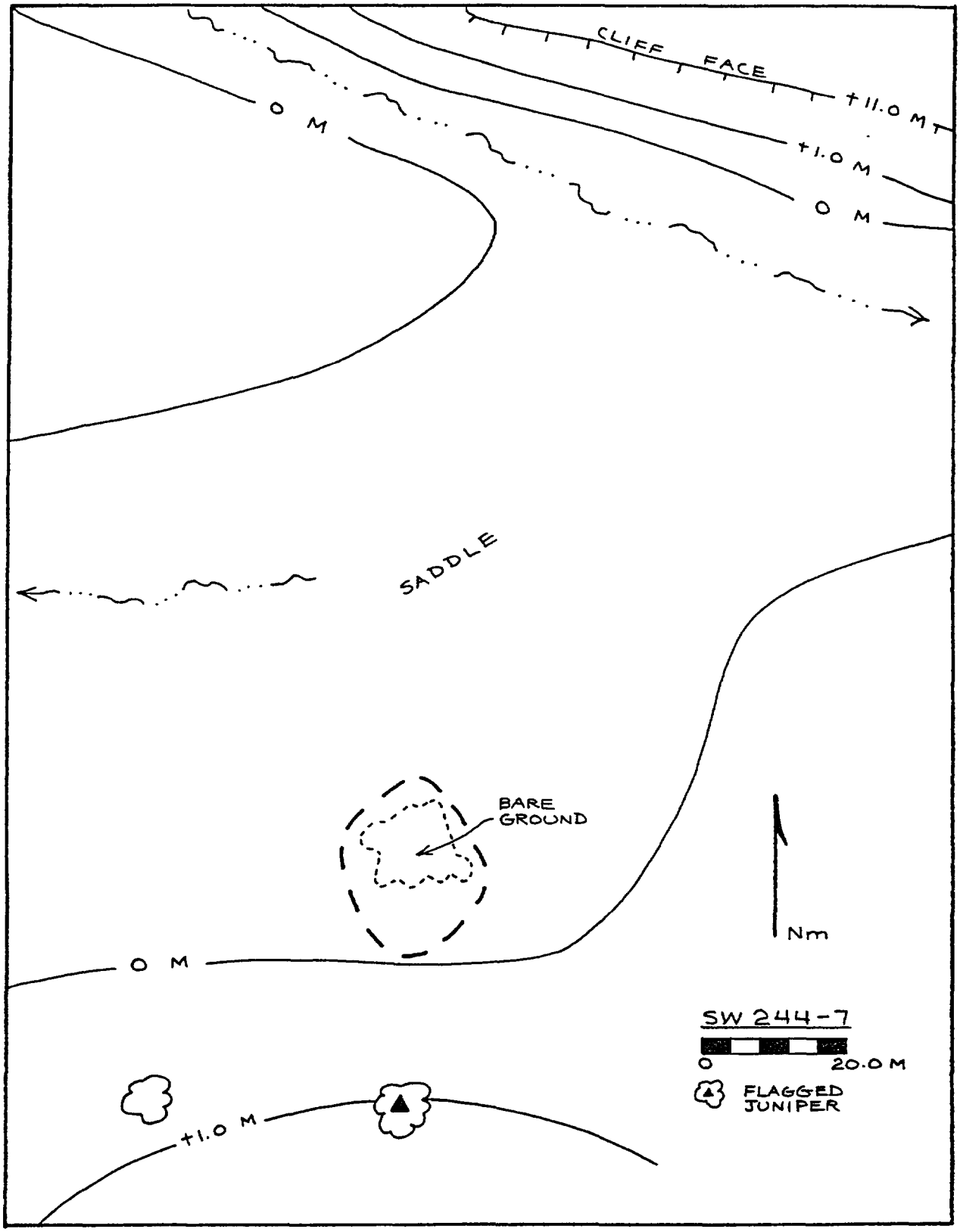

Figure 15: Site plan.

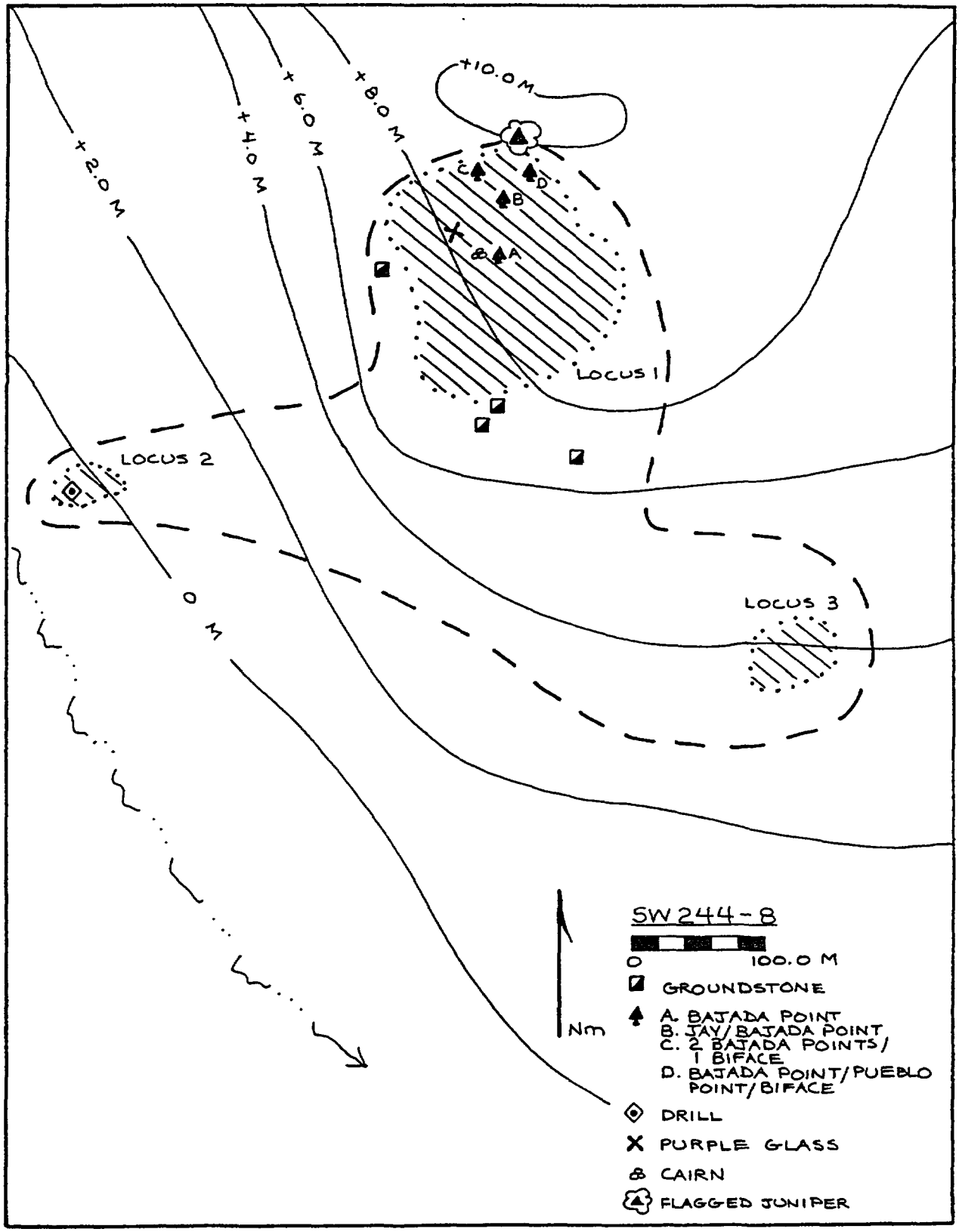

Figure 16: Site plan.

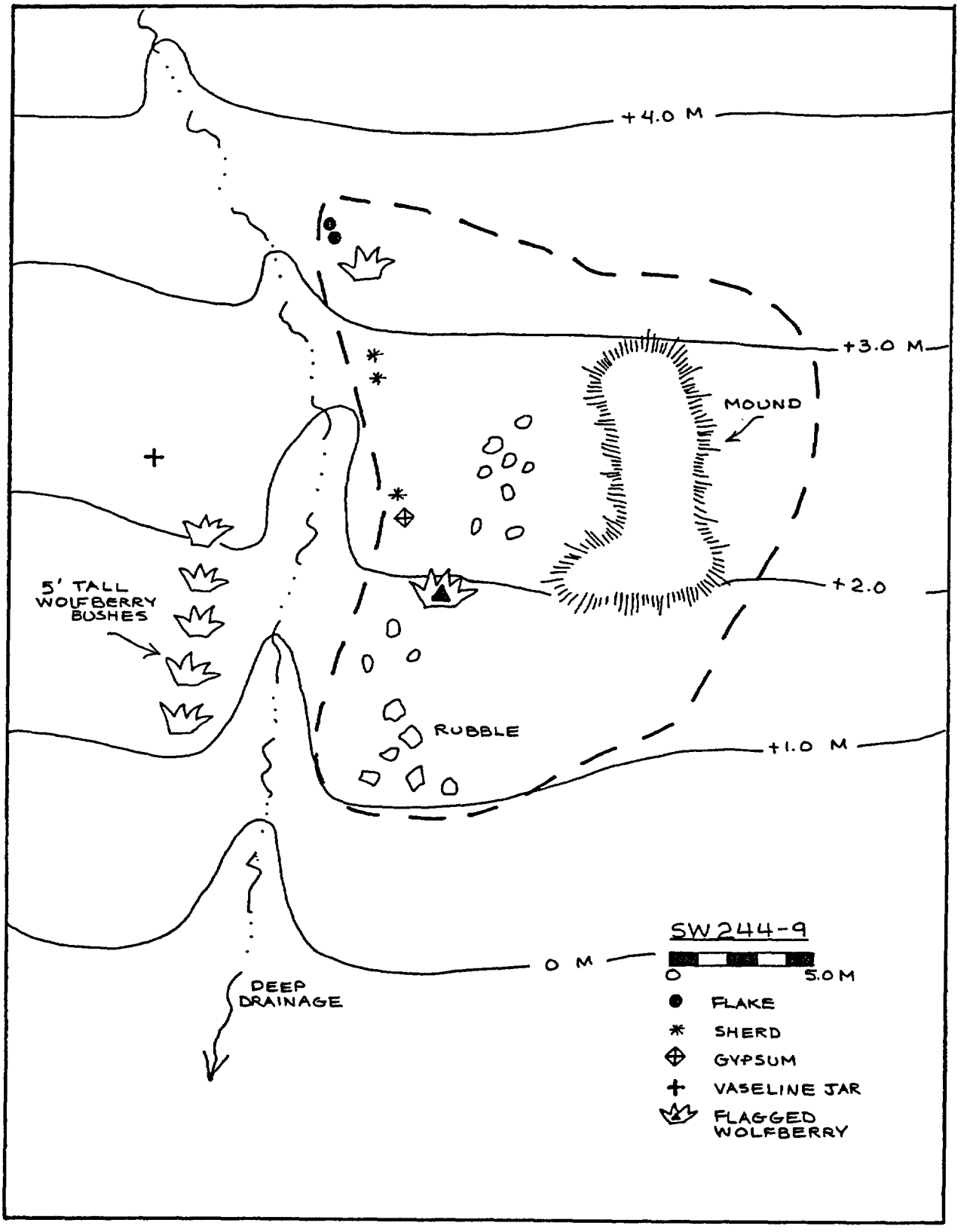

Figure 17: Site plan.

Chesebrough, New York (Fike 1987).

Discussion: The site appears to be Puebloan (A.D. 900-1300) and probably is associated with agricultural pursuits. The feature appears to be an above-ground storage unit or it may be the foundations of a windbreak. The site probably was inhabited intermittently or seasonally. The historic component, represented by the vaseline jar, is not related to the main site use.

244-10

Location: T12N, R10W, Section 9

UTM Coordinates: N 3907840 E 236570

Situation: The site is on a southeast-facing slope among small sandstone ledges. Immediately east of the site is a grassy bowl-shaped drainage head. The site is within the juniper woodland zone, bordering the basin.

Site Character: The lithic scatter measures 57 by 40 m and consists of a body of dispersed artifacts and an artifact concentration (Figure 18). The concentration contains primarily tools and is located within a drainage head. Artifacts noted within the concentration include unifacial and bifacial scrapers of light colored cherts and angular debris of light gray chert. A brown quartzite biface possibly has a flute originating from its base. Other artifacts are spread farther downslope to the west and include tested pebbles of tan chert, secondary flakes of Grants obsidian and angular debris of gray chert, and a Pueblo-style point fragment of Grants obsidian. On the west edge of the site were found two Puerco (?) Black-on-white jar sherds and an indeterminate whiteware sherd. A modern eroded hearth marks the south edge of the site, eroded and located within a small drainage. Ash staining and charcoal bits occur in an area 2 by .5 m. Three reddened sandstone rocks were found 2.5 m south of the ash stain.

Discussion: The multicomponent limited activity site contains three separate occupations: Archaic, Puebloan and Historic. The Archaic component is represented by the artifact concentration and probably dates to the middle to late Archaic (3200 B.C. - A.D. 1). On-site activities possibly included plant and animal food preparation. The Pueblo II (A.D. 900-1100) component probably was associated with raw material testing, plant food procurement/preparation and hunting on a short-term basis. A modern Historic component is evidenced by the hearth, still with identifiable bits of charcoal.

244-11

Location: T12N, R10W, Section 9

UTM Coordinates: N 3907920 E 236620

Situation: SW 244-11 is on a dune slope projecting from the base of sandstone cliffs located 60 m north. Grasses, snakeweed, sage and juniper are on the site.

Site Character: The lithic scatter is 44 by 30 m and consists of at least 50 light colored chert secondary and tertiary flakes and pieces of angular debris (Figure 19). Two secondary and one primary Grants obsidian flakes also were observed. One of the secondary flake was retouched unimarginally.

Discussion: The site probably is Basketmaker/Pueblo (A.D. 400-1300) based on the lithic profile. Based on lithic reduction stages represented, expedient tool manufacturing is suggested as well as plant food procurement. Occupation of the site apparently occurred once, either by a large group at one time or by a smaller group for an extended period of time. The absence of a hearth would tend to suggest the former.

244-12

Location: T12N, R10W, Section 9

UTM Coordinates: N 3907960 E 236650

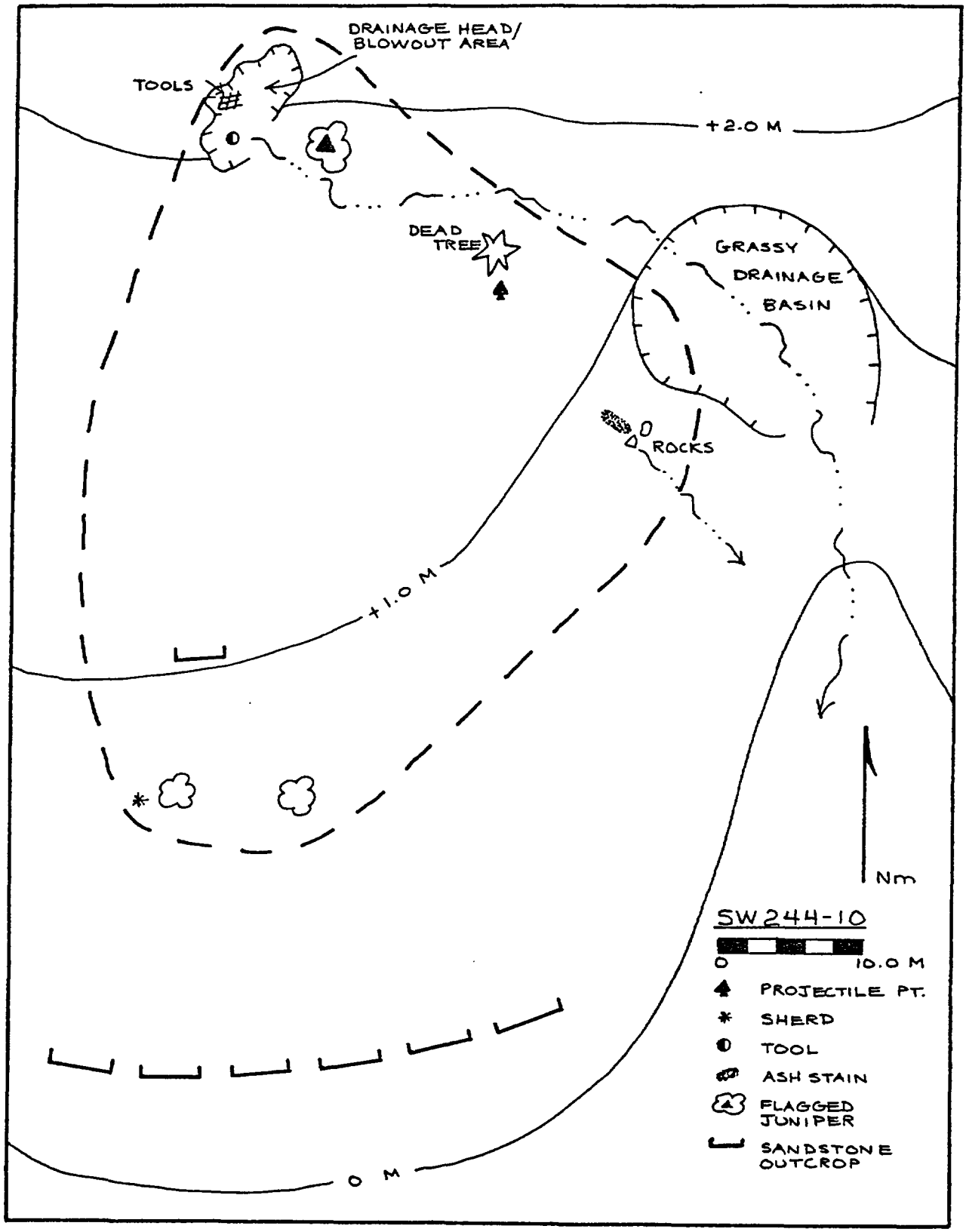

Figure 18: Site plan.

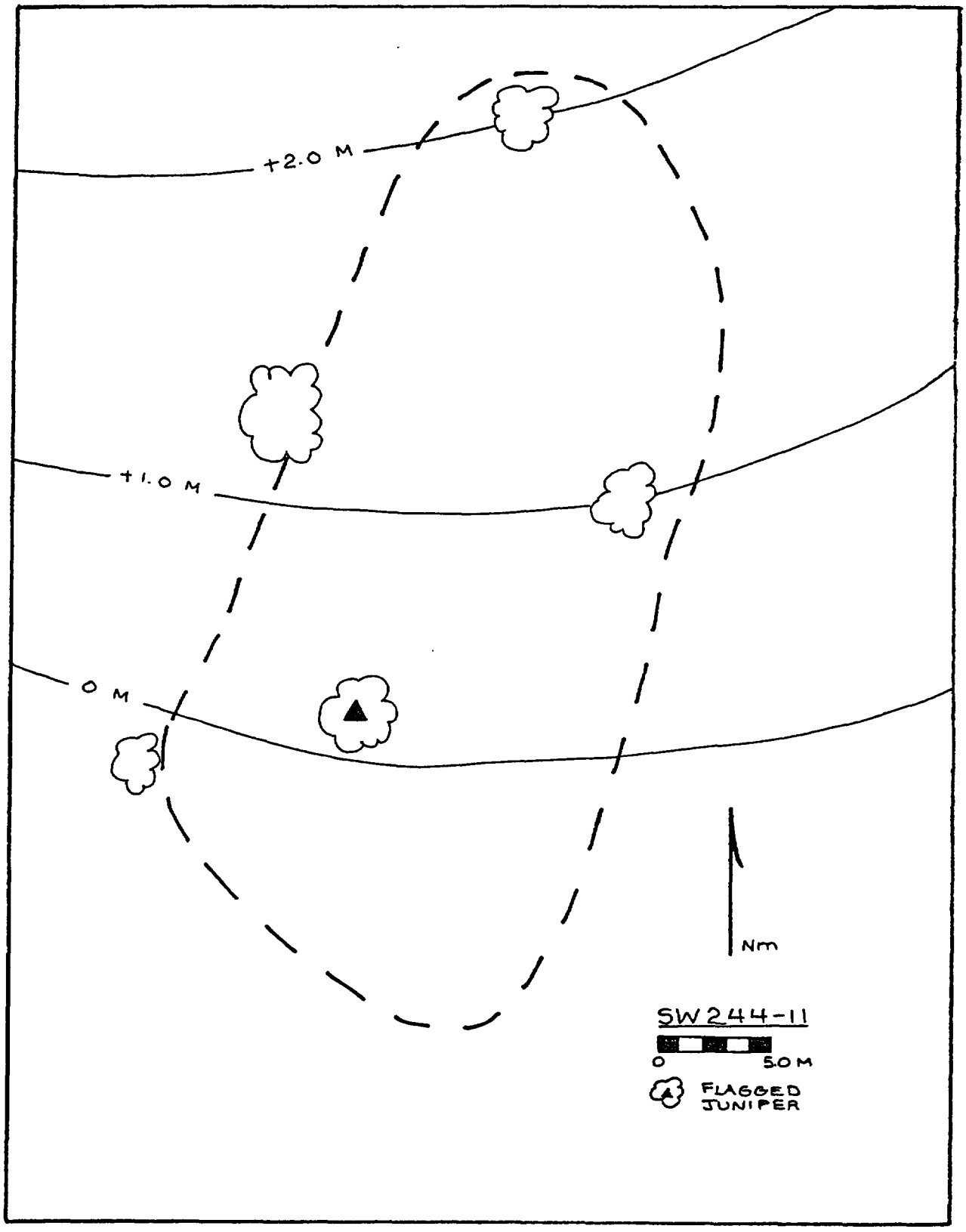

Figure 19: Site plan.

Situation: The site is located at the end of a small ridge in a badlands area, extending south off the sandstone cliffs. Sparse grasses and isolated juniper occur on-site. Packrat nests are build within the features.

Site Character: The site consists of two rock enclosures, two rock walls, and an artifact scatter, creating a site size of 12 by 13 m (Figure 20). Feature 1 is located in a small drainage west of the ridge and consists of four sandstone boulders placed among and on top of three large natural boulders spanning the drainage. The constructed feature measures 1.5 by .5 by .5 m. Feature 2 is at the southwest edge of the ridge, consists of a rock enclosure, and also incorporates natural bounders in its construction. The feature measures 2 by 3 m and opens to the south. Wall heights are generally 1.5 m, but those on the west side are collapsed. Just north of the feature is a large tan chert primary core and biface; southeast are two grayware jar sherds and one probable Historic Pueblo bowl sherd. Inside feature 2 is a black-on-white ladle handle. Feature 3 also is an enclosure measuring 2.5 by 4 m; walls are 80 cm high. No opening is apparent. Within the feature are three ax-cut juniper branches (long enough to be roof beams or supports), an upright sandstone slab in the northwest corner suggestive of a bin, and a clam shell (modern and probably redeposited by packrats). On the south side of the large boulder forming the south side of feature 3 is a ground gypsum fragment with an unfinished drill hole. Six meters beyond the boulder and gypsum is a small boulder with a piece of possible fire-cracked rock and a one-hand mano ground on two sides. Feature 4 is a short rock wall 1 m long, extending from the southeast of the natural boulder in feature 3; the wall is collapsed. Other sherds were recorded among the boulders.

Discussion: The site is primarily an Historic Pueblo (ca. 1860-1930) herding camp occupied during the colder months of the year for much of the season, and possibly occupied repeatedly. Feature 1 is a water diversion wall or well, built to keep run-off from eroding the foundations of Feature 2, or to save run-off water for later use. Feature 2 is either a habitation and/or an animal pen, while the bin in Feature 3 clearly indicates its use as a habitation. The function of Feature 4 is unknown, possibly a windbreak. Prehistoric use of the area also is suggested by the dispersed sherd and lithic scatter and groundstone. These artifacts suggest repeated use, probably beginning in the Archaic and continuing through the Pueblo. Those uses were sporadic and limited in nature.

244-13

Location: T12N, R10W, Section 9

UTM Coordinates: N 3907700 E 236280

Situation: SW 244-13 is located on a west facing hillslope adjacent a small drainage. Grasses and juniper, many of which are ax-cut, abound.

Site Character: The branch-lined enclosure is 22 m in diameter and largely weathered (Figure 21). Only the west edge is obviously visible. The walls of the feature were made of interwoven ax-cut juniper branches piled against each other and occasionally supported by either living or dead juniper trees and stumps. One piece of white chert angular debris was noted inside the enclosure.

Discussion: The feature is characteristic of corrals and probably resulted from Historic Pueblo herding in the area, circa 1860s through the early 1900s. Duration of use of the feature is indeterminate.

244-14

Location: T12N, R10W, Section 9

UTM Coordinates: N 3907660 E 236500

Situation: The site is on top of a small ridge above a large drainage to the south. Vegetation includes grasses and junipers, many of which are cut; a single pinon tree grows in the arroyo 50 m west. A seldom used dirt track goes through the south edge of the site.

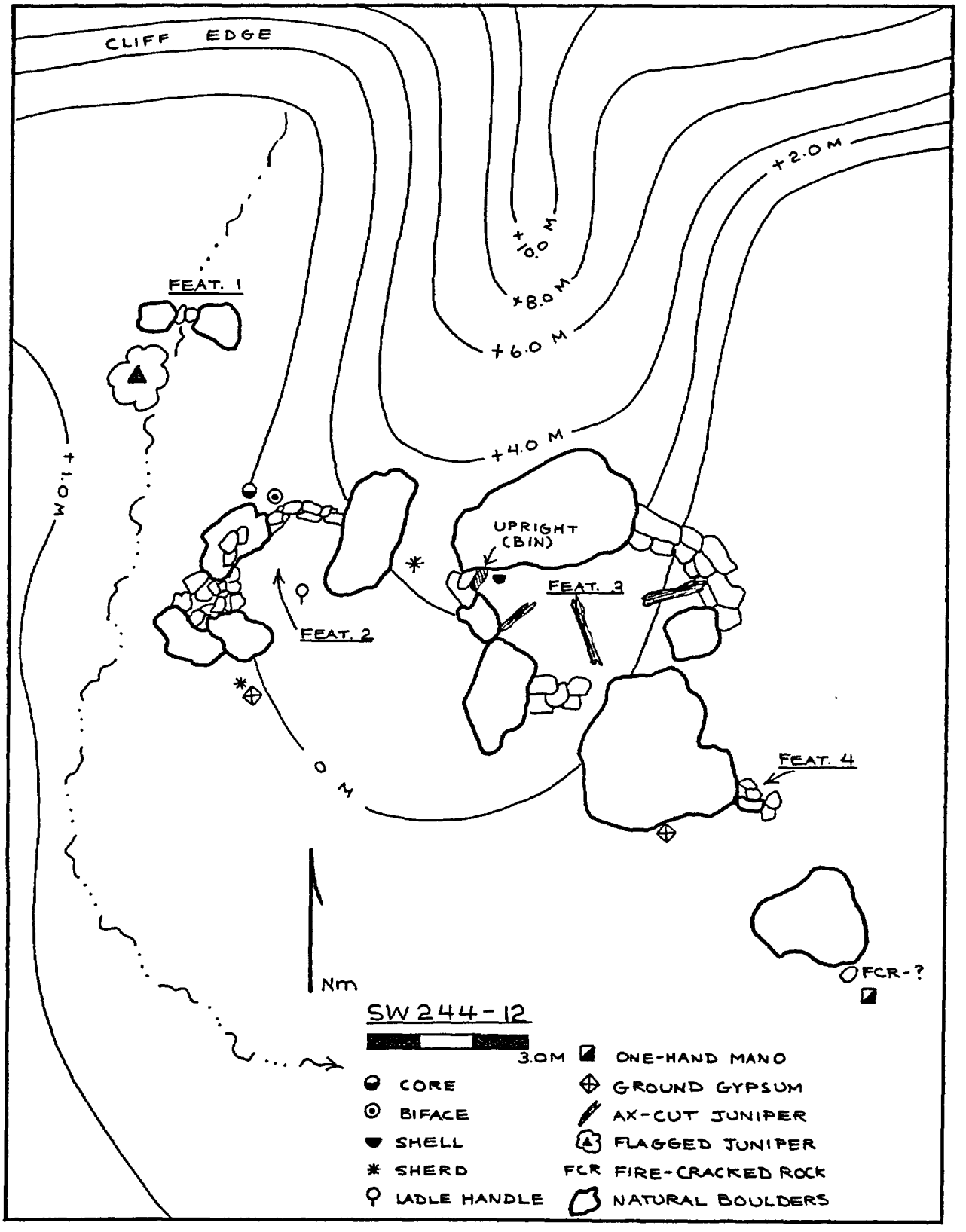

Figure 20: Site plan.

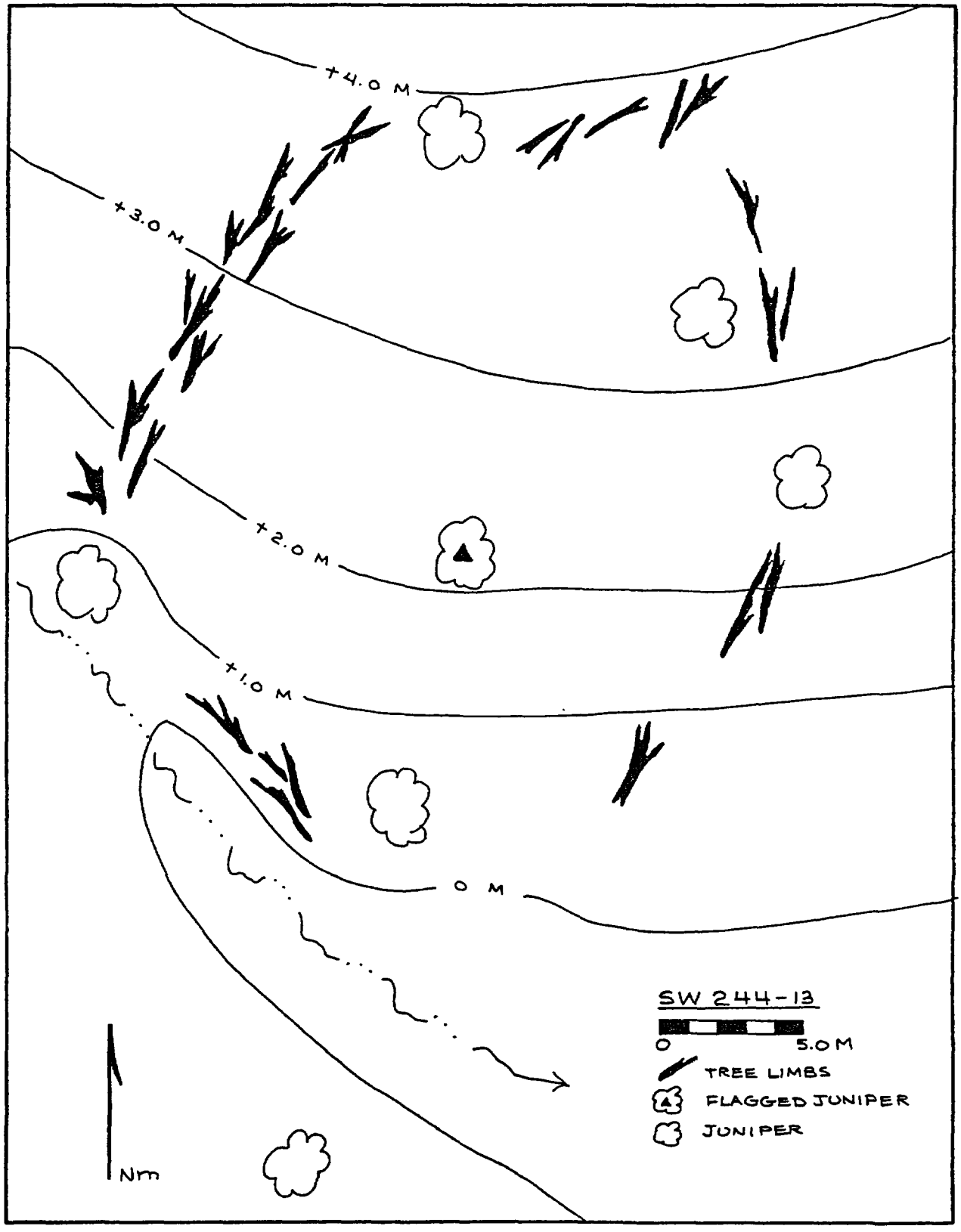

Figure 21: Site plan.

Site Character: The lithic scatter extends 20 by 25 m, with a 3 m diameter concentration occurring in the center of the site (Figure 22). Observed debitage consists of at least 15 light orange quartzite secondary, biface thinning and primary flakes, and a secondary core. Also on-site are a white chalcedony secondary flake, a piece of Grants obsidian angular debris, and a light gray quartzite projectile point. The projectile point is a late Archaic/Basketmaker style. An indeterminate black-on-white bowl sherd also was recorded.

Discussion: Site 244-14 is multicomponent. The primary occupation is late Archaic/Basketmaker (1800 B.C. - A.D. 400). The lithic assemblage suggests a single use chipping episode. A Pueblo I component is suggested by the sherds, representing short duration use related to plant food procurement and temporary storage.

244-15

Location: T12N, R10W, Section 9

UTM Coordinates: N 3907780 E 236620

Situation: The site faces south and occurs on a hillslope above the basin. Bedrock ledges extend east and west directly behind the site. The juniper woodland zone bordering this edge of the basin begins here.

Site Character: SW 244-15 is composed of a structure and associated artifact scatter (Figure 23). The structure measures 16 by 18 m and consists of three semicircular rooms extending south from a massive upright sandstone slab. Whether or not the upright stature of the slab naturally occurred in this position is questionable. The slab is unmodified. It occurs along the same line of bedrock, but no indication exists as to why it is upright and none of the other are. Also, the tree behind it does not touch it and does not appear to have pushed it up.

Rooms were identified by displaced rock walls of sandstone blocks, though they probably were never more than one course high. Room 1 is contiguous with the upright and measures 2 by 3 m. The series of collapsed rocks and small uprights west of room 1 measures 2 by 4 m and defines room 2. An ax-cut, 3 m-long juniper branch lies across the room, oriented northwest-southeast. Room 3 is south of room 2 and is defined by a line of rocks encompassing an area 3 m in diameter. Feature 2 is located 2.5 m south of room 3 and is a hearth defined by five upright sandstone slabs. The feature measures 50 cm in diameter. Artifacts recorded around the feature are: a small piece of miscellaneous groundstone with one ground facet; a white chert secondary decortication flake; and an old tobacco can with a lapped hinge. A number of lithics were found south of room 1, consisting of a Polvadera Peak secondary flake, a red quartzite secondary flake, and four light gray chert secondary flakes. Ceramics noted include two Gallup Black-on-white jar sherds, a Chaco corrugated jar sherd, and two graywares.

Discussion: The site is multicomponent. A Pueblo II component (A.D. 900-1100) is represented by the sherd and lithic scatter and possibly was associated with plant food procurement and processing. The intruding Historic component probably is associated with area herding, dating between the 1860s and the early 1900s, and functioned as a temporary, seasonal habitation.

244-16

Location: T12N, R10W, Section 9

UTM Coordinates: N 3907660 E 236540

Situation: The site occurs on the northwest slope of the basin at the base of a small ridge. SW 244-14 is located on the ridgetop. A deep drainage is 40 m south. Vegetation is dominated by grasses, and the juniper woodland begins here. Narrow-leaf yucca grows on the south side of the rock ring. A seldom used dirt track runs along the northeast edge of the site.

Site Character: SW 244-16 consists of a sherd and lithic scatter and rock ring and measures 67 by 8 m (Figure 24). The circular rock ring is 5 m in diameter and is constructed of unmodified sandstone rocks; uprights border the south edge. A small drainage begins south of the ring, and most of the artifacts occur within it. Approximately 10 lithics were recorded and include light colored chert secondary flakes, pieces of angular debris and a primary core, and a light gray quartzite projectile point. The point is similar

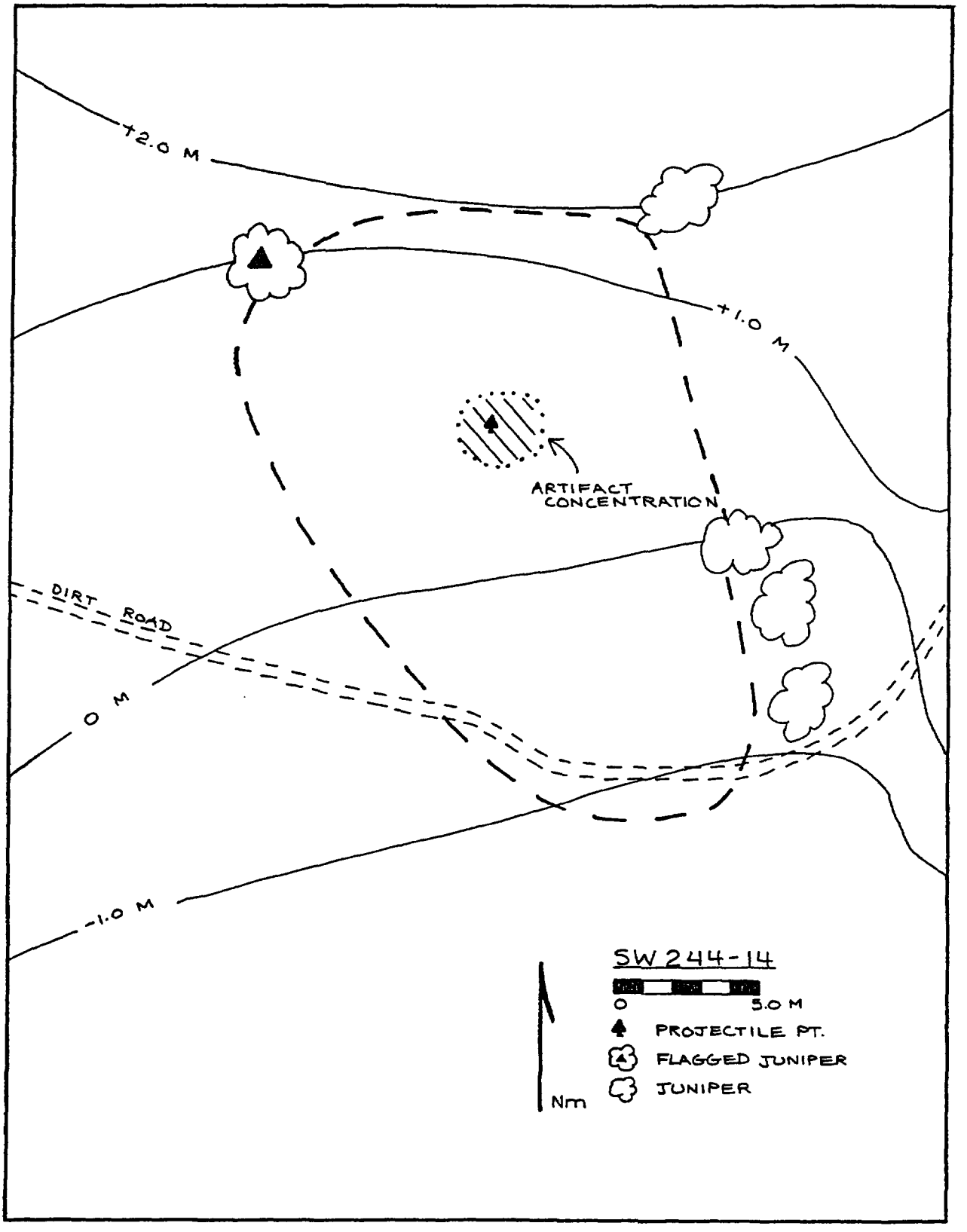

Figure 22: Site plan.

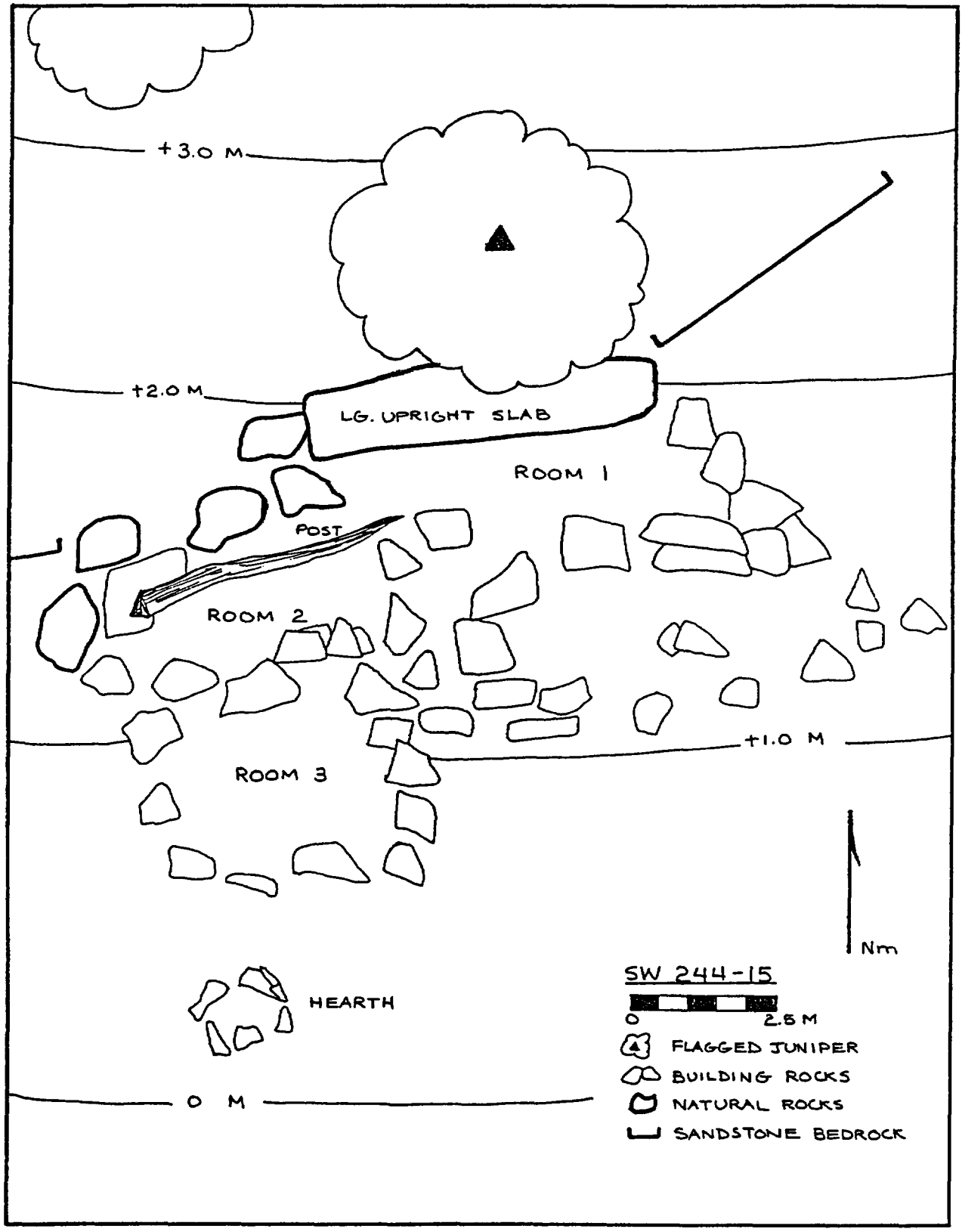

Figure 23: Site plan.

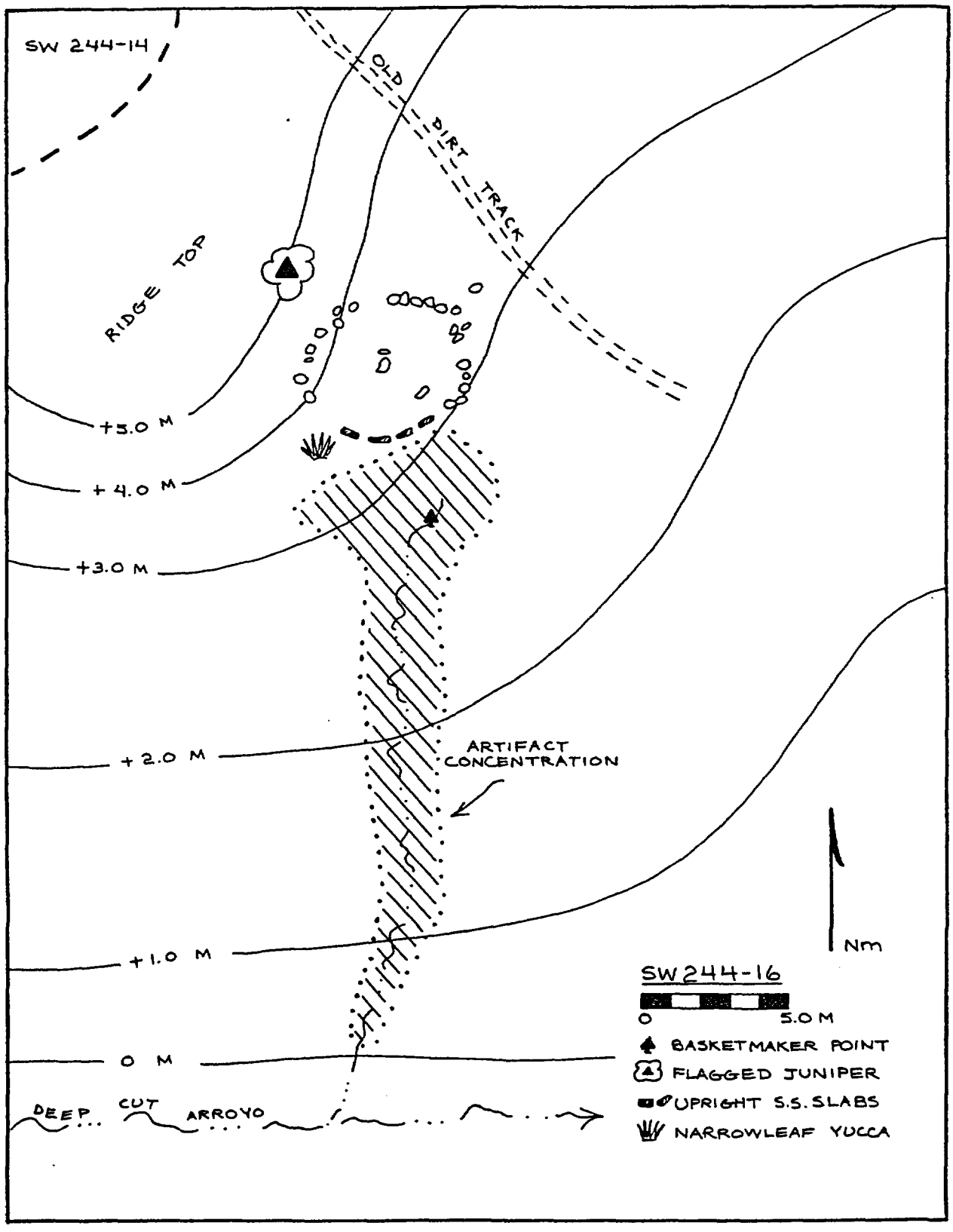

Figure 24: Site plan.

to the one found on SW 244-14 located on the ridgetop above the site. The 20 recorded ceramics include predominantly indeterminate grayware jar sherds, corrugated sherds and an Escavada Black-on-white bowl sherd.

Discussion: The site is multicomponent, with three occupations represented. The projectile point is a late Archaic/Basketmaker style, but probably is a curate item; its twin is on 244-14 located on the ridgetop directly north of the site. A Pueblo II (A.D. 900-1100) site component is represented by the artifacts extending south of the rock ring. The ceramics recorded suggest temporary food storage probably related to plant food procurement. No evidence exists as to why the artifacts occur in such a small area, unless they too were curated. The relationship, if any, of the artifacts to the feature is unclear. The rock ring may represent an Historic tent ring, which probably was associated with herding (1860s-e.1900s).

244-17

Location: T12N, R10W, Section 9

UTM Coordinates: N 3907720 E 236860

Situation: Located on the top of a wide dune within the basin, the site has an open exposure. One isolated juniper tree occurs on-site.

Site Character: The small lithic scatter measures 28.5 by 27 m and consists of at least 20 Grants obsidian secondary, tertiary and primary flakes (Figure 25). Also observed were secondary flakes of purple quartzite, brown chalcedony and white chert.

Discussion: Based on the raw material types. the site probably is Basketmaker or Pueblo (1800 B.C. - A.D. 1300) associated with expedient tool manufacturing. Occupation was short-term and probably of single use duration.

244-18

Location: T12N, R10W, Section 9

UTM Coordinates: N 3907680 E 236860

Situation: Located on a dune slope within the basin, the site occurs in a blowout at the head of a small, shallow drainage. Grasses and four-wing saltbush predominate in the area.

Site Character: A concentration of 17 lithics occurs at the north end of a blowout and consists of Grants obsidian secondary, bifacial thinning and tertiary flakes (Figure 26). Light-colored chert is similarly represented and includes secondary and tertiary flakes. One secondary core and one biface fragment, both of Grants obsidian, also were recorded. On the east edge of the site is a grayware jar sherd. A possible hearth exists on the west edge of the blowout, indicated by several sandstone spalls eroding 4 m downhill. No other sandstone exists in the immediate area.

Discussion: Based on the lithic profile, the site probably dates to the late Archaic/Basketmaker and Pueblo I period (A.D. 700-900). The possible hearth suggests the site served as a temporary campsite while populations were engaged in gathering wild plants and tool manufacturing/maintenance.

244-19

Location: T12N, R10W, Section 9

UTM Coordinates: N 3907380 E 236220

Situation: Located 30 m southeast of Station E, the site is on the west slope of the basin amid scattered juniper.

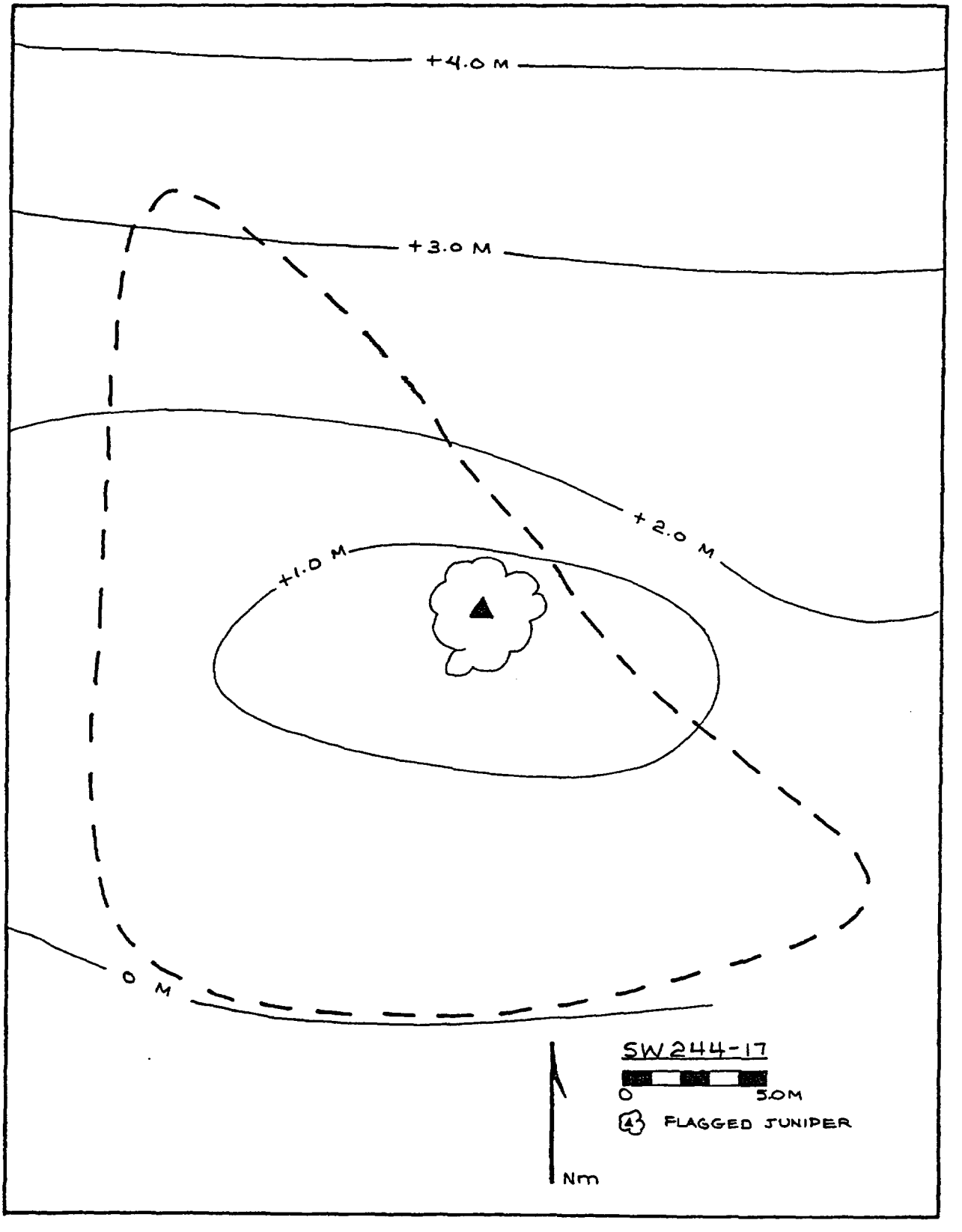

Figure 25: Site plan.

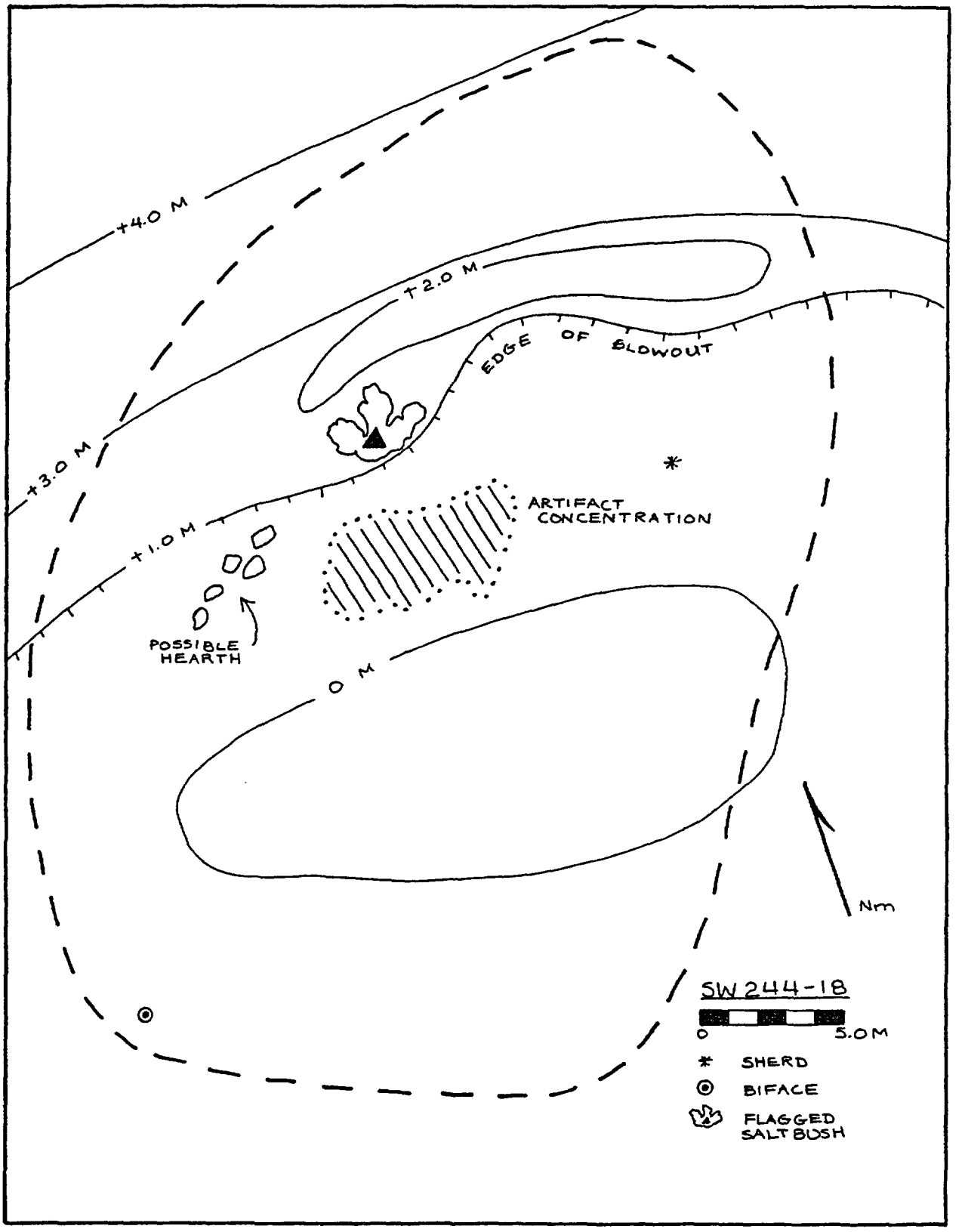

Figure 26: Site plan.

Site Character: The lithic scatter measures 32 m in diameter (Figure 27). Seven white chert secondary flakes form the major portion of the assemblage; the remaining six artifacts include both light colored chalcedony and chert secondary and tertiary flakes. Two secondary flakes and a piece of angular debris of Grants obsidian also were recorded. At the west end of the site is a one-hand mano made of a broken quartzite river cobble.

Discussion: The site probably is a Basketmaker/Pueblo (1800 B.C. - A.D. 700) plant food procurement and processing locus as evidenced by the lithic profile, the types of reduction debris, and groundstone present. Site size and artifact density suggests the site was occupied only once for a short time.

244-20

Location: T12N, R10W, Section 16

UTM Coordinates: N 3907140 E 236380
N 3907060 E 236415

Situation: The site begins on the slope of a ridge and extends south across a wide drainage head to a cliff edge. Grasses, four-wing saltbush and isolated juniper abound.

Site Character: The 167 by 100 m dispersed lithic scatter is composed of hundreds of artifacts (Figure 28). Almost 75 percent of the lithics observed consist of either light colored chert or chalcedony secondary and tertiary flakes and pieces of angular debris. Two surface concentrations occur: locus 1, (50 x 20 m) at the north end of the site, has at least 30 artifacts including two biface fragments and a primary core. Artifacts are predominantly light colored cherts. Locus 2 (20 x 60 m) occurs along the cliff edge and has similar amounts of light colored cherts and Grants obsidian secondary flakes.

Discussion: Based on the raw material types recorded, the site was occupied during the late Archaic/Basketmaker period (1800 B.C. - A.D. 400). Given the site size and densities of artifacts, short-term repeated use is suggested, probably for expedient plant food procurement. Tool manufacture and maintenance also occurred at Locus 1.

244-21

Location: T12N, R10W, Section 16

UTM Coordinates: N 3907000 E 236420

Situation: SW 244-21 is on a low ridge south of an east-trending drainage occurring at the base of sandstone cliffs. Along the south edge of the drainage at the base of the ridge is an outcrop of gypsum. Vegetation on-site consists of grasses and juniper, many of which are dead.

Site Character: At least a hundred lithics were observed in an area 30 m in diameter (Figure 29). Consisting primarily of light colored cherts, the secondary flakes noted are large (5 cm long). Several chert cores were recorded on the east edge of the site and a number of small Grants obsidian pebbles were found broken and tested for knapping suitability. The only diagnostic artifact found was a reworked gray chert Basketmaker projectile point; the base shows later modification.

Discussion: Site 244-21 is a Basketmaker-Pueblo period (A.D. 400-1300) expedient tool manufacturing, and possibly raw material procurement site. The Basketmaker III projectile point was reworked, suggesting a curate item. Whether or not the Grants obsidian pebbles occur naturally on the ridge is indeterminate; they were not observed elsewhere in the project area. Nonetheless, they were tested for knapping suitability. Also, the gypsum outcrop was the only one observed in the area and may be the source for the gypsum items recorded on 244-9 and -12. Site occupation and use probably was of a single, intensive use episode by a large group.

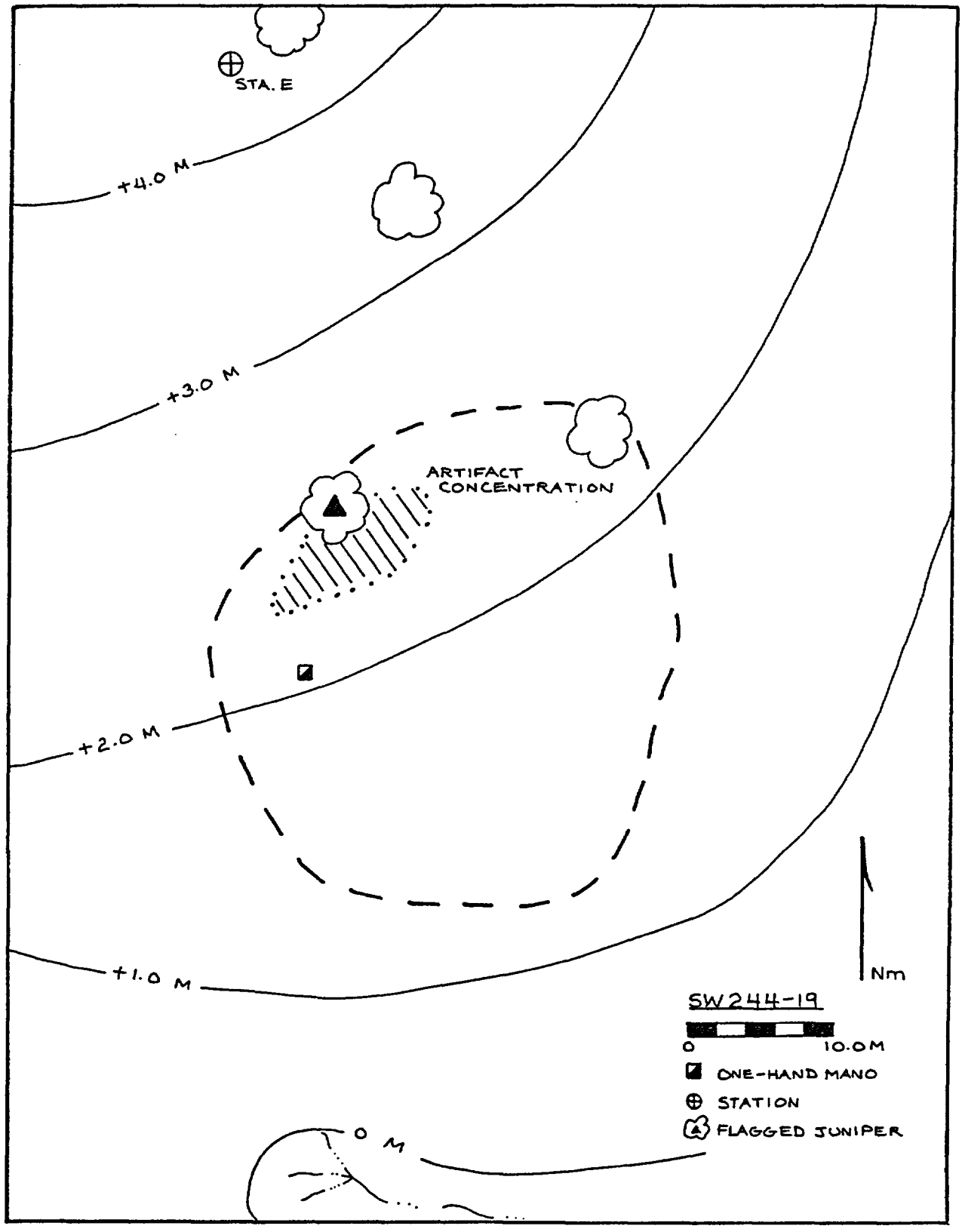

Figure 27: Site plan.

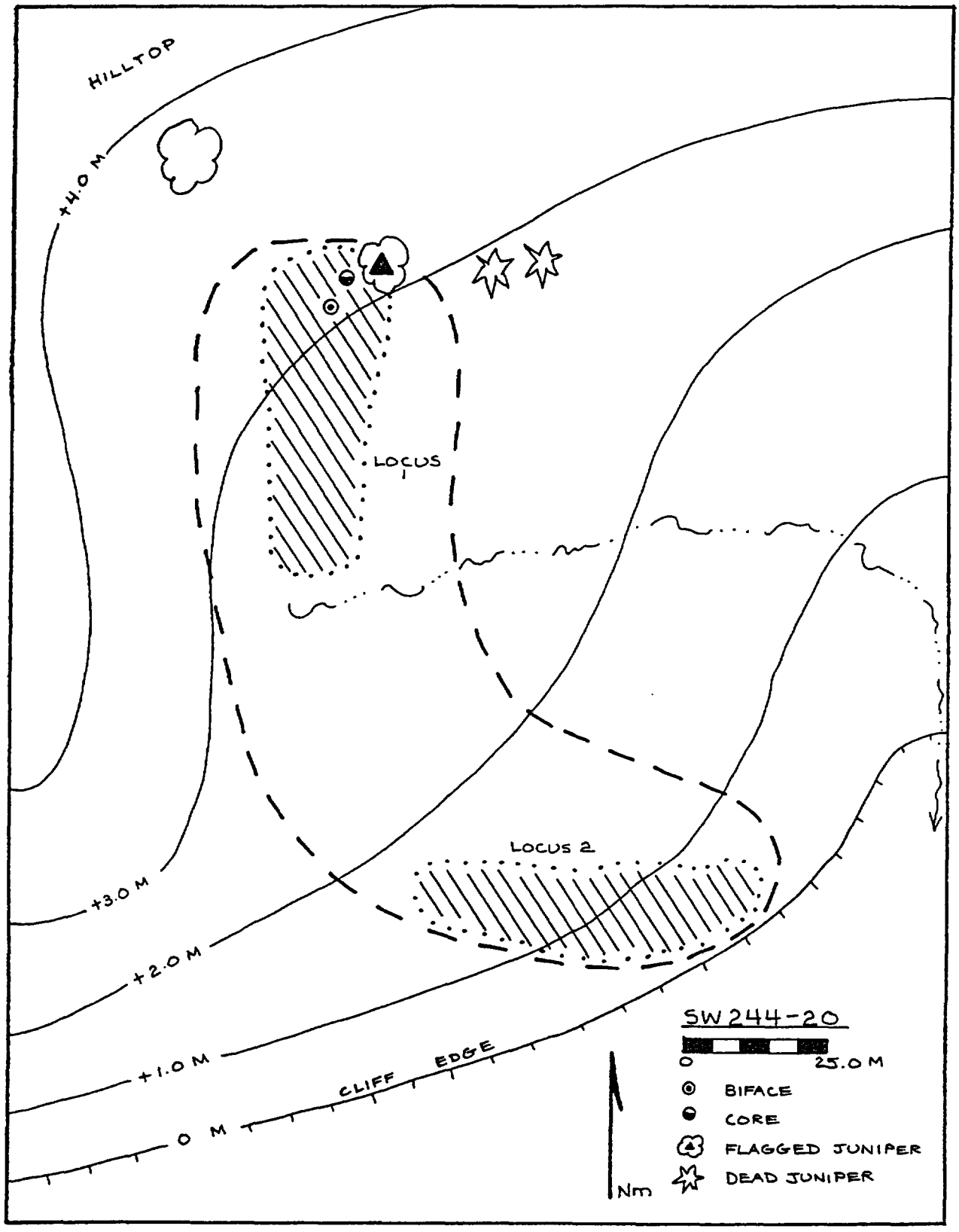

Figure 28: Site plan.

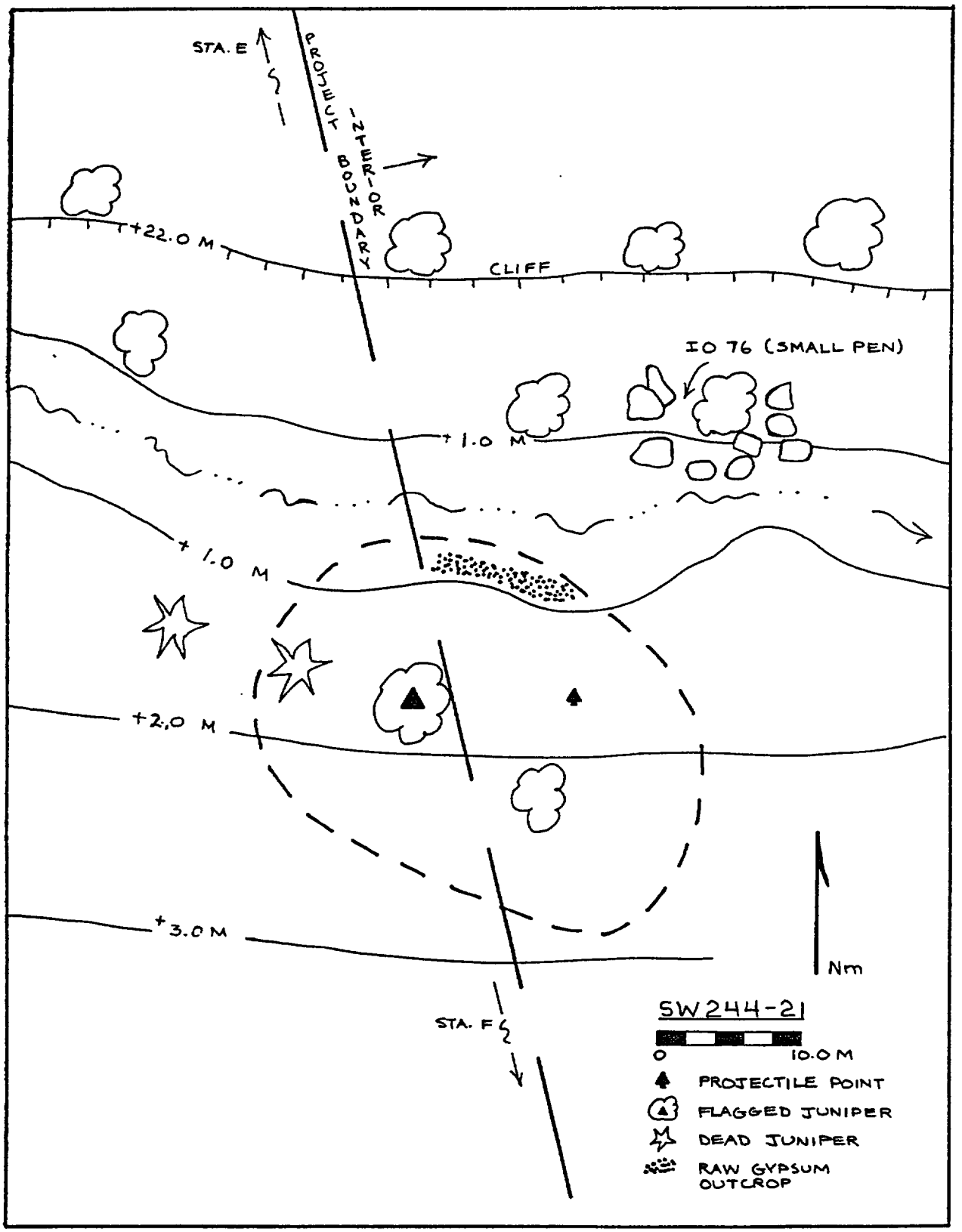

Figure 29: Site plan.

244-22

Location: T12N, R10W, Sections 15 and 16

UTM Coordinates: N 3906840 E 237080
N 3906460 E 237440
N 3906460 E 237060

Situation: Located at the southwest edge of the project area and extending east and north of Station G, the site encompasses virtually all of the ridgetop and continues north downslope. Besides grasses, four-wing saltbush, sage and snakeweed, isolated juniper occur.

Site Character: Measuring at least 400 by 450 m, the site extends an unknown distance south beyond the project boundaries, although probably ends at the edge of the ridge (Figure 30). The immense sherd and lithic scatter appears to consist of similar amounts of Grants obsidian and white or light colored cherts. Secondary flakes predominate with lesser amounts of tertiary and primary flakes represented. There is a noticeable decrease in the number of artifacts from west to east. Two lithic artifact concentrations were noted, consisting of Grants obsidian secondary and tertiary flakes. Both suggest secondary and tertiary stages of reduction and probably represent chipping stations. Between the two concentrations is a small corrugated sherd and lithic concentration.

Groundstone found on the site includes small miscellaneous fragments of ground and polished tabular sandstone, and one basin metate fragment 14 m east of Station G. A vesicular basalt manuport occurs southwest of the chipping station in the north quarter of the site. Other tools represented on-site include a Pueblo-style point of Grants obsidian and a pink chert thumbnail scraper. Ceramics recorded are predominantly indeterminate graywares, except for one possible Reserve Black-on-white jar sherd.

Discussions: Site 244-22 probably is multicomponent. The two obsidian chipping stations are reminiscent of late Archaic/Basketmaker remains, while the ceramic types date to Pueblo II. Tool manufacture, plant food procurement and processing as well as other activities related to faunal food preparation are represented. Visible artifact concentrations amidst a widely dispersed scatter argues for serial, and probably repeated, use for extended periods of time. Obviously, the site's elevated location made it conducive to a variety of on-site activities.

244-23

Location: T12N, R10W, Section 16

UTM Coordinates: N 3907100 E 236600
N 3906540 E 237100

Situation: From about 70 m north of Station G, the site follows the ridgeline and cliff edge above the canyon marking the southwest edge of the project area. Predominantly grass-covered, fourwing saltbush, snakeweed, and a few isolated juniper also occur within the site boundaries. A vehicle has been driven through the site.

Site Character: Recorded as an immense sherd and lithic scatter (600 m NW/SE x 150 m NE/SW), thousands of artifacts were observed both scattered across the site area and in concentrations (Figure 31). At the east edge of the site a possible hearth, consisting of a dispersed dark soil stain 3 m in diameter, was noted. Fist-sized sandstone rocks occur within the stained area, including a miscellaneous groundstone fragment. Surrounding the stain, artifacts occur in a 14 m diameter area and include two grayware jar sherds, five light colored chert secondary flakes, and two chert primary cores. Artifacts become less frequent west toward the edge of the cliff. A second concentration of artifacts, identified as a basalt chipping station, is eroding downslope, depositing artifacts along the way from one bench to another. Lithics predominately are secondary and secondary decortication flakes and bifacial thinning flakes. The chipping station merges with a third concentration of sherds, also eroding into the canyon. A fourth surface concentration, identified as the northeast side of the site, consists of at least ten secondary and tertiary flakes of Grants obsidian in a 5 m diameter area.

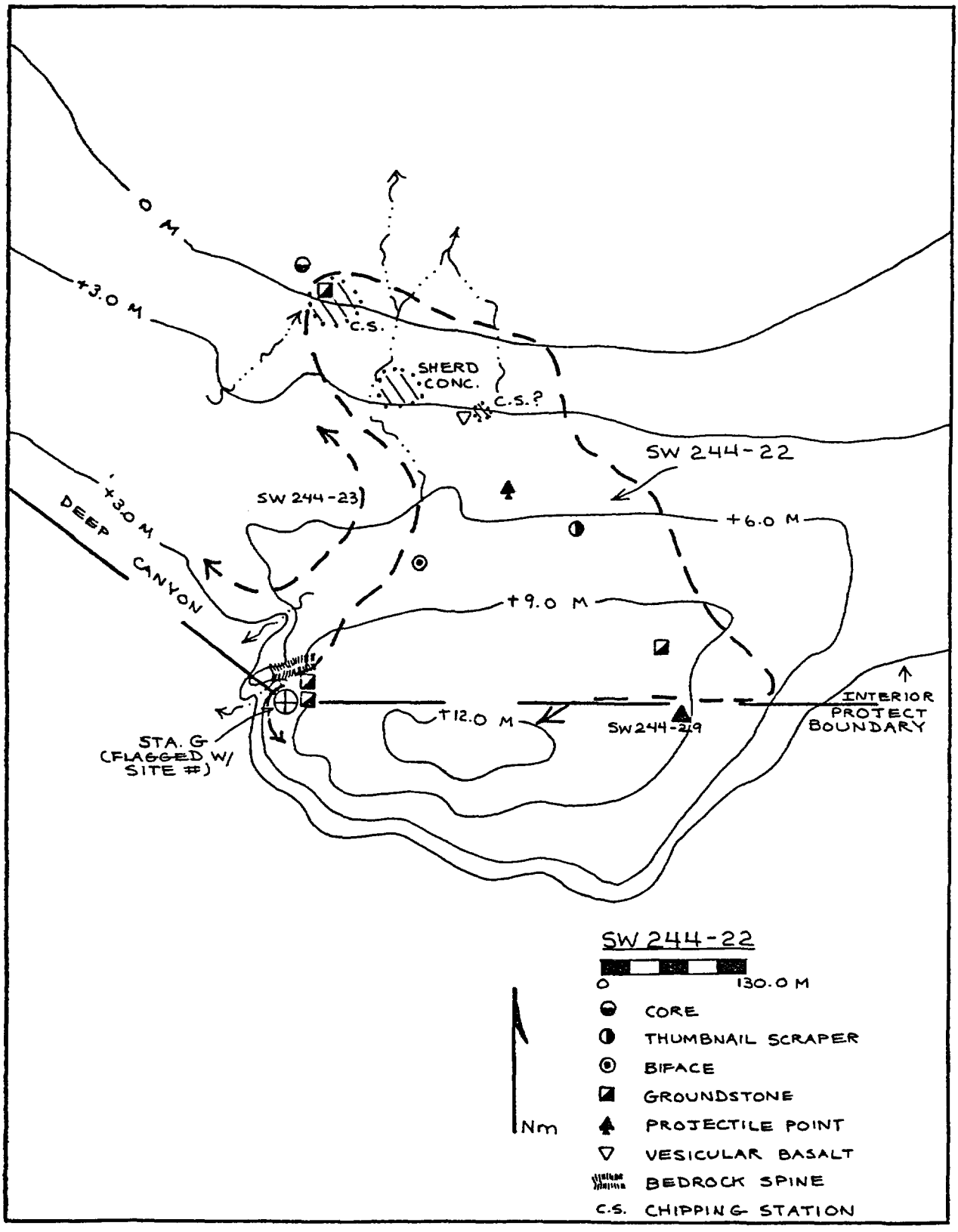

Figure 30: Site plan.

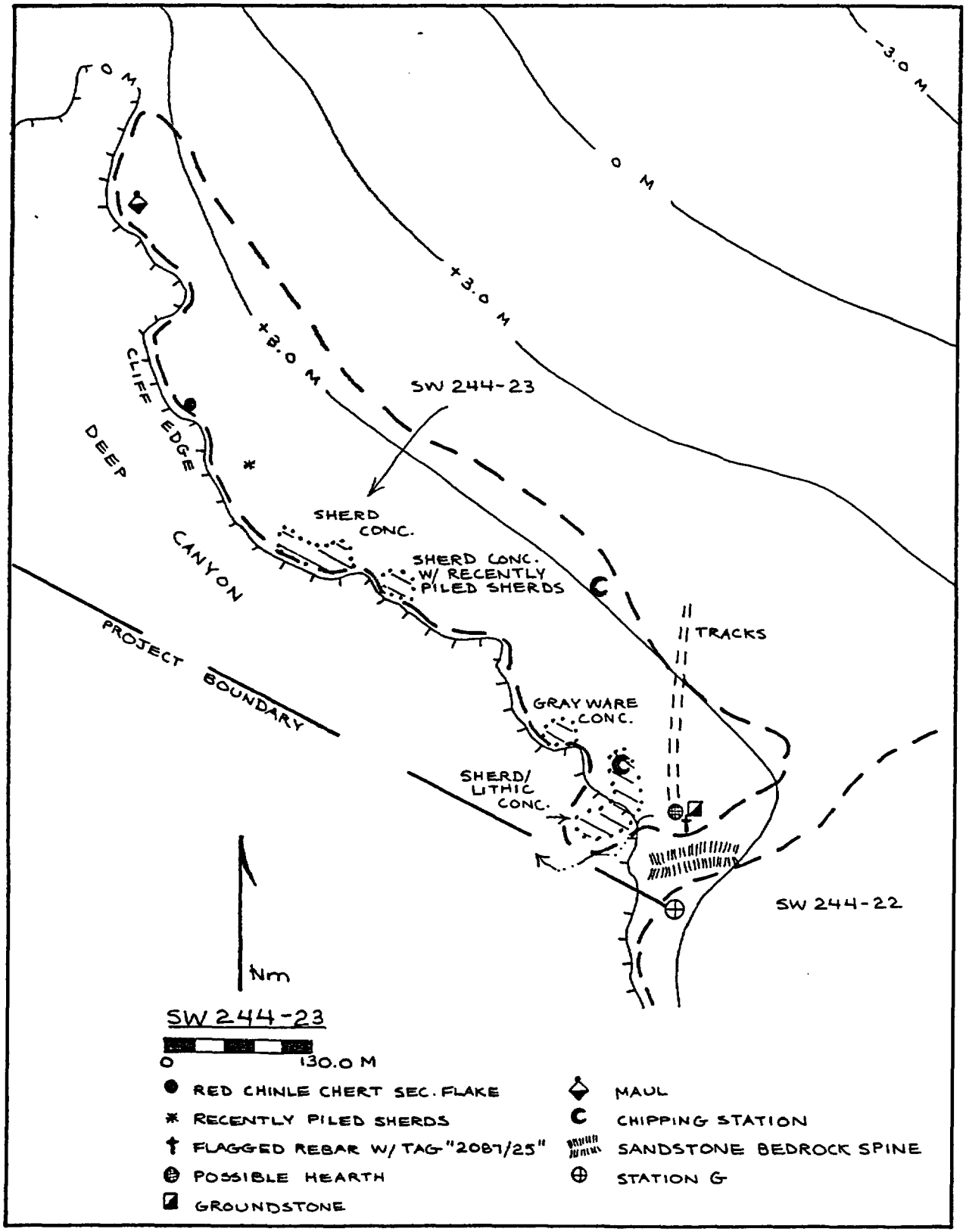

Figure 31: Site plan.

Within the site as a whole, light colored chert secondary and tertiary flakes predominate. One red Chinle chert secondary flake was recorded. Manuports and a maul of vesicular basalt were found at the north end of the site. Ceramics appear scattered across the site, but form visible concentrations in at least four areas. Virtually all of the sherds are indeterminate graywares from jars. Decorated whiteware sherds include Gallup and Red Mesa black-on-whites; plain and indented corrugated wares also occur. In two places on the site, artifacts were collected recently and placed in small piles.

Discussion: Based on the artifacts present and the lithic profiles represented, the site is multicomponent with occupations by both Archaic and Puebloan period populations. Although diagnostic artifacts of the Archaic period were not observed, the basalt chipping station and other debitage present attest to use by these groups. Pueblo II use is implied by the ceramics, the maul and lithic debitage attributes. Clearly, the site hosted long-term serial as well as short-term repeated use for a wide variety of tasks. The hearth indicates temporary habitation at least once while plants and animals were procured and/or processed and other domestic activities were performed. The ratio of graywares to decorated wares indicates the temporary storage of resources prior to transport elsewhere outweighed on-site food preparation and service. Initial plant food processing is suggested by the groundstone artifacts present, while the maul suggests wood or other resources were pulverized. Further, both formal and expedient tool manufacture and maintenance is indicated.

244-24

Location: T12N, R10W, Section 16

UTM Coordinates: N 3906680 E 236780

Situation: The site was built among large boulders at the base of a sandstone cliff point on the east side of a canyon. Local vegetation consists of grasses and fourwing saltbush.

Site Character: Measuring 30 m in diameter, the site consists of a rock enclosure and associated artifacts (Figure 32). The enclosure measures 5 by 3 m, with stacked sandstone rocks placed among natural boulders. A 1 m-wide opening occurs to the east. Historic artifacts noted include a rusted metal army surplus-style fork, a piece of hotel china, purple glass fragments, and a brown beer bottle base (AB Co.). Non-European artifacts cluster in the south and southwest portion of the site and include Grants obsidian secondary flakes and a biface, a grinding slab fragment, and an indeterminate grayware and a Red Mesa Black-on-white sherd.

Discussion: Site 244-24 is multicomponent. The earliest component dates to the Pueblo II (A.D. 850-1050) period and is associated with food procurement and processing on a short-term basis. Probably, a single use episode is represented. The rock enclosure is associated with turn-of-the-century Pueblo herding conducted in the area (1860s-1900s), functioning as a temporary enclosure for animals overnight.

244-25

Location: T12N, R10W, Section 16

UTM Coordinates: N 3906750 E 236700

Situation: Situated among natural boulders at the base of sandstone cliffs on the east side of the canyon, the site is bisected by a small drainage. Juniper is more prevalent here than elsewhere in the canyon.

Site Character: Three features and a small scatter of artifacts were recorded within the site's 22 by 31 m area (Figure 33). Feature 1 is an enclosure constructed by stacking five courses of rocks between large boulders on the west and south sides. The feature measures 7 by 3 m and opens to the east. Feature 2 is a partial enclosure located 12 m southeast; in two separate places rocks were stacked against the west and south sides of a large boulder, adjoining other large boulders, creating a shelter from the north and south. Feature 3 is a possible bin 7 m south of feature 1 and is represented by a mound of rocks at the base of an isolated boulder in an area 2 by .75 m. The rocks have collapsed inward and are almost level with the ground surface. Observed artifacts are: six

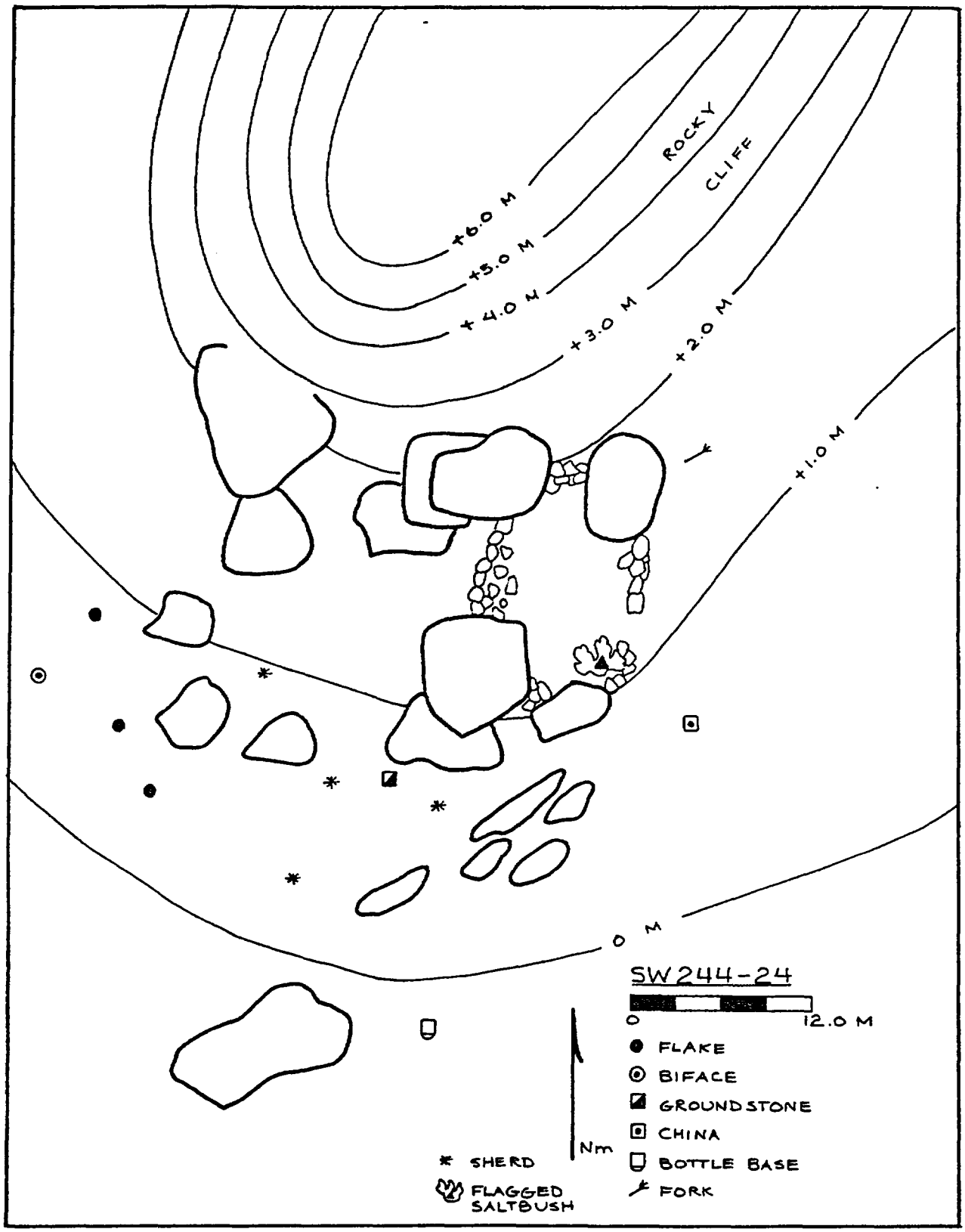

Figure 32: Site plan.

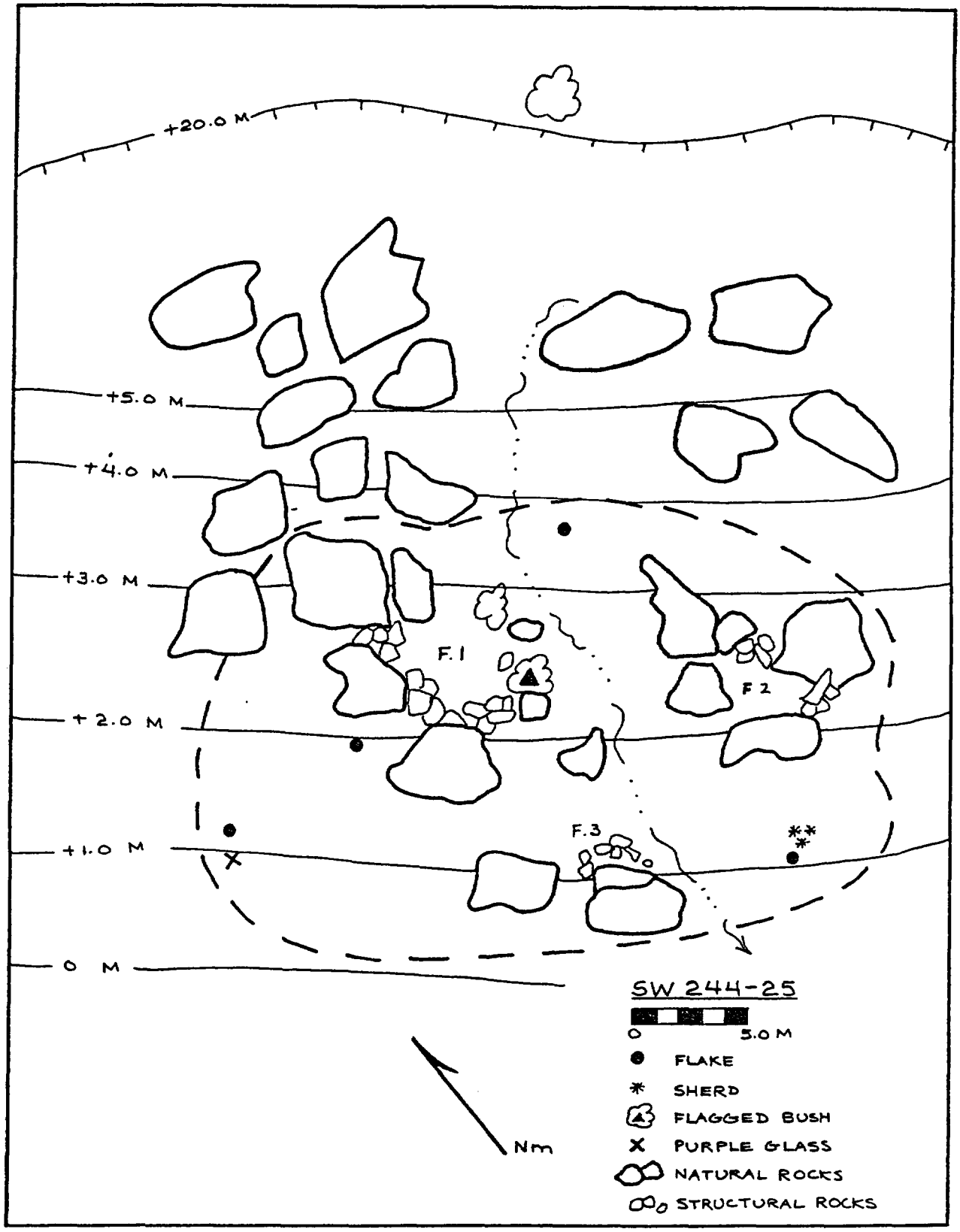

Figure 33: Site plan.

flakes (1 primary and 1 secondary flake of Grants obsidian, 1 petrified wood secondary flake, and 3 secondary flakes of either light colored chert or chalcedony) and seven sherds (1 indeterminate grayware, 1 indeterminate black-on-white, and 5 plain corrugated jar sherds). The indeterminate black-on-white sherd possibly is historic. Two pieces of purple glass also were noted.

Discussion: The site probably is an Historic Pueblo herding site (1880-1920) consisting of a temporary habitation structure for the herder and animal containment areas. The prehistoric sherds may represent curate items or a limited activity locus associated with plant food procurement during Pueblo II.

244-26

Location: T12N, R10W, Section 16

UTM Coordinates: N 3907200 E 236580

Situation: SW 244-26 is on a south facing ridge slope near the end of the ridge, overlooking the head of a drainage that empties into the canyon on the southwest edge of the project. Juniper grows in a belt along the ridge slope.

Site Character: Measuring 12 by 28 m, the lithic scatter is dispersed and consists primarily of Grants obsidian and white chert secondary flakes (7 each) (Figure 34). One Polvadera Peak obsidian biface fragment and a sandstone basin metate fragment were recorded as well. The metate was utilized on both facets.

Discussion: Based on the raw material and reduction debris observed, the site probably dates to the late Archaic/Basketmaker period (1800 B.C. - A.D. 400). Functions performed were plant food procurement and processing. Occupation of the site was temporary, perhaps used only once for a short time.

244-27

Location: T12N, R10W, Section 9

UTM Coordinates: N 3907720 E 237240

Situation: The site is located along the north edge of a small dune blowout north of an arroyo. Area vegetation consists of low grasses and snakeweed.

Site Character: Originally recorded as an isolated occurrence (I.O. 1), the scatter was reclassified later as a site because of the artifact density. The site is a small lithic scatter measuring 5 by 15 m and consists of about 18 artifacts including a Jemez obsidian biface fragment, a Grants obsidian tertiary flake, a chert primary core, and light colored chert secondary (10) and tertiary (3) flakes, and two pieces of angular debris (Figure 35).

Discussion: Based on the lithic profile, the site probably is Basketmaker or Puebloan (A.D. 400-1300). Occupied for only a short time, perhaps as a single episode, the site functioned as an expedient tool manufacture/maintenance locus and plant procurement area.

244-28

Location: T12N, R10W, Section 16

UTM Coordinates: N 3907200 E 237100

Situation: The site is on a northeast facing slope of the basin. Grasses, fourwing saltbush, snakeweed, and sage brush grow in the area.

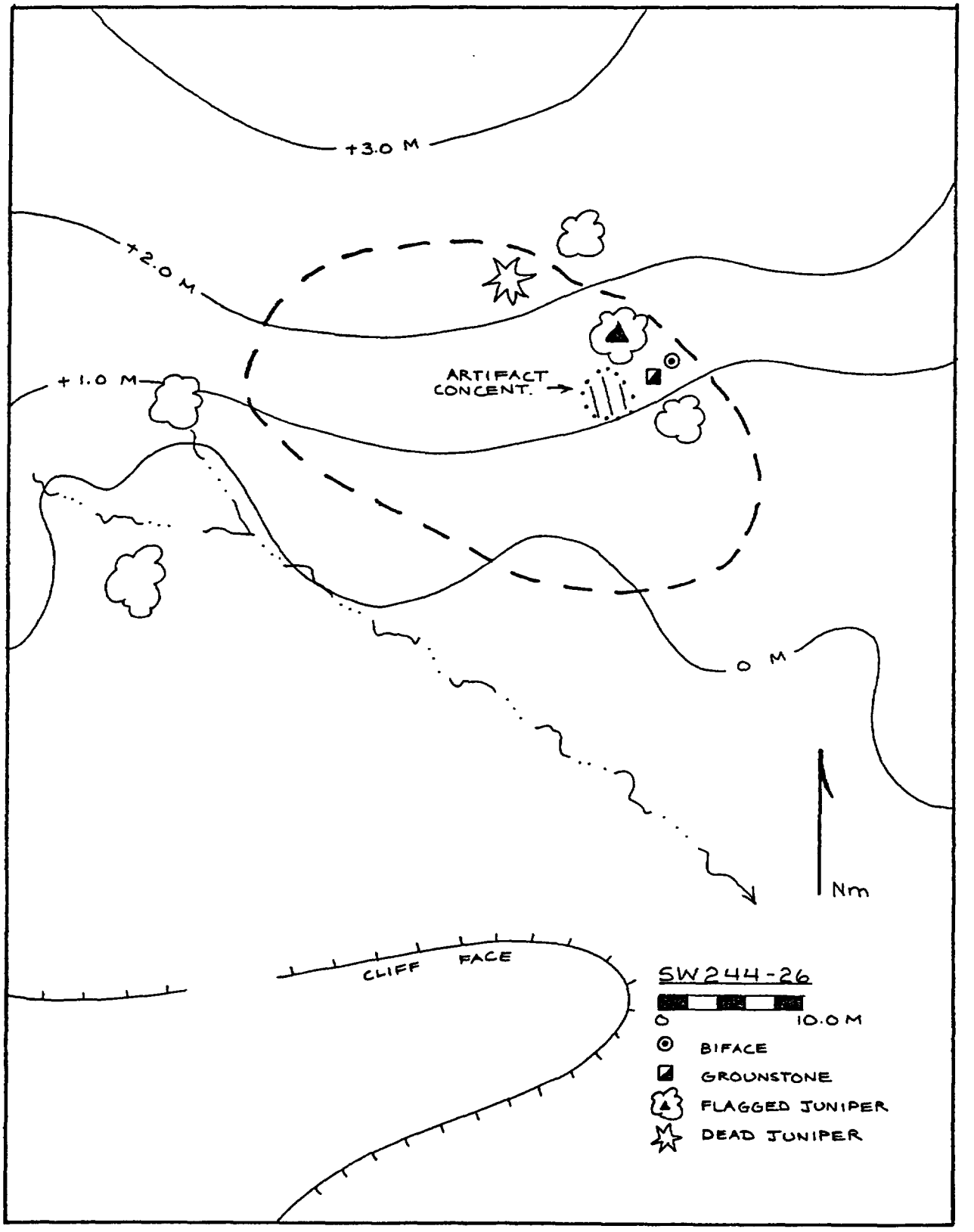

Figure 34: Site plan.

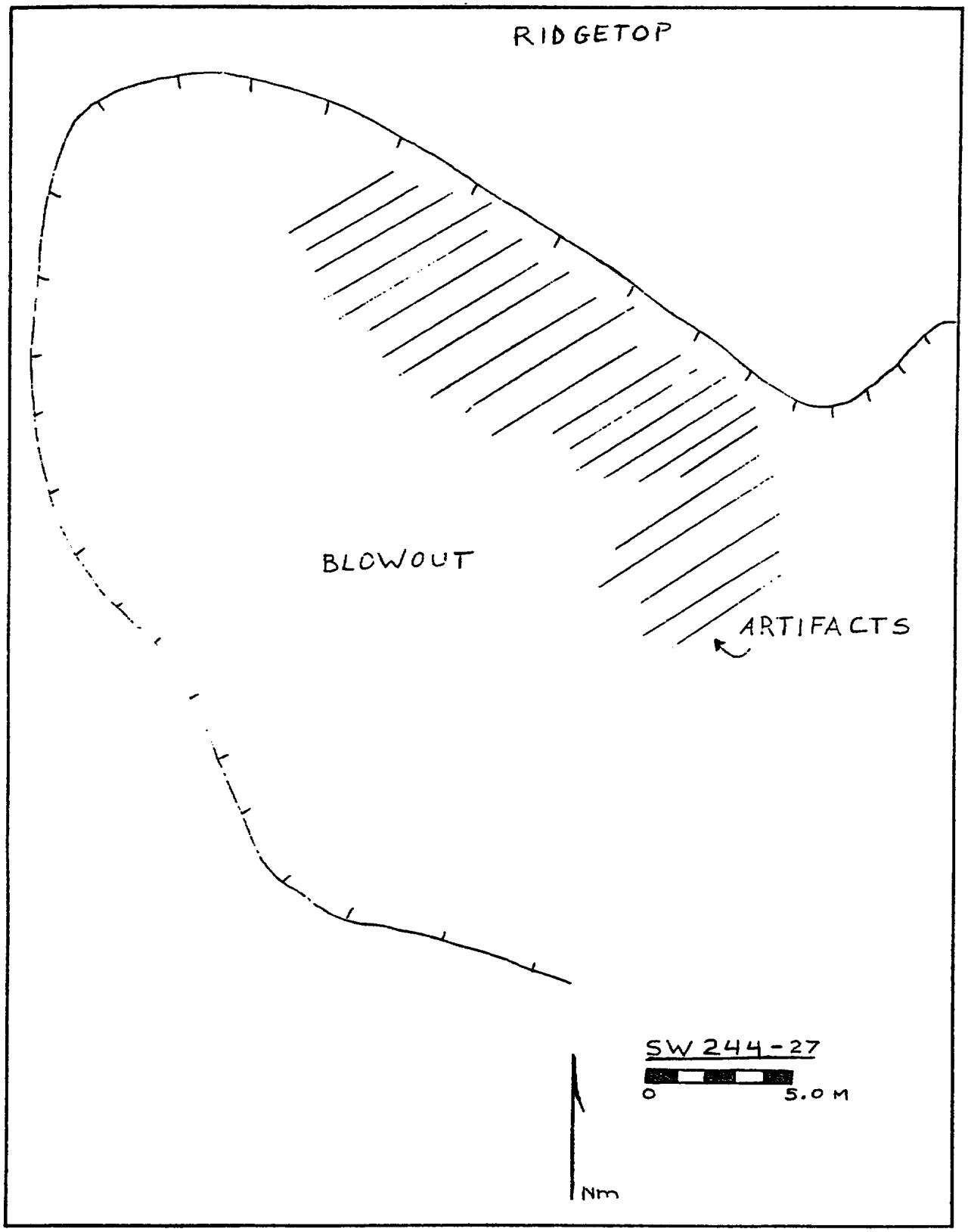

Figure 35: Site plan.

Site Character: This small chipping station measures 9 by 12 m and contains at least 12 Grants obsidian artifacts identified as primary and secondary flakes, and pieces of angular debris (Figure 36).

Discussion: Based on the raw material type, the expedient tool manufacturing site probably dates to the Basketmaker/Puebloan period (A.D. 400-1300) and represents a single, short-term use episode.

244-29

Location: T12N, R10W, Section 15

UTM Coordinates: N 3906460 E 237360

Situation: The isolated feature composing the site is in a shallow drainage head on a northeast facing slope. Grasses predominate, and juniper grows on the ridge slope to the east. An upright rod stands on the ridgetop 82 m north.

Site Character: The small 2.5 m diameter rock ring is constructed of loosely stacked sandstone rocks piled four courses high (on the north or downhill side) (Figure 37). A possible 2 m-wide opening faces west. Although no artifacts are in the immediate vicinity of the feature, one isolated chert secondary flake occurs 16 m southeast, and a second 16 m southwest.

Discussion: Based on the architecture present, the site's cultural affiliation is Historic Puebloan. The two lithics are not related to the structure, but probably pertain to the general Archaic and Puebloan use of the ridge. Function of the feature is indeterminate; it may be a windbreak, a lambing pen, or a storage feature. Site use was short-term.

244-30

Location: T12N, R10W, Section 15

UTM Coordinates: N 3906800 E 237540

Situation: SW 244-30 is on the north facing slope of the basin and occurs 50 m east of a small sandstone outcrop. Fourwing saltbush, snakeweed, sage, and grasses grow in the site vicinity.

Site Character: The 57 by 20 m dispersed lithic scatter contains at least 15 lithics of dark raw materials. such as Grants obsidian and dark gray cherts (Figure 38). Artifact types are predominantly secondary flakes and pieces of angular debris; a single primary flake and a Grants obsidian broken biface also were noted.

Discussion: Based on the raw material types and artifacts present. 244-30 probably is late Archaic/Basketmaker (1800 B.C. - A.D. 400) and functioned as a plant food procurement area. Site size and artifact density implies the site was occupied repeatedly.

244-31

Location: T12N, R10W, Section 15

UTM Coordinates: N 3907000 E 237810

Situation: The site occupies a position on a slight bench on the north facing slope of the basin. Small sandstone outcrops are 10 m northeast. One isolated juniper occurs on-site; otherwise, the area is covered by grass and snakeweed.

Site Character: The dispersed lithic scatter measures 32 by 28 m and includes at least 20 flakes of predominantly angular debris and secondary flakes of Grants obsidian (Figure 39). Three light colored chert secondary flakes were recorded.

Discussion: The plant procurement site possibly dates to the late Archaic and/or Pueblo periods (3200 B.C. - A.D. 1300). Indications are the site was occupied only for short periods of time.

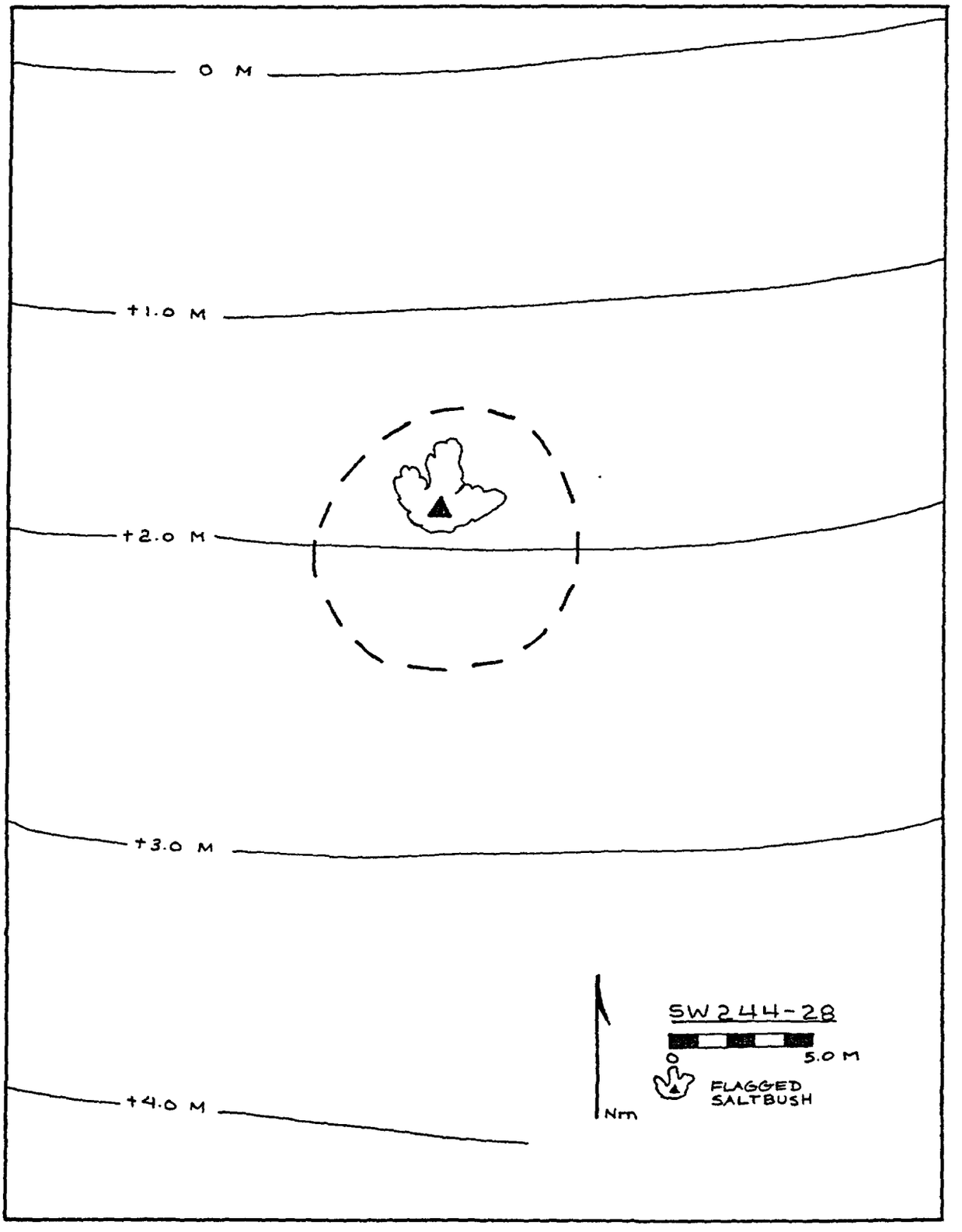

Figure 36: Site plan.

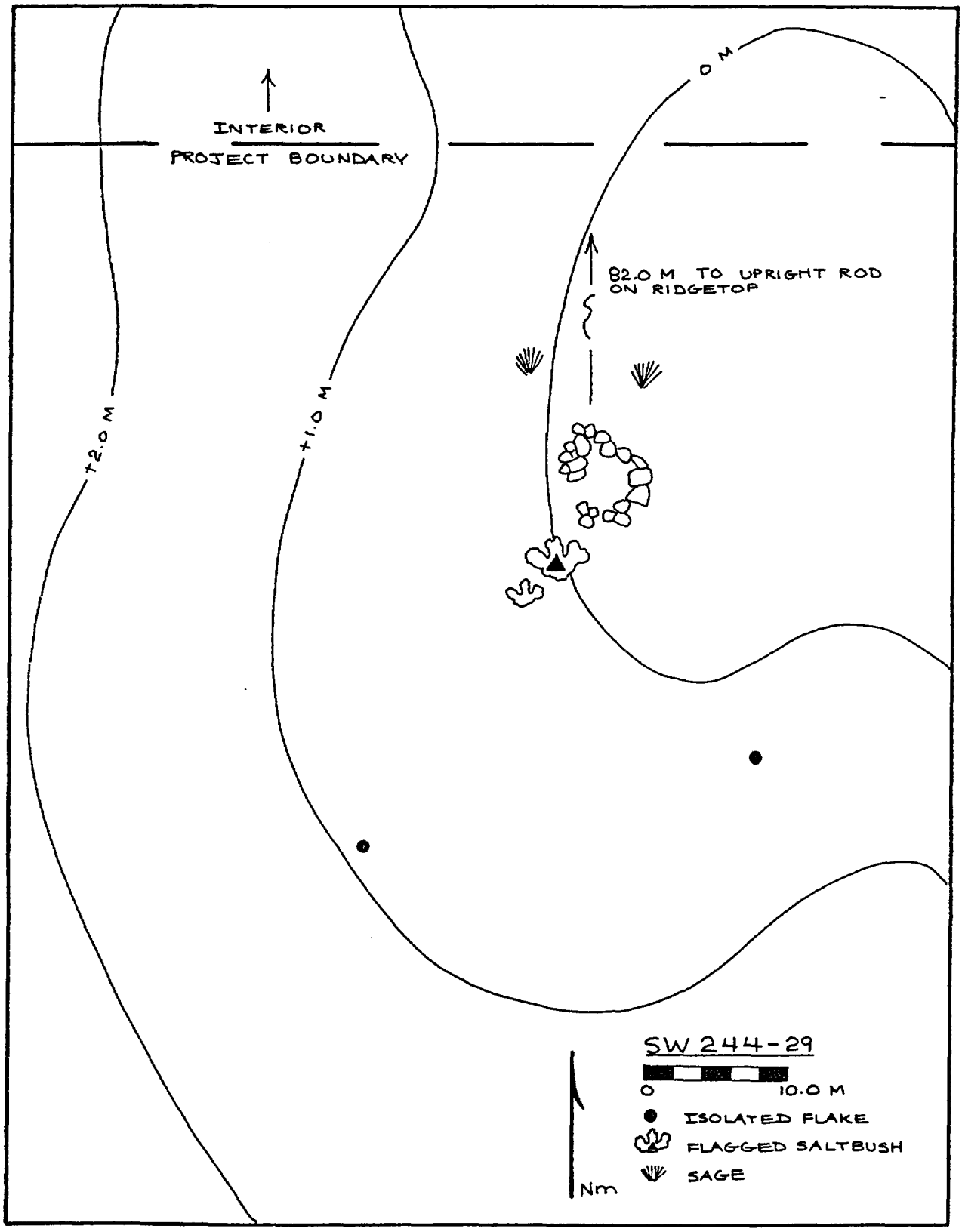

Figure 37: Site plan.

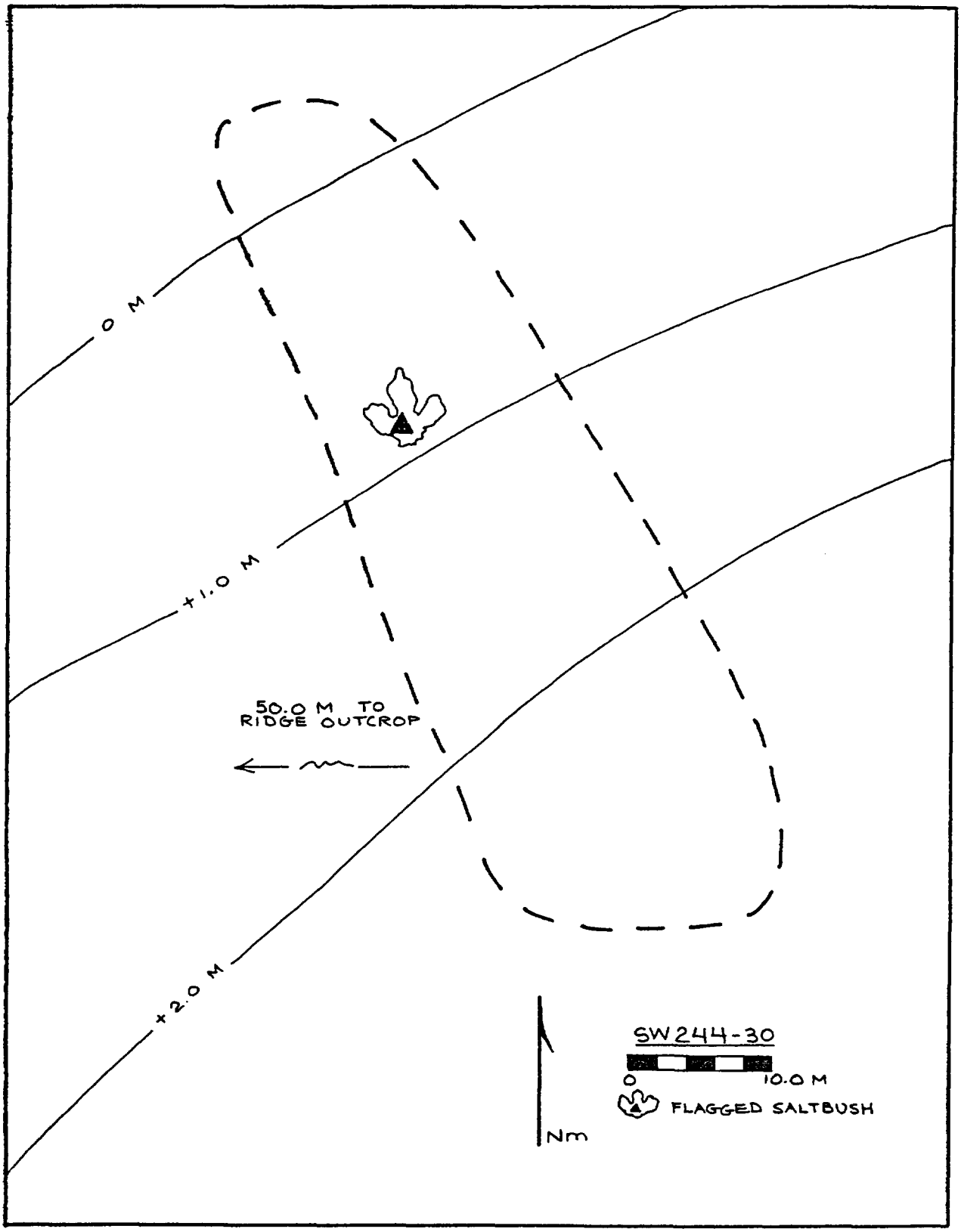

Figure 38: Site plan.

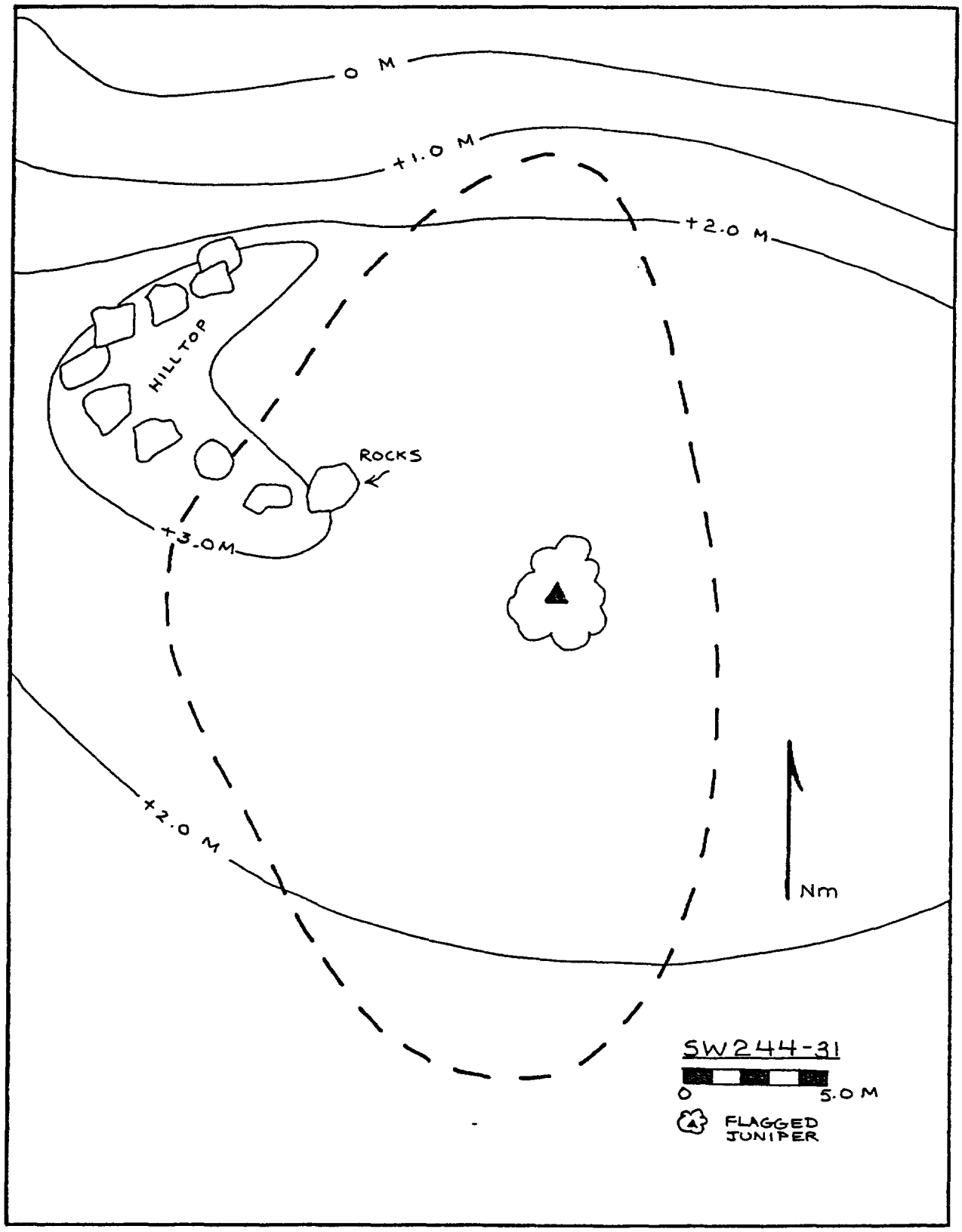

Figure 39: Site plan.

244-32

Location: T12N, R10W, Section 15

UTM Coordinates: N 3906080 E 238600

Situation: The site is on a ridge slope trending east-southeast. A seldom used dirt track bisects the site. Shallow dune blowouts occur in the predominantly grass-covered area.

Site Character: The lithic scatter measures 26 by 49 m (Figure 40). The 30 recorded lithics consist predominantly of Jemez obsidian and represent secondary and tertiary stages of reduction. Opaque obsidian and light colored chert and chalcedony secondary flakes also were recorded. One unifacially retouched basalt secondary flake was found in a small dune blowout.

Discussion: The site probably dates to the middle to late Archaic (5500 B.C. - A.D. 1) period based on raw material present at the site. Two activities occurred at the site; artifact types suggest plant food collection and formal obsidian tool manufacturing/maintenance. The site represents a short-term occupation.

244-33

Location: T12N, R10W, Section 23

UTM Coordinates: N 3907250 E 239480

Situation: SW 244-33 occurs on the alluvial flats of San Mateo Creek, just south of a long earthen dike, and just north of a cow tank. Fourwing saltbush and snakeweed predominate in the area.

Site Character: The single sherd scatter recorded during the project, the site measures 26.5 by 34 m (Figure 41). At least 20 sherds and a vesicular basalt manuport were recorded. Sherds are from both jars and bowls and are predominantly plain indented corrugated graywares. Design elements on the few decorated whiteware were identified as Gallup A and B, McElmo and Puerco styles.

Discussion: Site 244-33 is a Pueblo II-III (A.D. 1050-1275) food gathering site, possibly even related to horticulture. Consisting mostly of grayware jars, site activities emphasized temporary storage of plant foods to be transported elsewhere. The presence of black-on-white bowls implies some food service.

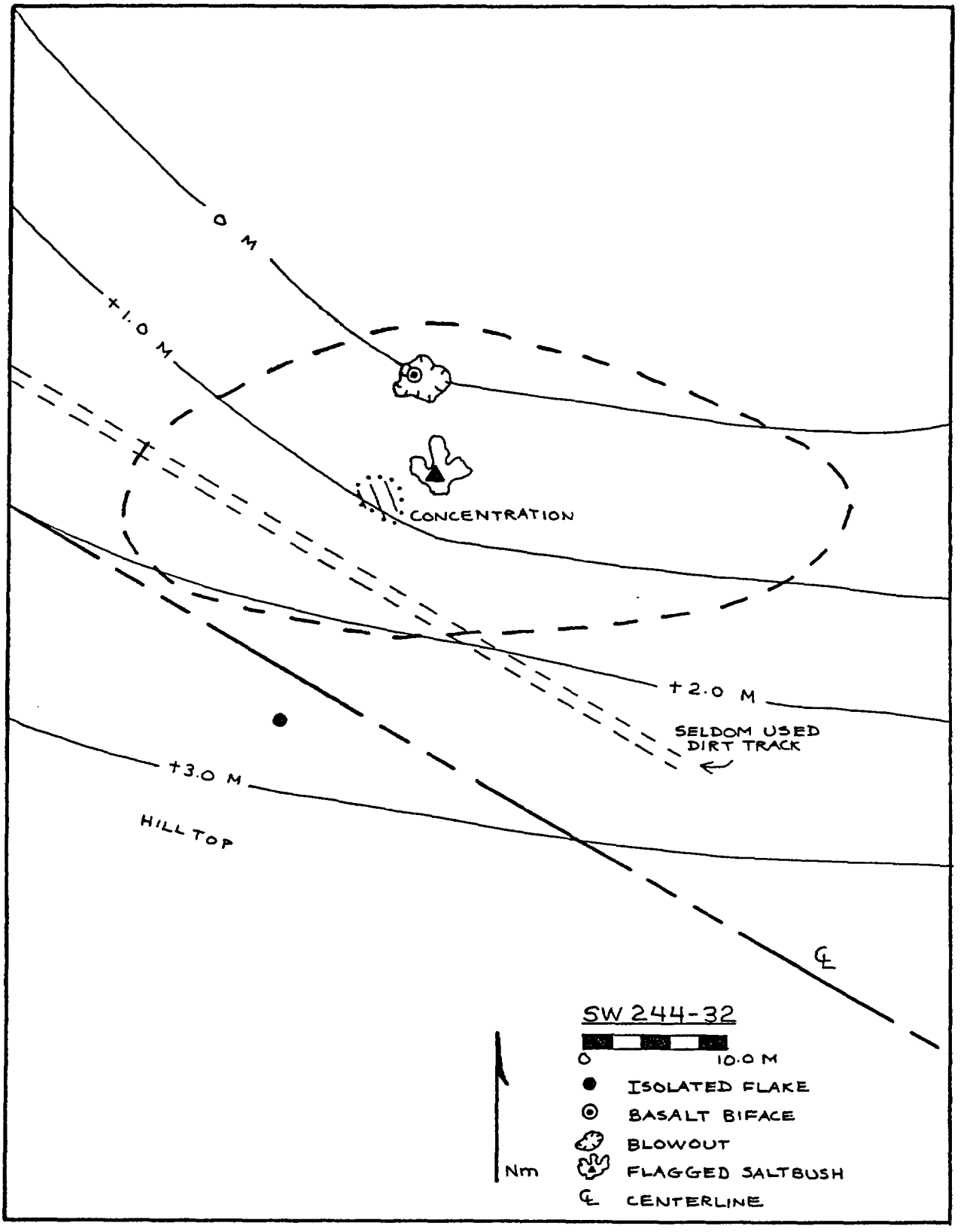

Figure 40: Site plan.

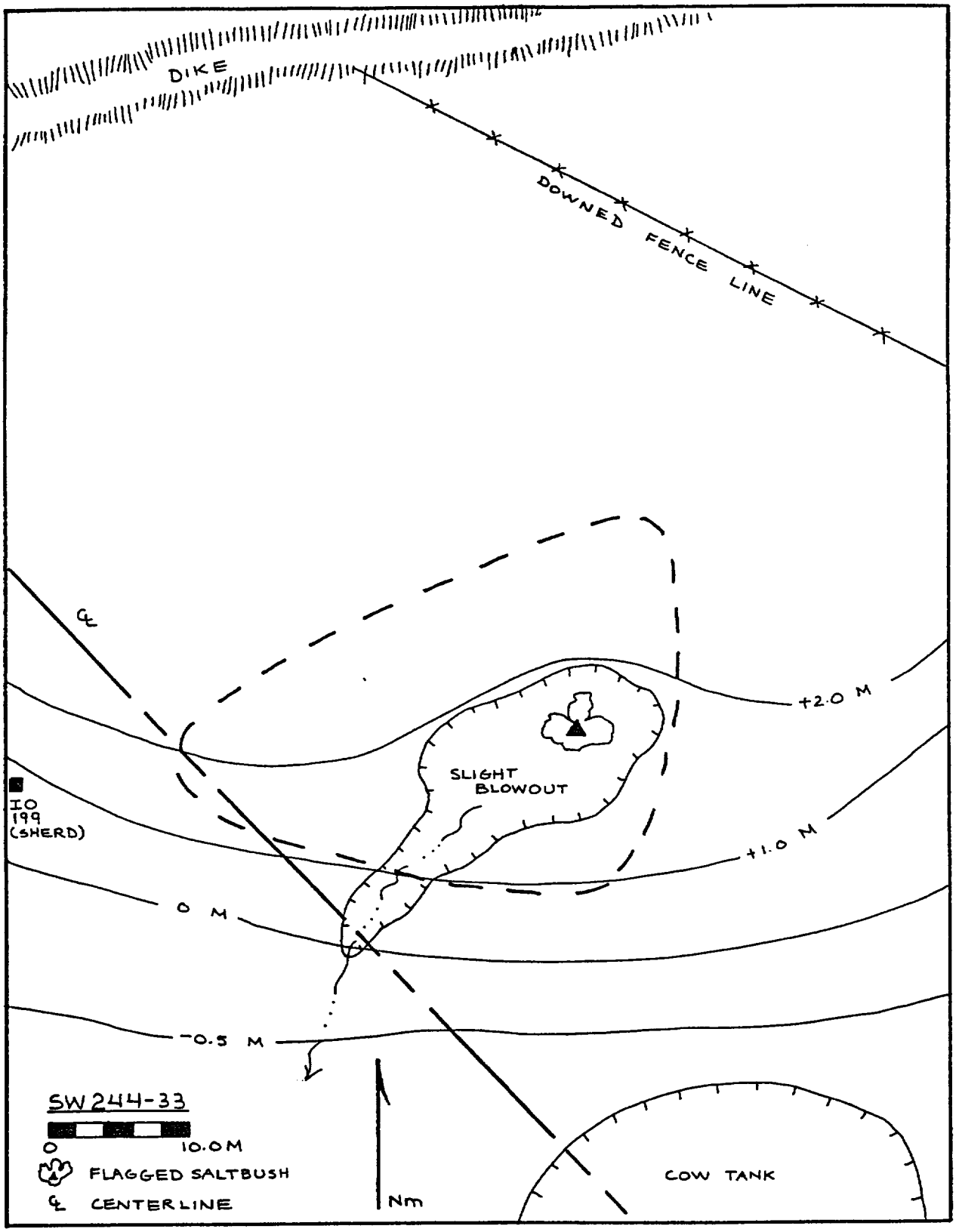

Figure 41: Site plan.

TABLE 1: ISOLATED OCCURRENCES FROM SW 244

LO	Description
1	Has been changed to Site 244-27.
2	Gray and black chalcedony secondary flake.
3	White chert primary core; Grants obsidian bifacial thinning flake, dark red petrified wood secondary decortication flake, and two light gray chert secondary flakes.
4	Within 67 m diameter area: red quartzite, two Grants obsidian, dark purple chert and light gray chert secondary flakes; one piece of basalt angular debris; Grants obsidian biface (reworked Archaic projectile point); two Kiatuthlanna (?) jar sherds.
5	One indented corrugated sherd; one brown chert secondary flake and three gray tertiary flakes; one piece of tan chert angular debris.
6	Red quartzite secondary flake, dark red chert secondary decortication flake, and white chalcedony tertiary flakes.
7	Tan chert secondary decortication flake.
8	Plain corrugated jar, smeared corrugated jar, and Kiatuthlanna or Red Mesa Black-on-white bowl sherd.
9	Grants obsidian secondary flake.
10	Indeterminate grayware jar sherd with possible puki mark.
11	Grants obsidian secondary flake.
12	White chert primary flake.
13	Gray chert secondary flake.
14	Grants obsidian primary and secondary flakes, and two dark red chert secondary flakes; Grants obsidian Bajada-style point, broken and reworked; miscellaneous groundstone fragment.
15	White chert tertiary flake.
16	Two Grants obsidian secondary flakes, two white chert tertiary flakes, one white chalcedony tertiary flake, and one Jemez obsidian secondary flake; one piece of white chert angular debris.
17	Seven indeterminate grayware jar sherds.

Table 1 (cont'd.)

I.O	Description
18	Two indeterminate grayware jar sherds; one white chert secondary flake.
19	Two secondary flakes and one tertiary Grants obsidian flake.
20	Five secondary and three tertiary Grants obsidian flakes, and one light gray chert secondary flake.
21	Beige chert secondary flake.
22	White chert tertiary flake.
23	Orange chalcedony secondary flake.
24	Indeterminate grayware jar sherd.
25	Dark red chert secondary decortication flake.
26	Light gray chert secondary flake.
27	Gray chalcedony secondary flake.
28	Indeterminate grayware jar sherd.
29	Indeterminate grayware jar sherd.
30	One Chaco Black-on-white jar, and two indeterminate grayware jar sherds; a piece of Grants obsidian angular debris.
31	One Jemez obsidian tertiary flake.
32	One secondary flake each of yellow chert and Grants obsidian: one piece of yellow chert angular debris.
33	Two smeared corrugated sherds; two gray chert secondary flakes, two white chert secondary flake, and one Grants obsidian secondary flake; possibly wash from SW 244-8 on ridge above.
34	Grants obsidian primary flake.
35	Grants obsidian secondary flake.
36	Grants obsidian secondary flake, white chert tertiary flake, and a black and brown chert secondary flake.
37	Two Grants obsidian secondary flakes; Grants obsidian Pueblo-style projectile point.

Table 1 (cont'd.)

I.O	Description
38	One secondary flake each of Grants obsidian; dark red chert and light gray chert; Jemez obsidian biface fragment.
39	Two Grants obsidian secondary flakes, and one red chert tertiary flake.
40	Four Grants obsidian secondary flakes.
41	Two indeterminate grayware sherds.
42	One indeterminate grayware sherd.
43	Gallup A Black-on-white jar sherd.
44	One secondary and one tertiary flake of Grants obsidian, one secondary and secondary decortication flake of Jemez obsidian; one white chalcedony secondary flake and two white chert secondary flakes.
45	Three indeterminate grayware sherds; one Grants obsidian secondary flake.
46	Possible historic checkdam consisting of three large sandstone rocks piled atop each other in a small sandstone lined drainage.
47	KC baking soda can - cost 25¢; 'G' in a circle in the center of the base; 1940-1945 (Vogler et al. 1983).
48	One secondary flake each of light gray chert and Grants obsidian.
49	Grants obsidian secondary flake.
50	White chert biface.
51	Indeterminate grayware jar sherd.
52	Yellow chert secondary decortication flake.
53	Polvadera Peak obsidian secondary flake.
54	In a 20 m diameter area; one primary and one secondary flake of Grants obsidian, and one flake each of cream chert and white chalcedony; a yellow petrified wood primary core.
55	One secondary and one tertiary flake of white chert, and a gray quartzite tertiary flake.

Table 1 (cont'd.)

I.O	Description
56	White chalcedony secondary and tertiary flakes, one Grants obsidian tertiary flake, and one secondary flake each of pink chert and light gray chalcedony.
57	Pink chert secondary flake.
58	Historic hearth/bin defined by seven upright slabs, measuring approximately 90 cm in diameter; no associated artifacts, nor charcoal apparent.
59	One secondary and one tertiary flake of white chert, one white and red chert secondary flake.
60	White chert tertiary flake; yellow chalcedony primary core.
61	Yellow chert secondary flake.
62	Gray chert primary flakes, and Grants obsidian secondary flakes.
63	One piece of white chert angular debris; light brown chalcedony flake; light tan chert primary core.
64	Gray chert primary core.
65	One secondary flake each of white chalcedony and light gray chert.
66	White chert tertiary flake.
67	One secondary flake each of Grants obsidian and pink chert.
68	Part of SW 244-20.
69	A 200 by 100 m (600 x 300 ft.) area; 20 flakes; two indeterminate grayware sherds. Lithics include red chert Lobo-style projectile point, a Grants obsidian Bajada-style point fragment, and debitage (mostly secondary flakes) of similar proportions of Grants obsidian and white chert, and a Jemez obsidian secondary flake.
70	White chert secondary flake; one piece of Grants obsidian angular debris.
71	White chert primary core; Grants obsidian secondary flake.
72	Grants obsidian secondary flake; one piece of white chert angular debris.

Table 1 (cont'd.)

I.O	Description
73	Semicircular rock wall, 3 by 2.5 m; sandstone rocks loosely stacked 1 course high on either side of a large boulder; no artifacts were observed.
74	White chert secondary flake.
75	Two white chert secondary flakes.
76	A possible pen, 4 by 6 m, against the south side of a small cliff; base; rocks stacked loosely in a 3 m long line on boulders on the northwest; another line of boulders extends 4 m across the front. Walls are collapsed.
77	Historic Laguna style Pueblo bowl sherds, thick walls, thick crackled slip, exterior carbon paint.
78	One secondary flake each of Grants obsidian and orange chert.
79	Five light colored chert secondary flakes, and one white chert primary flake; one exhausted chalcedony core.
80	Windbreak or hunters blind on edge of small sandstone ledge above the canyon; stacked rocks are 60 cm high (2 courses), 1.5 m long.
81	Two pieces of Grants obsidian angular debris.
82	Brown chert secondary flake, and Jemez obsidian tertiary flake; one piece of purple glass.
83	One primary and one secondary flake of Grants obsidian, light gray chert secondary decortication flake, dark brown chert secondary flake; late Red Mesa Black-on-white jar sherd.
84	Probably associated with SW 244-19: a Grants obsidian tertiary flake; a basin metate fragment.
85	Gray chert secondary flake.
86	Curation pile; purple quartzite primary flake, brown chert secondary flake, white chert secondary flake, white chalcedony secondary flake, dark brown petrified wood secondary flake, and a Grants obsidian primary flake; two pieces of white chert angular debris.
87	One secondary and one bifacial thinning flake of Grants obsidian.
88	Brown chert secondary flake.

Table 1 (cont'd.)

I.O	Description
89	Grants obsidian primary flake.
90	Grants obsidian secondary flake.
91	In an area 33 by 10 m; at least 13 unmodified vesicular basalt rocks in a small drainage.
92	Possible Escavada Black-on-white jar sherd.
93	Two Grants obsidian tertiary flakes.
94	Vesicular basalt manuport.
95	White chalcedony secondary flake.
96	Quartzite one-hand mano.
97	Vesicular basalt manuport.
98	Yellow chert secondary flake.
99	Miscellaneous groundstone fragment.
100	White chalcedony secondary flake.
101	Jemez obsidian secondary flake, and Polvadera Peak obsidian tertiary flake.
102	Two pieces of Grants obsidian angular debris; one Grants obsidian secondary flake, one white chert secondary flake, and one gray chert tertiary flake.
103	Gray chert secondary flake.
104	Three Grants obsidian secondary flake, and one white chalcedony secondary flake.
105	White chert tertiary flake.
106	Two secondary flakes and one tertiary flake of Grants obsidian, one secondary flake each of gray chert and Jemez obsidian.
107	One secondary flake each of white chalcedony and Polvadera Peak obsidian, and two Grants obsidian secondary flakes.
108	Four Grants obsidian secondary flakes, one chert secondary flake and two white chalcedony flakes; one miscellaneous groundstone fragment.

Table 1 (cont'd.)

I.O	Description
109	One secondary flake each of light gray chert and Grants obsidian.
110	Grants obsidian flake.
111	Large pink and white chert primary flake.
112	One piece of Grants obsidian angular debris.
113	White chert secondary flake.
114	Grants obsidian primary flake.
115	Grants obsidian secondary flake.
116	White chert secondary flake.
117	One primary and one secondary flake of white chert, Grants obsidian secondary flake, and white chalcedony tertiary flake.
118	Purple chert tertiary flake.
119	Gray chert primary flake.
120	Gray chert primary flake.
121	White chert secondary flake.
122	Grants obsidian Pueblo-style projectile point.
123	One secondary flake each of white chalcedony and gray chert; possible Escavada Black-on-white jar sherd.
124	Orange chert secondary flake.
125	Pink chert secondary decortication flake, and white chert secondary flake.
126	One pink chert secondary flake and one gray chert primary flake.
127	One primary and one secondary flake of gray chert.
128	Small gray and white chert primary core.
129	White chert secondary flake.
130	White chert primary flake.

Table 1 (cont'd.)

I.O	Description
131	Indeterminate grayware sherd, a Gallup B Black-on-white jar sherd, and two indeterminate black-on-white jar sherds; white chert secondary flake.
132	White chert secondary decortication flake.
133	Grants obsidian secondary flake.
134	White chert secondary flake.
135	Small windbreak north of a sandstone outcrop; L-shaped wall 2 by 1 m, one course high and one wide of loosely laid rocks; artifacts include a highly corroded pocket knife and a corrugated sherd 1 m east of structure.
136	Exhausted Grants obsidian core.
137	Grants obsidian secondary core.
138	White chert biface fragment; one secondary flake each of Grants obsidian and orange chert.
139	Two Grants obsidian secondary flakes; probably associated with SW 244-31.
140	One gray chert and one Grants obsidian secondary flake.
141	Grants obsidian secondary flake.
142	Two Grants obsidian secondary flakes and one white chert secondary flake.
143	Brown and tan chert biface fragment.
144	Pink chalcedony biface fragment.
145	White chert secondary flake.
146	Four possible Kiatuthlanna Black-on-white sherds.
147	Two Grants obsidian tertiary flakes, and one tan chert secondary flake.
148	Grants obsidian secondary flake.
149	Vesicular basalt manuport.
150	Indeterminate grayware sherd.

Table 1 (cont'd.)

I.O	Description
151	Indeterminate grayware sherd.
152	Jemez obsidian secondary flake, unimarginal retouch.
153	Jemez obsidian secondary flake.
154	Grants obsidian biface fragment.
155	Indeterminate grayware sherd.
157	Gallup A Black-on-white jar sherd.
158	Two indeterminate grayware sherds.
159	White chalcedony secondary flake; indented corrugated jar base sherd, indeterminate grayware jar sherd, three smeared corrugated jar base sherds, possible Red Mesa Black-on-white jar sherd.
160	White chert secondary flake.
161	Five indeterminate grayware jar sherds, and one Gallup A Black-on-white jar sherd.
162	Gray chert tertiary flake, and a Jemez obsidian secondary flake.
163	White chert secondary flake.
164	Gallup A Black-on-white jar sherd.
165	Gallup A Black-on-white jar sherd.
166	Grants obsidian secondary flake.
167	Jemez obsidian secondary flake.
168	Gray and white chert secondary flake, and gray chalcedony secondary decortication flake.
169	Grants obsidian secondary flake.
170	Jemez obsidian secondary flake.
171	Indeterminate black-on-white jar sherd.
172	Two indeterminate grayware jar sherds.
173	Puerco Black-on-white jar sherd.

Table 1 (cont'd.)

I.O	Description
174	Jemez obsidian bifacial thinning flake, two Jemez obsidian secondary flakes, two red chert secondary flakes, one red chert tertiary flake, and three Grants obsidian secondary flakes.
175	White chert secondary flake.
176	Pink chert secondary flake.
177	Two indented corrugated sherds.
178	Two indeterminate grayware jar sherds.
179	White chert secondary flake.
180	Indeterminate black-on-white jar sherd.
181	Gray chert biface fragment.
182	Two pieces of a light tan chert biface; a small flute originates from the base on one facet, ending at the break.
183	Pink granular chert secondary flake.
184	Grants obsidian secondary flake.
185	Dispersed can and bottle dump; five bottles and 10-plus cans.
186	Gallup A Black-on-white bowl sherd.
187	Two indeterminate grayware sherds, and one indented corrugated sherd.
188	Wingate Black-on-red bowl rim sherd.
189	Whole Phillips Milk of Magnesia bottle (1880-1920s) (Fike 1987).
190	Small dispersed can and bottle dump; no diagnostics observed.
191	Whole cosmetic bottle; on base is '6' and 'Fitch'.
192	Two Gallup A Black-on-white jar sherds.
193	Indented corrugated jar sherd.
194	Eight sherds: Red Mesa Black-on-white jar, two indented corrugated, indeterminate whiteware, three indeterminate graywares, and clapboard corrugated jar base.
195	Grants obsidian primary flake.

Table 1 (cont'd.)

I.O	Description
196	Indeterminate grayware jar sherd, and clapboard corrugated jar sherd.
197	Grants obsidian secondary flake.
198	Indented corrugated jar sherd.
199	An indeterminate grayware sherd; possibly associated with SW 244-33.
200	Indeterminate grayware jar sherd, and Red Mesa/Gallup hybrid bowl sherd.
201	Indeterminate grayware sherd.
202	Indeterminate grayware jar sherd.
203	Indeterminate grayware jar sherd.

SITE EVALUATIONS

Data from past projects in the Red Mesa Valley form the basis of much of the culture history presented earlier in this report. Consequently, the first step in the evaluative process is establishing data comparability between the cultural resources recorded during the present project and those composing the extant inventory. Criteria used to establish comparability follow Scheick (1985), who synthesized and discussed Red Mesa Valley archaeology according to five attributes. Those attributes are: cultural-temporal affinity, site density, site distribution, site type and site function, and site type pattern. The present site data are stratified by these criteria, and each is discussed separately below. Unfortunately, work done in the vicinity of the present project has not been synthesized similarly, and such an endeavor is beyond the scope of this project. Admittedly, this restricts comparisons to work done around Prewitt, located further west in the Red Mesa Valley. When appropriate, comparisons are made to more general trends outlined in an earlier publication by Scheick (1981).

The second step in the evaluative process is to consider the significance of these sites with respect to National Register Criteria. The significance of cultural resources is evaluated according to four criteria (36 CFR 60.6), only one of which is applicable to the survey site data. Criterion d) states "The quality of significance in American history,...archaeology, and culture is present in...objects that possess integrity of location,...setting, materials,...and association, and that have yielded, or may be likely to yield, information important in prehistory or history". A site's information potential can be translated into research potential, identified by comparing new acquired site data with the current accepted understanding of prehistory and history and research issues in the region. If sites can provide new information, clarify points of contention, fill in informational gaps, or offer new insights into cultural processes or developments, the sites can be judged significant. The research potential of the present project site inventory is presented at the end of this section, and recommendations are made about the eligibility of these sites for inclusion onto the National or State registers.

Data Comparability

Cultural-Temporal Affinity

Although 14 of the 33 sites recorded lack diagnostic artifacts, no sites are unclassified. However, a number of sites could be assigned only a general Archaic or Puebloan affinity. Cultural-temporal affinity was identified on the basis of diagnostic artifacts, architectural styles, similarities to established lithic profiles, and ethnohistoric information.

The project yielded 33 sites dating to the Archaic, Puebloan and historic periods. Of those 33 sites, only 38 percent represent a single cultural-temporal period, resulting in the identification of 54 site components. All phases of the Archaic and Puebloan periods are represented, though the late Archaic/Basketmaker and Pueblo II phases are best represented. Historic period sites fall neatly between 1860 and roughly 1930.

Archaic site components (19) account for 35 percent of the inventory. Early Archaic components are present at three sites (16% of the Archaic inventory, 5% of the site component inventory), middle Archaic at one site (5% of the Archaic, 2% of the site components), and middle/late Archaic at 2 sites (10% of the Archaic, 4% of the site components). Late Archaic/Basketmaker components are present at nine sites (47% of the Archaic inventory, 17% of the site components), and four site components (21% of the Archaic, 7% of the site components) are identified only as Archaic.

All of the early Archaic components were identified by the presence of Bajada or Jay style projectile points. The single middle Archaic site component is represented by a Pelona style point, characteristic of the Cochise cultural tradition. The remaining Archaic site components were identified by either projectile point styles or lithic profile similarities. Two of the late Archaic/Basketmaker site components contain Basketmaker II style points that are believed to be curate items.

Within the project site inventory, Basketmaker remains are never clearly identified. Basketmaker II could not be segregated from late Archaic remains normally, except in the two instances noted above. In both cases, the points seem to reflect curate items. Basketmaker III is part of a general Basketmaker/Puebloan assignment. The latter assignment occurs five times in the site component inventory, accounting for nine percent of the total site components. Generally, these site components contain lithic profiles characteristic of this gross time period and occur as single component sites.

Puebloan site components (21) account for 39 percent of the site components. Indeterminate Puebloan site components make up a large percentage (33%) of the total Puebloan site components and a significant percentage (13%) of the total site components. Pueblo I site components occur at two sites (9% of the Puebloan inventory, 4% of the site components), once with an early Archaic component, and once with a late Archaic/Basketmaker component. A single Pueblo I/II site component was identified (5% of the Puebloan inventory, 2% of the site components). Pueblo II site components occur at seven sites (33% of the Puebloan inventory, 13% of the site components), only once alone. Four Pueblo II/III sites components were identified (19% of the Puebloan inventory, 7% of the site components).

Puebloan sites were identified in four instances by projectile points, and in 12 instances by ceramics. The remaining five site components were assigned affiliation based on their lithic profiles.

Historic components (9) represent 17 percent of the site components. All of the historic remains resulted from Historic Puebloan use between 1860 and 1930. In only two instances do these sites occur as single components.

Historic sites were identified by masonry style and ethnohistoric data.

In comparing the present project data to the extant site inventory, a number of anomalies are indicated. First, similar percentages of Archaic and Puebloan site components occur, indicating a significant increase in the number of Archaic site components identified for the area. The present project documented almost as many Archaic site components as are known for the Red Mesa Valley. There is, however, a large number of undiagnostic lithic scatters recorded in the valley, but given the present project results, these cannot all be assigned Archaic age. Second, all phases of the Archaic period are represented. The majority of extant site components date to the late Archaic. Third, identifiable Basketmaker remains occur. Fourth, Historic period remains relate to Puebloan use as opposed to Navajo use of the area, and finally, historic use is restricted to pre-1930.

Density

Number of sites averages 29 per square mile, or 50 site components per square mile. Powell's (1979) survey between Prewitt and Ambrosia Lake resulted in 56 sites per square mile, and Scheick (1985) recorded an average of 52 sites per square mile in a railroad line survey extending from Prewitt to the San Mateo Basin. Whitmore (1979), on the other hand, documented 19 sites per square mile. Powell's and Scheick's surveys crossed elevations ranging from 6,900 to 7,600 feet, spanning both valley bottoms and the surrounding tablelands. Whitmore's survey concentrated in the valley bottom between 6,900 and 7,000, an elevational area similar to that of the present project. However, our site density is considerably higher than Whitmore's and may relate to the specifics of area physiography.

Stratifying site components cultural-temporal periods, site component densities per square mile are: 16 Archaic, 23 Pueblo and 8 Historic Pueblo.

These numbers are misleading, however, because of the occupational spans represented by the different cultural-temporal periods. Temporal density figures more accurately characterize group use. For example, Archaic use of the area began as early as 5500 B.C. and ended around A.D. 400, a span of 5,900 years. The density figure for the Archaic period is approximately one site component ever 310 years. For the Pueblo period, the span is 900 years; the density figure is one site component every 35 years. For the Historic period, one site component was established every 8 years. Clearly, Puebloan and Historic use of the area was more intensive than Archaic use. Perhaps, the area was more conducive to Puebloan and Historic subsistence strategies, or the subsistence bases could support larger populations, or later occupations mask earlier site components. Also, curation or reuse of earlier artifacts by later area occupants may have occurred.

The present project compares more closely with Whitmore's survey (1979) and Scheick's survey (1985) with respect to historic site components (8 and 6 site components per square mile, respectively), but more closely with the higher elevation survey site densities of Powell for Archaic and Puebloan site components (12 and 19 sites per square mile, respectively). Rates of site component establishment for the Archaic period also are similar to those of Powell's (1 site every 123 years), which are much higher than those indicated by Whitmore and Scheick. Rates of establishment of Puebloan site components, however, is much slower than for any of the other three projects, possibly suggesting the inhospitability of the area to Puebloan economics or the longer occupational span reflected in the archaeological record for the present project. Rates of establishment during the Historic

period are comparable (10, 14 and 16).

Site Distribution

Although three physiographic zones were used by Scheick (1985) for examining the distribution of site components, these zones are not appropriate for the present project. The present project area represents a single physiographic feature, a shallow, partially closed drainage basin associated with a tributary of San Mateo Creek. Moreover, the basin is low, occurring at an elevation comparable to portions of the Red Mesa Valley floor. Consequently, more refined physiographic/environmental differences were used to examine site distribution patterns.

The data indicate that basically five physiographic locations were preferred by area inhabitants: open-exposed grassy ridgetops and slopes (36%), the fringes of the juniper woodlands (33%), the bottom and slopes of the grass-covered basin (15%), the bases of cliffs (12%), and the alluvial first terrace of San Mateo Creek (3%).

Archaic site components, particularly early ones, demonstrate a strong preference for ridgetops; late Archaic/Basketmaker sites occur there as well as in the juniper fringe areas close to the northern ridge. Puebloan site components exhibit the widest range of site locations, occurring in all physiographic zones. For the most part, early Pueblo site components are found in the basin, ridgetop, and woodland fringe areas, Pueblo II site components everywhere, and the single Pueblo III component in the alluvial flats. Historic sites generally are located at cliff bases and along the juniper fringe areas, although two historic site components occur on ridgetops.

These patterns are consistent with larger area settlement patterns.

Site Type

For the purposes of survey, site types are defined as either habitations or limited activity loci. Site types are determined by the presence or absence of attributes as well as by combinations of attributes. Attributes used include internal size, artifact diversity and density, presence or absence of architecture, type of architecture, and presence or absence of extramural features (Scheick 1985:55). Habitation sites are those that produce substantive architectural or material remains indicative of more than transitory occupation; activity sites produce more expedient architectural forms and represent a more limited range of activities reflected in material culture of low density and less variability. Habitation is not equated with permanentcy of occupation. The presence of hearths, other extramural features and groundstone on pre-Puebloan sites is considered indicative of habitations, while natural rock shelters, hearths, storage features, subsurface pithouses and surface masonry structures are used for Puebloan sites. Enclosures, masonry structures and homesteads identify Historic period habitations.

Using these criteria, eight site components in the inventory can be identified as habitations, while four others are suspected habitations. Site components at 244-9, -12, -15, -16 and -25 contain structures, and components at 244-10 -18 and -23 have hearths. Site 244-9 is Puebloan, the other four structural site components are historic. Sites 244-18 and -23 are single component sites assigned generalized Basketmaker/Puebloan and Archaic-Puebloan affiliations, respectively. The hearth at 244-10 represents an historic component. The four suspect sites (244-8, -20, -21 and -22) all contain hundreds to thousands of artifacts and exhibit some degree of artifact variability. Groundstone also is present. All are multicomponent (or suspected multicomponent) with visible surface artifact concentrations, suggesting different activities. In all likelihood, the sites contain subsurface features.

All of the remaining sites are limited activity loci, exhibiting restricted artifact inventories and a general absence of formal tools. Although a number of these are not characterized by low artifact densities, these sites seem to reflect serial (multicomponent) or repeated use.

Site Function

General site functions were assigned each of the site/site components in the discussion section of the Site Descriptions. Certain limitations restrict those interpretations, however. First, all of the data was gathered from surface artifacts, which may or may not be representative of the site. Second, artifact observations are limited to generalizations gathered during reconnaissance of site areas. Third, the majority of sites are multicomponent, and thus associations between cultural-temporal components and

site function is distorted.

Forty-five site components reflect wild plant and animal food procurement and processing, and tool manufacture and maintenance activities. Primary emphasis, however, was on plant food procurement and processing, followed by expedient tool manufacture. Two Puebloan site components probably were related to horticulture, and three other site components were used exclusively as chipping stations. Less than 25 percent of the sites yielded physical evidence of hunting related activities, such as projectile points or bifacial scrapers. No knives were recorded, and only a single drill was noted. Seven of these site components are identified as habitations, or potentially as habitations, implying at least an overnight stay and possibly several days.

Nine sites are related to herding activities and functioned either as temporary habitations and stock enclosure areas (6 site components) or simply as stock enclosure areas (3 site components). All of the sites date to the Historic period, circa 1860 to 1930.

Site Type Patterns

The similarity of site types precludes discussions of patterning, except for the few sites containing some evidence of habitation. The one Puebloan habitation site is located on the valley bottom, a location consistent with the suggested horticultural function, the other six Archaic or Puebloan site components all occur on elevated physiographic features or are in the juniper fringe areas. The five historic habitation/herding complexes correlate with sandstone cliffs and are located at the bases of these physiographic features.

Evaluative Summary

Cultural-temporal affinities of site components are consistent with known occupation of the Red Mesa Valley, except for the Historic period. No Paleoindian sites have been identified for the Red Mesa Valley, although isolated diagnostic artifacts are recorded. The cultural history of the area begins with early Archaic and continues up to A.D. 1300, when a cultural hiatus occurs until the entrance of the Spanish in 1539. From 1539, use of the area continued into the present. Project Historic sites date exclusively from the 1860s to 1930s and are affiliated with historic Puebloan groups probably from Acoma. No Navajo sites were recorded.

Site densities are somewhat different from other projects conducted in the valley, but elevation probably played a key role in those differences. Overall, site densities per square mile are similar to the Whitmore survey (1979); both project areas fall within the lowland areas of the Red Mesa Valley at elevations around 2,072.6 m (6,800 feet). Temporal densities, rates of site component establishment, are comparable to Powell's 1979 survey results for the Archaic and Puebloan periods. Historic site components were generated at rates similar to Whitmore's survey (1979).

Physiographic patterning could not be compared to other projects in the Red Mesa Valley; the project falls within a single physiographic feature as identified by other area researchers, and at the same time, is environmentally unique to other studies. Although located in the valley bottom, the project area lies between the confluence of the Rio San Jose and San Mateo Creek and is coincident with a semi-closed drainage system. Regardless, definite local physiographic preferences are evidenced among the cultural-temporal periods represented in the project inventory. Generally, these patterns follow regional correlations.

The majority of sites recorded during survey represent expedient, limited activity use areas, often evidencing repeated or serial (multicomponent) occupation. Predominate use of the area apparently was for plant food procurement and processing. When tool manufacturing occurred, more often than not, those expedient flake tools were used in plant procurement. Some opportunistic hunting also was conducted. Few features were found on prehistoric sites, suggesting that either occupation was short-term and/or transitory or substantial overburden has accrued since occupation. Historic site components reflect middle 1800s to early 1900s herding activities, probably by Acoma Puebloan populations.

Research Potential

All of the sites recorded during survey have the potential to yield information important to area prehistory or history, which is enhanced by their undisturbed nature.

To date, very little is known about the Archaic period in the eastern Red Mesa Valley. Sites recorded thus far date primarily to the late Archaic and reflect hunting loci accompanied by opportunistic foraging. Populations apparently were transitory and used the area enroute to scheduled resource use areas. All phases of Archaic occupation are represented in the present project site inventory, however, the majority of sites reflect plant procurement and processing, followed by expedient tool manufacturing and maintenance, and hunting. More importantly, a number of sites evidence more than transitory use, while a still even greater number demonstrate continued or repeated use. The intensity of area use suggests the small basin probably was the focus of a seasonal round. How these two separate economic strategies articulated can provide important information for increasing our understanding of Archaic occupation and use in the region. Further, the appearance of a Cochise tradition point on a single component site is unique in the area and potentially can provide important information about the nature of use and how that use may have differed from Oshara tradition use. Additionally, the Cochise tradition site dates to the middle Archaic, the point at which Irwin-Williams (1973) believes maize was introduced to Oshara populations by Cochise populations.

Puebloan sites in the extant site inventory demonstrate occupational continuity from the Basketmaker period to sometime during Pueblo III, when the area was abandoned. By far, the best represented site in that inventory is a Pueblo II fieldhouse, farmsite or pueblo of 8 to 10 rooms, while the most prominent site is a Chacoan outlier. Sherd and lithic scatters form a much smaller percentage of the inventory, and their relationship to the other site types is unclear. Moreover, most Puebloan sites are thought to be part of an economic strategy heavily dependent upon domestic crops. Within the Red Mesa Valley, cultural, economic and social developments and changes are believed to be somehow tied into the vagaries of the Chaco Phenomenon. The present project site inventory fits none of these parameters. The sites are small, most are nonstructural, emphasis apparently was on wild plant procurement and processing, and no indications exist for permanent or semipermanent use of the project area by Puebloan peoples. These sites form an important body of data that potentially can address the relationship of small sites to large sites, agricultural dependence, and the nature of Chacoan influence in the area. Important information concerning the question of local populations and in situ developments, or immigrant populations and introduced attributes as explanations for outliers could be gathered from these small sites. Finally, the close proximity of these sites to at least three identified Chacoan outliers may offer information about outlier boundaries.

Historic sites in the area form a unique body of data concerning non-Navajo native populations. To date, research in the area has concentrated on Navajo populations. Very little work has examined other populations, their relationships, or their origins. The sites could offer significant information about traditional use areas and acculturation processes effecting those groups. They also could serve as important base information sources for attempts at establishing ethnic identity in the archaeological record, an issue critical to area understanding.

RECOMMENDATIONS

The State Register of Cultural Properties and the National Register of Historic Places were consulted, and no sites currently on or nominated to them are within or in close proximity to the project boundaries.

The isolated occurrences recorded during survey span the cultural-temporal periods represented in the site inventory and represent isolated uses associated with those occupations. Apart from identifying use areas, these sites offer little data potential. However, that information has been exhausted through field documentation, and these remains warrant no further research.

All of the sites are recommended as eligible for inclusion on the National and State Registers based on their demonstrated research potentials. Consequently, impacts to any of these sites would need to be mitigated. Consultation with the client has identified five such sites: 244-1, -17, -18, -27 and -28. All other sites will be avoided, if the proposed project is conducted.

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APPENDIX A: HOMESTAKE MINING SITE COORDINATES

244-1	N 1557160 E 483190
	N 1557180 E 483420
	N 1556830 E 483550
	N 1556970 E 483750
244-2	N 1558570 E 482640
	N 1558450 E 482900
	N 1558650 E 482900
	N 1558530 E 483190
244-3	N 1558550 E 484250
	N 1558590 E 484380
	N 1558470 E 484500
	N 1558540 E 484480
244-4	N 1558340 E 481720
	N 1558590 E 482140
	N 1558470 E 482180
244-5	N 1556020 E 480440
244-6	N 1558340 E 483740
244-7	N 1558090 E 484120
244-8	N 1557390 E 483890
	N 1557250 E 484560
	N 1557840 E 484110
244-9	N 1558160 E 482560
244-10	N 1557270 E 480720
244-11	N 1557670 E 481200
244-12	N 1557790 E 481380
244-13	N 1556940 E 480270
244-14	N 1556770 E 480710
244-15	N 1557150 E 481130
244-16	N 1556740 E 480840
244-17	N 1557100 E 482180
244-18	N 1556920 E 482240
244-19	N 1555910 E 480040
244-20	N 1555230 E 480450
	N 1554860 E 480530
	N 1554930 E 480780
	N 1554980 E 480620
244-21	N 1554630 E 480680
244-22	N 1553060 E 482940
	N 1553100 E 484320
	N 1554150 E 483070
	N 1554020 E 483670
244-23	N 1555000 E 481400
	N 1553180 E 482740
	N 1553420 E 483230
244-24	N 1553720 E 481950
244-25	N 1553880 E 481700
244-26	N 1555360 E 481170
244-27	N 1556380 E 483330
244-28	N 1554920 E 482810
244-29	N 1552980 E 484080
244-30	N 1554410 E 484680
244-31	N 1554950 E 485330
244-32	N 1551730 E 488150
	N 1551730 E 488270
	N 1551680 E 488210
	N 1551790 E 488210
244-33	N 1549170 E 490280
	N 1549170 E 490440
	N 1549110 E 490360
	N 1549240 E 490360