

MUSEUM OF NEW MEXICO
OFFICE OF ARCHAEOLOGICAL STUDIES

**DISPOSITION OF HUMAN REMAINS FROM LA 59497, ALONG
STATE ROAD 264, MCKINLEY COUNTY, NEW MEXICO**

**Linda Mick-O'Hara
and Stephen S. Post**

Submitted by
David A. Phillips, Jr., Ph.D.
Principal Investigator

ARCHAEOLOGY NOTES NO. 39

SANTA FE

1991

NEW MEXICO

ADMINISTRATIVE SUMMARY

In May of 1988, the Office of Archaeological Studies, Museum of New Mexico, excavated a portion of LA 59497, an archaeological site partly within the right-of-way of the proposed widening project for State Road 264 in McKinley County, New Mexico. During the excavation, human remains were recovered from prehistoric contexts. This report details the excavation, laboratory analysis, and reburial methods. Locational information (for Navajo Historic Preservation Department use only) is contained in Appendix 1.

MNM Project No. 41.401
NMSHTD Project No. F-036-1(2)/ST-F-0361(202)
Navajo Nation Antiquities Permit No. 8805

CONTENTS

ADMINISTRATIVE SUMMARY	ii
INTRODUCTION	1
DESCRIPTION OF LA 59497	3
EXCAVATION METHODS AND FIELD DESCRIPTIONS	5
HUMAN REMAINS FROM BURNED DEATH WASH	9
DESCRIPTION OF THE GRAVE OFFERINGS	15
THE REBURIAL PROCESS	19
REFERENCES CITED	21
APPENDIX 1. LOCATIONAL INFORMATION AND SITE FORM	22
APPENDIX 2. HUMANS REMAINS INVENTORY	25

Figures

1. Project area map	2
2. Site map, LA 59497	4
3. Plan view, Feature 2	6
4. Plan view, Feature 5	6
5. Plan view, Feature 4	7
6a) Feature 5, burial; male with evidence of evulsion of maxillary incisors; (b) Feature 2, burial; female with perforation at the parietal, occipital juncture; (c) apparent impact mark on adult male orbital, Feature 4, Individual 4; (d) apparent impact marks on adult male cranial fragments, Feature 4, Individual 3	11
7. Double-cylinder jar, Feature 5	16
8. Partial canteen, Feature 5	17

INTRODUCTION

In May 1988, archaeologists from the Office of Archaeological Studies (formerly the Research Section, Laboratory of Anthropology), Museum of New Mexico excavated part of an archaeological site, LA 59497, within the proposed widening for State Road 264, McKinley County, New Mexico (Fig. 1). Excavations were conducted according to a data recovery plan written by Stephen S. Post (1987). In the course of the excavation, human remains from archaeological contexts were recovered. The remains were in the path of the proposed widening and could not be avoided. The human remains were excavated and taken to the Office of Archaeological Studies, in Santa Fe for analysis and temporary storage.

After completion of laboratory identification and analyses, the Office of Archaeological Studies consulted with the Navajo Nation Historic Preservation Department concerning reburial of the human remains and associated grave offerings. Following the Navajo Nation Historic Preservation Department recommendation, arrangements were made to re-inter the remains and grave offerings in backhoe excavated pits, within the existing highway right-of-way, and at least 30 m (100 ft) from the surface site boundary.

On May 6, 1991, Office of Archaeological Studies archaeologists Stephen S. Post and Linda Mick-O'Hara met with Iris Begaye, Navajo Nation Historic Preservation Department, and David Baca of Diamond Trenching in Gallup, New Mexico to complete the reburial process. The reburial process, after one false start and a short misunderstanding with the land lessees, was completed by 3:30 p.m.

The reburial locations and legal descriptions are presented in Appendix 1 (this information is being provided only to the Navajo Nation Preservation Department). This report details the initial excavation of the human remains, the laboratory analysis inventory and results, and a description of the reburial process.

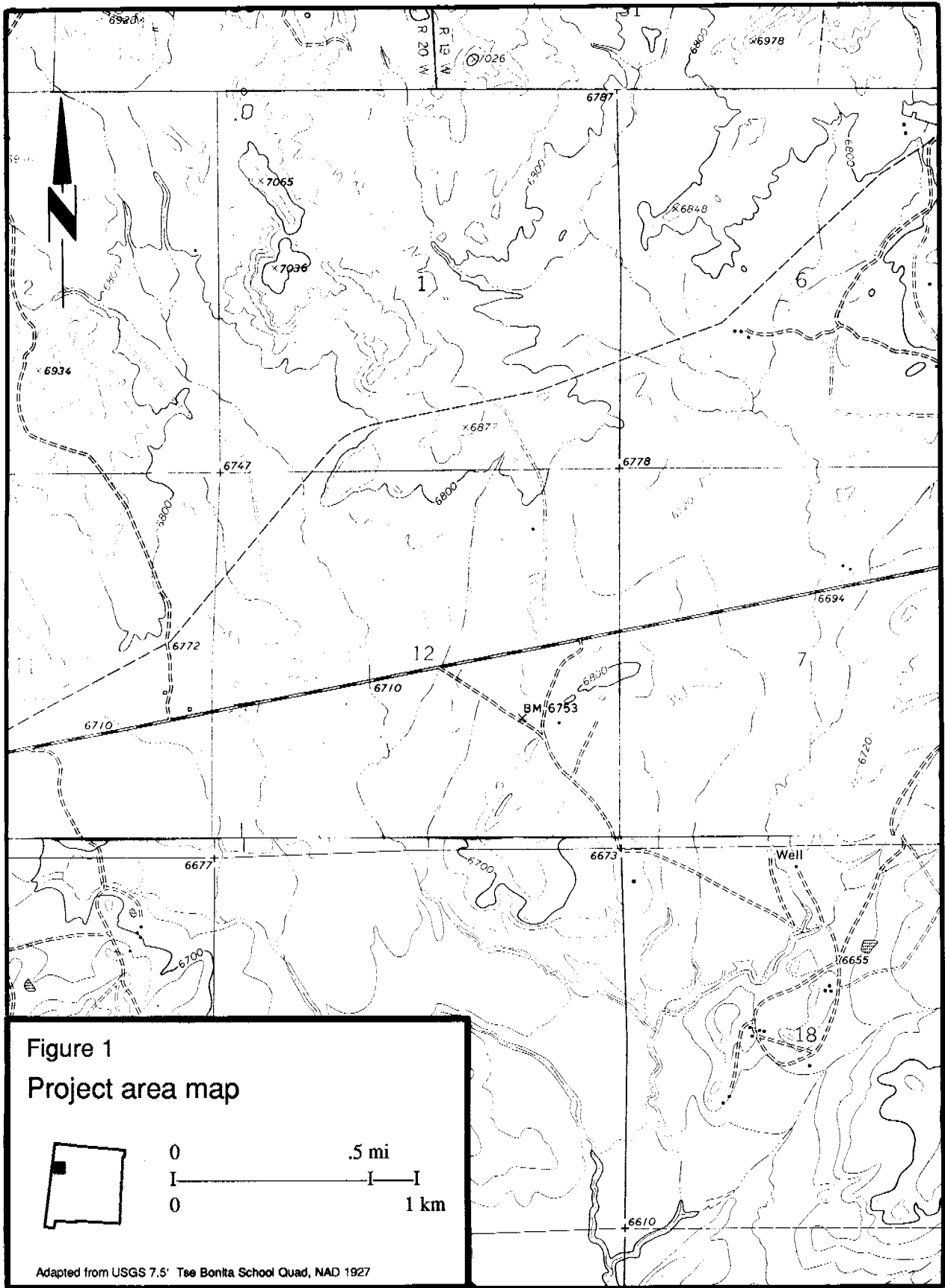


Figure 1
Project area map



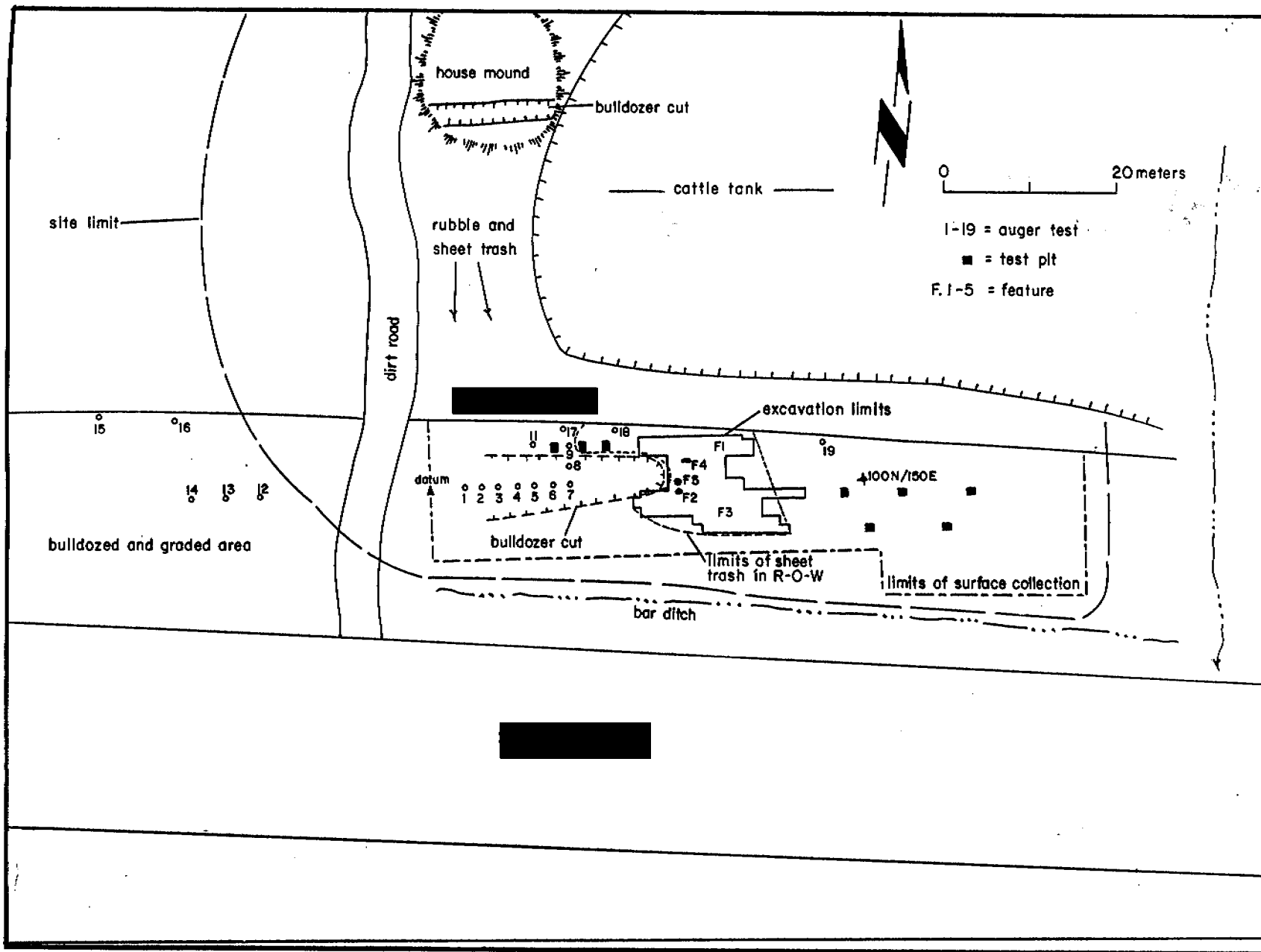
Adapted from USGS 7.5' Tee Bonita School Quad, NAD 1927

DESCRIPTION OF LA 59497

LA 59497 is [REDACTED]. It is a prehistoric Anasazi pueblo house mound with an associated midden (Fig. 2). The house mound and most of the midden [REDACTED]. The distinct portion of the house mound is 14 m in diameter and 1 m high in the center. Sandstone rubble extends 7 m to the south and [REDACTED] of the house mound. The site was probably occupied between A.D. 1050 and 1100, based on associated ceramic types.

The rubble mound includes large tabular sandstone slabs and blocks and small sandstone chinking. The large amount of chinking suggests that it was used extensively in wall construction. The house mound is bisected by a 2 m wide bulldozer cut. The east portion of the mound has been removed by the excavation of a large stock pond. The trash midden covers a 300 sq m area in which the surface artifact density is about 100 per sq m. A more diffuse scatter covers the remainder of the site area.

The site area within the right-of-way consisted of a small portion of the midden and a light scatter of artifacts in disturbed areas. Figure 1 shows the location of the bulldozer cuts and where soil was redeposited. Surface artifacts in the right-of-way numbered between 100 and 200. Most showed up at the edge of bulldozer cuts and in other disturbed areas.



4

Figure 2. Site map, LA 59497.

EXCAVATION METHODS AND FIELD DESCRIPTIONS

Each human burial was assigned a feature number and excavated as a unit. The remains were gradually exposed, revealing the method of interment, condition of the remains, post-depositional processes that affected the condition of the remains, and presence of burial goods and their spatial relationship to the human remains. The remains were drawn, profiled, described, and photographed. Drawings and written description included orientation, condition, burial position, character of the feature fill, and a running inventory of skeletal elements. Photographs were taken, but the film was not loaded properly. This was not discovered until after the remains were removed and the excavation completed. Flotation and pollen samples were collected from the skull and pelvic contexts of the two nearly complete burials. The remains were removed with like elements wrapped together in acid free tissue paper and placed in a box for temporary storage.

Excavation Descriptions

Feature 2 was a woman was buried in a flexed position within the sheet trash deposit in Grids 99N/129 and 99N/130E (Fig. 3). The skull was encountered very close to the modern ground surface (in Grid 99N/103E), probably because of recent soil removal by heavy equipment. No formal burial pit was defined, but the pit bottom was in contact with the sandstone bedrock. The north half of the burial exhibited a soil change that marked the edge of the blade cut. The feature fill, a brown sand containing artifacts and charcoal flecks, was similar to Stratum 4, the primary cultural level in the site defined by excavation. The excavated depth of the burial area was 27 cm, although the prehistoric burial pit was probably originally deeper. Excavation exposed the top of the skull at Stratum 4, Level 1, which was the modern ground surface in 99N/130E. Pollen samples were collected from under the skull and within the pelvic area.

Feature 4 was the incomplete remains of four human skeletons. They were recovered from Grids 104N/128E and 104N/129E from the surface and Stratum 4 (Fig. 4). This feature was in the bladed portion of the excavation area. No evidence of a burial pit could be found. A pollen sample was collected from under the sacrum that was undisturbed.

Feature 5 was a nearly complete human skeleton interred in an oblong pit. It was in Grids 100N/129E and 101N/129E. The pit was excavated into Strata 4 and 5 with sandstone bedrock at the bottom of the pit (Fig. 5). The burial pit measured 80 cm north to south by 100 cm east to west and 18 cm deep. This burial, like the other two, was shallow. A Gallup Black-on-white canteen fragment was encountered first and then the rims of a double-cylinder jar. Further excavation revealed the top of a human skull. The skeleton had flexed legs with the torso supine. The orientation was east to west. The hands appear to be raised to the face, although only one finger from the left

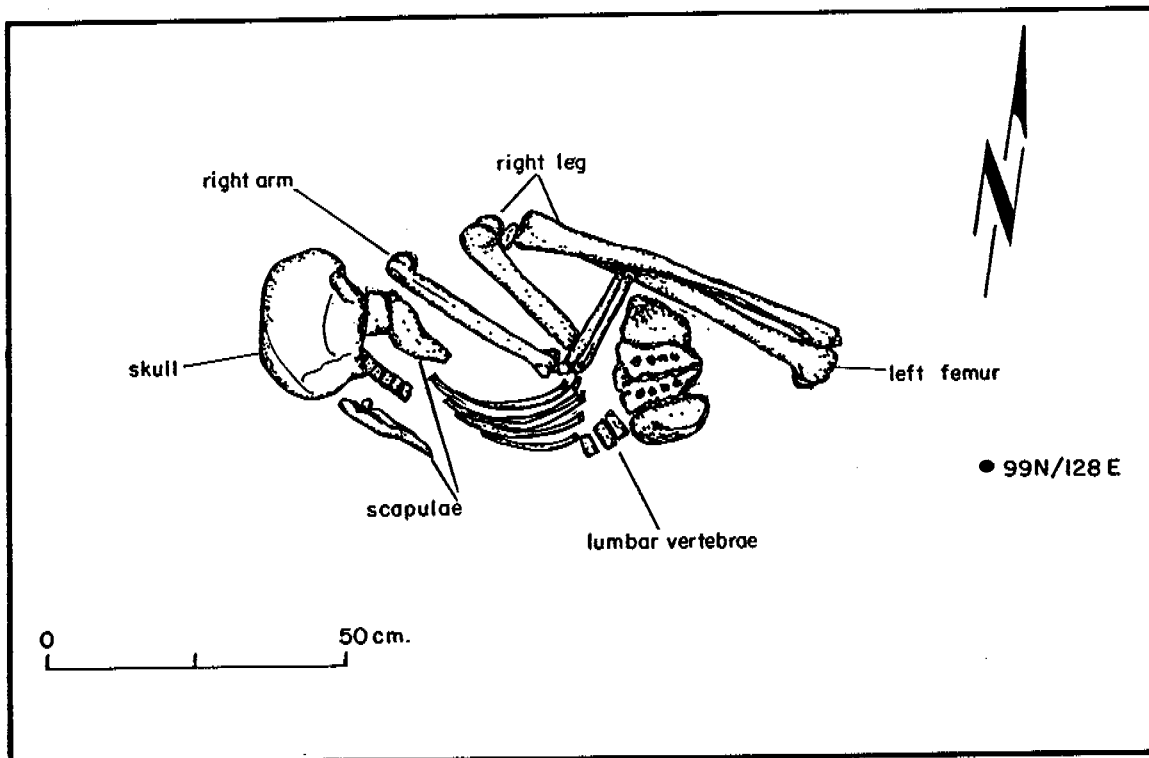


Figure 3. Plan view, Feature 2 (actual remains are more complete than sketch map indicates).

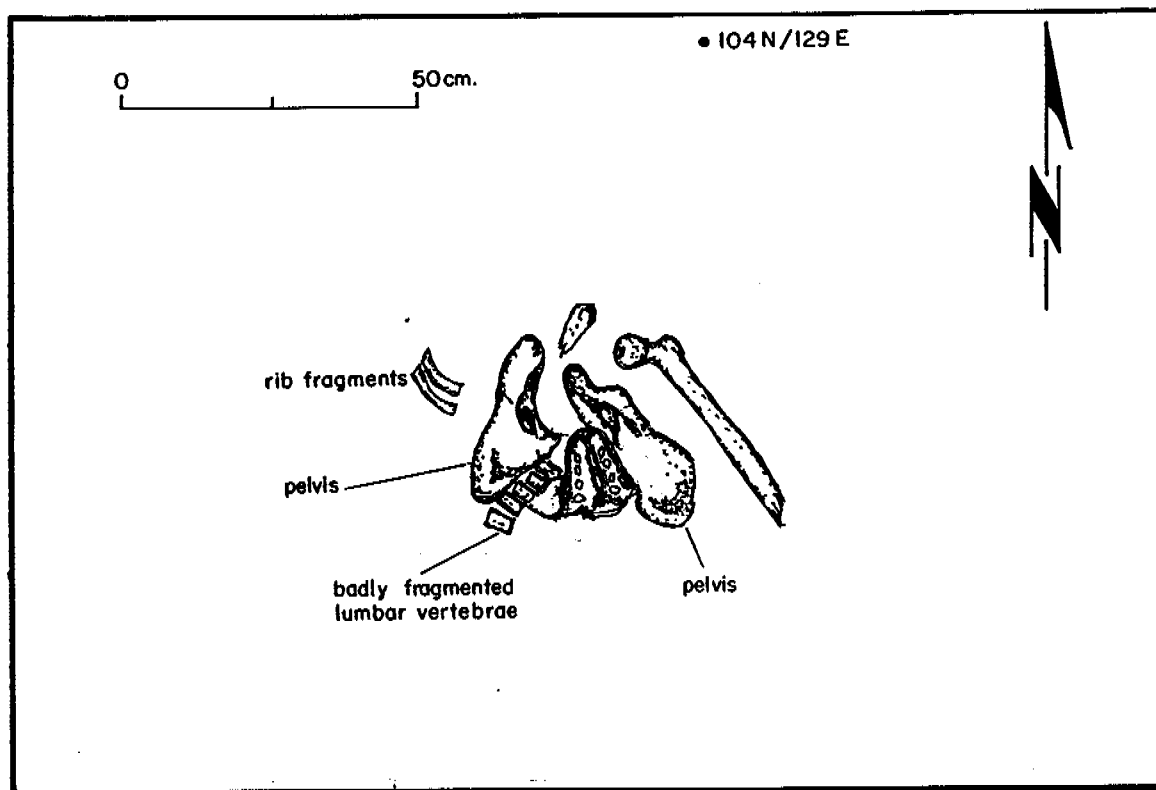


Figure 4. Plan view, Feature 5.

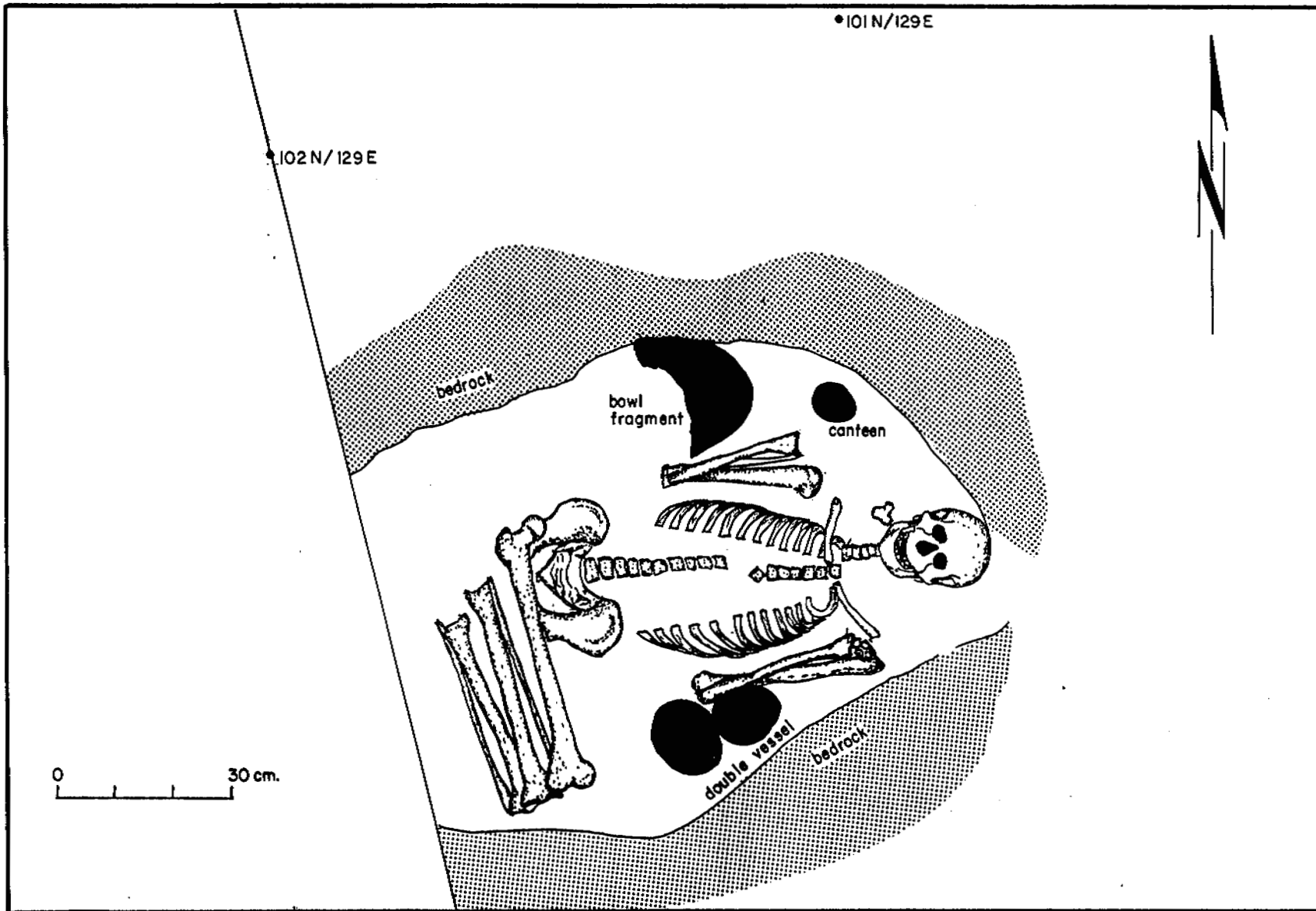


Figure 5. Plan view, Feature 4.

hand was recovered. On the left side of the burial was a double-cylinder jar having both Gallup and Puerco design styles. To the right of the skeleton was a large body sherd from a Puerco Black-on-white olla. It is likely that the canteen was also part of the grave assemblage. Flotation samples were collected from within the double-cylinder jar. Pollen samples were collected from under and within the jar, from under the skull, and from under the Puerco Black-on-white olla fragment.

HUMAN REMAINS FROM BURNED DEATH WASH

Human remains were excavated from three proveniences at LA 59497. These remains include two burials and a group of fragmented remains representing four other individuals. The fragmentary group of remains had been disturbed by earlier earth-moving activities. All remains were discovered close to the current ground surface and had been disturbed to varying degrees by root action and drainage patterns.

This report summarizes the findings from the analysis of these remains. In the following sections, the term "impact mark" refers to a blow to a particular bone that resulted in the splitting of that element along the plane of the blow. This is a descriptive term based on actual observations and no direct inferences will be made regarding the source of the mark. A full inventory of the human materials found at this site is included as Appendix 2. A set of laboratory photographs and the negatives are being submitted to the Navajo Nation Historic Preservation Department. An additional set of prints will be included in the Archaeological Records Management System files, New Mexico Historic Preservation Division, in Santa Fe.

All of the remains recovered were cleaned by dry brushing the specimens prior to analysis. Each element was inventoried separately and all possible measurements were taken following the guidelines set by Bass (1987). All elements were analyzed for apparent anomalies, pathologies, and appropriate elements were used to estimate sex, age, and stature. All stature estimates were made using the formulas developed by Genoves (1967).

Feature 2

Field Specimen (FS) No. 404, Feature 2, was the remains of an adult female approximately 23 years of age. Stature estimates were done on both the left femur and left tibia (see Appendix 2). The left femur estimate places this individual at 5 ft 1 in (154.9 cm) and is the most accurate estimate of her height (Genoves 1967). An impact that perforated the skull in a triangular pattern at the parietal/lambdoidal/occipital juncture was perimortem in nature and is inferred to be the probable cause of death (Fig. 6b).

This female was found lying in a fully flexed position on her left side facing south. She was located in a midden area, but there was no apparent burial pit and no associated burial goods. Earlier earth-moving activities may have obscured any pit boundaries, making them indistinguishable from the surrounding matrix. Rodent activity was evident, causing the displacement of some bones and the absence of others. Ground drainage patterns had affected the left side of the burial so that some of these bones were eroded, fragmentary, or missing. The right foot was absent and had probably been moved by the earlier road grading. This individual's spine had been twisted either during burial or after burial from ground pressure so that her pelvis was located under her sacrum.

The burial consisted of the cranium with part of the right parietal and occipital missing and the left maxilla eroded with teeth present; the mandible fractured near the midline with the left half heavily eroded; all cervical vertebrae; 11 thoracic vertebrae; 3 lumbar vertebrae; a complete sacrum; a sternal fragment; partial right and left scapulae; both clavicles; 12 right and 11 left ribs; a complete right and eroded left humerus; fragmentary right and left radii; mostly complete, but broken right and left ulnae; a fragmentary right and nearly complete left innominate; eroded right and left femora; a nearly complete right and left tibiae; partial right and complete left fibulae; complete right and left patellae; a partial right hand with the left hand represented by three metacarpals; and both right and left tarsals with no metatarsals or phalanges present.

There were no osteologically apparent pathologies and the only observable impact was to the parietal area of the cranium.

Feature 5

FS No. 405, Feature 5, consisted of the remains of an adult male approximately 22 years of age. Stature estimates from the left femur indicate a height of approximately 5 ft 4 in (162.6 cm). This individual had a small and crowded maxilla and mandible with several dental anomalies including rotated right maxillary first and second premolars and impacted mandibular third molars. His central maxillary incisors, left central mandibular incisor, and right first premolar appeared to have been extracted near the time of death (Fig. 6a). The extraction of teeth in deceased individuals was noted by Turner and Morris (1970) during their analysis of the fragmentary remains from Awatobi, but reports of extractions are presently rare in the literature. No osteologically observable pathologies were present.

This individual was interred in a pit within the midden area. The remains were discovered just below the present ground surface. He was supine in a semiflexed position with his knees flexed to the south, his head extended to the east, and his arms bent toward his head. This individual was buried with a canteen, a double-cylinder jar, and the base of a large olla. There was extensive rodent activity in the area: his manubrium was located by his jaw, the rest of his sternum was isolated by his left humerus; all of the hand bones found had been displaced. Preservation varied from good to poor with root activity and erosion varying from bone to bone but increasing toward the feet with only a few bones remaining intact in that area.

The burial consisted of the cranium with the posterior parietals and most of the occipital missing; a complete mandible; all cervical vertebrae; all thoracic vertebrae, eroded; all lumbar vertebrae, heavily eroded; part of the first and second sacral vertebrae; right and left scapulae, heavily eroded; right and left clavicles, complete; 10 right and 10 left ribs, broken and eroded; right and left humeri, broken and eroded; right and left radii, eroded; right and left ulnae, eroded; right and left innominates present but fragmentary and heavily eroded; right and left femora, complete with slight erosion; right and left tibiae, complete with slight erosion; right and left fibulae, complete. Bones

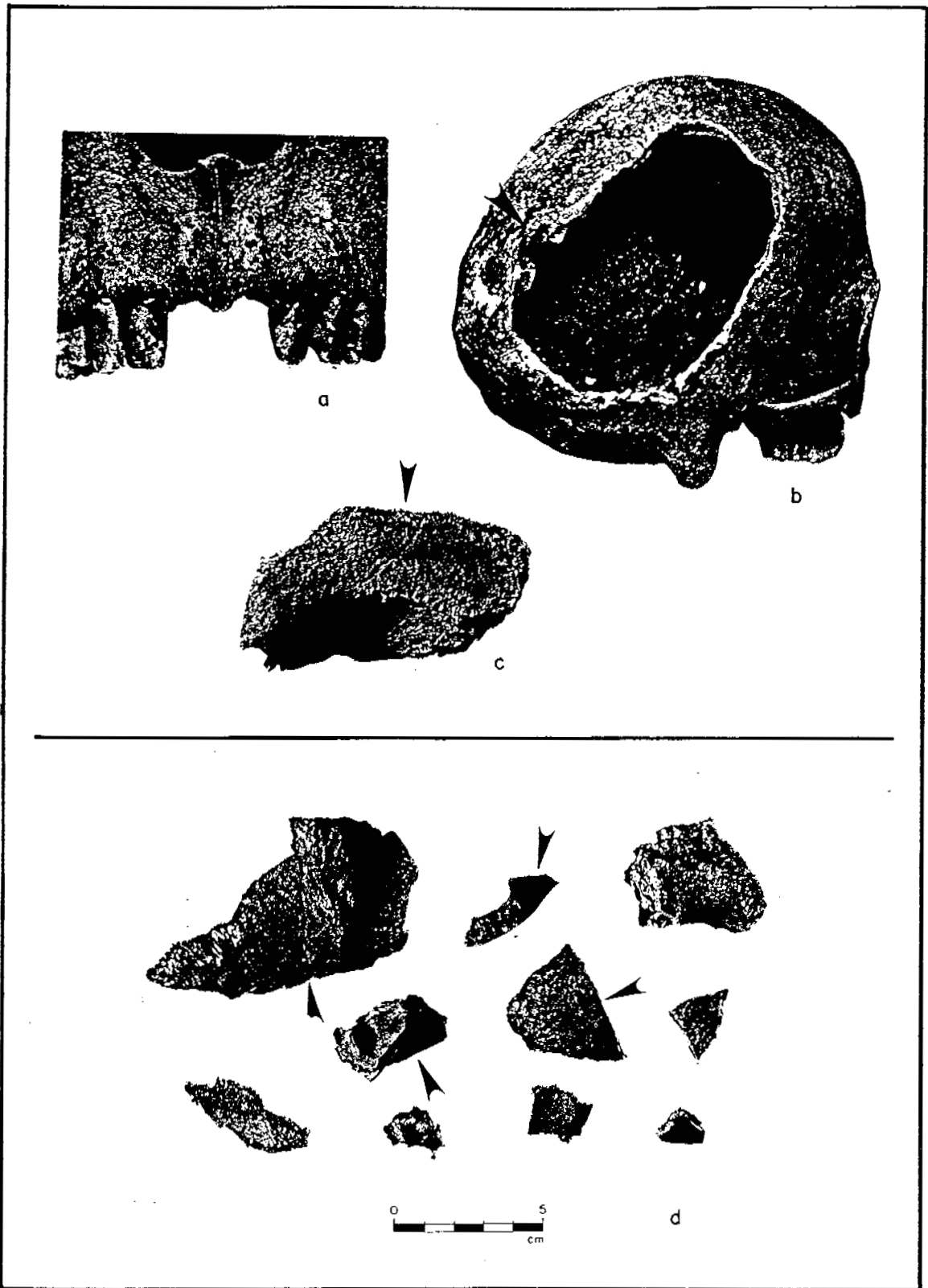


Figure 6. (a) Feature 5; male with evidence of evulsion of maxillary incisors; (b) Feature 2; female with perforation at the parietal, occipital juncture; (c) Feature 4, Individual 4; apparent impact mark on adult male orbital; (d) Feature 4, Individual 3, adult male cranial fragments; arrows indicate apparent impacts to skull.

of the hand include right carpals, two metacarpals, and one phalange; and the bones of the feet include right and left tarsals, two left metatarsals, and two unsided phalanges.

Feature 4

FS No. 331, Feature 4, consists of the partial remains of four individuals. All remains were recovered from a midden area just below ground surface. The partial remains of these individuals were presumed, during excavation, to be a single partial burial that had been disturbed by previous earth moving in the area. Analysis of these remains, however, confirmed that several individuals were represented. No formal burial pit was noted during excavation and some remains were recovered from areas outside the main concentration due to the disturbance previously mentioned.

The bones from this locality exhibit some evidence of perimortem impact as noted by Nickens (1975) and White (1989) for allegedly cannibalized individuals from Mancos Canyon. The identified impact marks affect the more robust aspects of the skull and do not appear to be functionally related to fleshing or crushing of the cranium. These probable impact marks will be noted while discussing each individual.

Individual No. 1 is an adult female approximately 39 to 44 years of age. This individual is the most intact found in this cluster; predominantly axial and lower limb bones remain. Orientation of the remains would suggest that the individual was positioned on her back with her legs flexed to her chest and her head toward the east. Rodent activity repositioned some of this individual's remains and aided in mixing them with the remains of three other individuals.

The bones that were assigned to this burial were for the most part articulated or positioned near their anatomically correct locations. The elements that were present and could be included with this burial are the vertebral arches of all five lumbar vertebrae for which the centrums were indeterminate fragments; a sacrum with a partial first sacral vertebra, eroded with some arthritic deformation; six right and six left rib fragments, two of which appear to have been split along an oblique plane, however the reason for this is indeterminate; a left distal radius with canid bite marks and gnawing; a right fragmentary innominate and a left fairly complete innominate; a right proximal femur; a right partial patella; one first phalange from a hand; and approximately 75 indeterminate fragments.

Individual No. 2 is an adult female approximately 23 years of age. The remains of this individual were intermixed with the remains of Individual No. 1. Approximate age and sex determination were made on the basis of the sacral fragment present.

The elements that could be assigned to this individual include two dorsal fragments from a lumbar vertebra; a fragmented third sacral vertebra; seven rib fragments; and an unsided partially fused iliac crest. No impact marks or fractures were noted on these remains. Inferences regarding perimortem or postmortem treatment can not be made due to their fragmentary nature.

Individual No. 3 is an adult male of indeterminate age. This individual is represented by cranial fragments. Sex was determined from the size of the mastoid. The cranial fragments include a left mastoid; the left zygomatic and anterior temporal;

and eight left parietal and occipital fragments. Three fragments could be conjoined and some fragments display what appear to be impact fractures along thicker aspects of the bone table. These impact fractures form straight lines sometimes lipping in or out and do not appear to be related to post-depositional processes or impact fractures associated with secondary burial (Fig. 6d). Nickens (1975) noted a predominance of cranial fragments in the allegedly cannibalized remains from Mancos Canyon and White's (1989) reanalysis supported this observation.

Individual No. 4 is a probable adult male. Sex was determined by the bluntness of the superior border of the orbital but no age determination was possible. This individual may be part of No. 3 but the distinct weathering pattern of these fragments suggested that its separation was warranted. The fragments assigned to this individual include a left superior orbital; five other cranial fragments that could not be refitted; and two long bone fragments. All of the bone was weathered white and flaking. The orbital fragment exhibits edges that appear to have been impacted and severed across a thick tissue table (Fig. 6c). Turner (1989) observed impact marks on the thicker aspects of the cranial fragments he analyzed as possible evidence for inferred patterns of cannibalism.

Summary

The human remains from LA 59497 provide data by which a number of interesting questions might be developed, but they provide very few answers. The two single interments are of prime age individuals. The female displays a fracture consistent with death by a blow to the back of the head. Cause of death for the male is unknown. His dental anomalies and the extraction of some teeth near the time of his death might have something to do with his demise, but this is speculation at best. The fact that he was buried with funerary objects would suggest that he had some degree of status within the community.

The group of fragmentary remains adds significantly to these questions. The partial burial of an older woman in the community associated, at least physically, with fragments from a younger female and two mature males may be partially the result of post-depositional disturbance, but the articulation of the remains of the older female would suggest that the remains were, at least in part, in or near their original depositional location.

The death of the female and the splitting noted on the cranial fragments are consistent with the inference that violent events took place at this site. The connection between these events is unknown as well as their connection with the male burial. The remains discovered at LA 59497 add to a body of data from the Four Corners area that suggests the Puebloan II and III periods were, at times, subject to episodes of violence.

DESCRIPTION OF THE GRAVE OFFERINGS

One whole and two partial vessels were recovered from Feature 5. The presence of these offerings is curious because the other nearby burial had no nonperishable grave offerings. The most interesting find is a double-cylinder jar. Cylinder jars have primarily been identified from excavations at Chaco Canyon (Toll 1990).

The dual-cylinder jar consists of two upright cylinders attached to one another at the base by a wide clay strap. The exterior of each cylinder is decorated. The cylinders will be referred to as A (solid design) and B (hatched design). Figure 7 shows front and top views of the vessel.

Cylinder A is 14 cm high, with an 11.5 to 11.9 cm interior diameter at the mouth, and 6.8 cm in diameter at the base. The vessel walls are 0.6 cm thick. The interior is smoothed, but twelve individual coils are still visible.

Cylinder B is 14.5 cm high, 11.5 to 11.9 cm in interior diameter at the mouth, and 6.3 cm in the interior diameter at the base. The vessel walls are between 0.6 and 0.7 cm thick. The interior has been smoothed with twelve coils still visible.

Both cylinders were fired in a reducing atmosphere. Fireclouds are visible on the exterior of both cylinders and on the interior of Cylinder B. The exterior surface color is light gray and is covered with a light, streaky slip that has been lightly polished. Both cylinders have rounded rims that are slightly pinched and smoothed. Four holes were punched from the inside out and are basically equidistant around the perimeter just below the rim. These holes were either for suspension or cover attachment.

The vessels are joined at the base by a pinched strap of clay. The strap is 5 cm long, 4.3 cm tall, and is pinched to 1 cm wide at the top. It is smoothed and lacks slip or polish.

The descriptive term, "cylinder jar," may not be appropriate because the two vessels are wider at the top than at the bottom and therefore do not form perfect cylinders. In fact, the upper 3.7 cm of each cylinder is slightly flared. Toll (1990) questions whether this is a "true" cylinder jar because it is shorter than the other cylinder jars found at Chaco Canyon. It approximates the cylinder form, but its poor surface finish and decorative rendering mark it as a "poor quality" imitation. The height of the cylinders is similar to a beaker, which is short and squat. However, a double beaker would have been nonfunctional, as the form would be very difficult for pouring liquids.

The cylinders are decorated with mineral paint. The designs on both vessels are difficult to describe because they lack symmetry and the layout is inconsistent. Interestingly, the design elements represent the two main design styles found in the LA 59497 assemblage and throughout the Cibola region between A.D. 1050 and 1100--the Gallup and Puerco styles. These design styles are common on the same vessel, but are

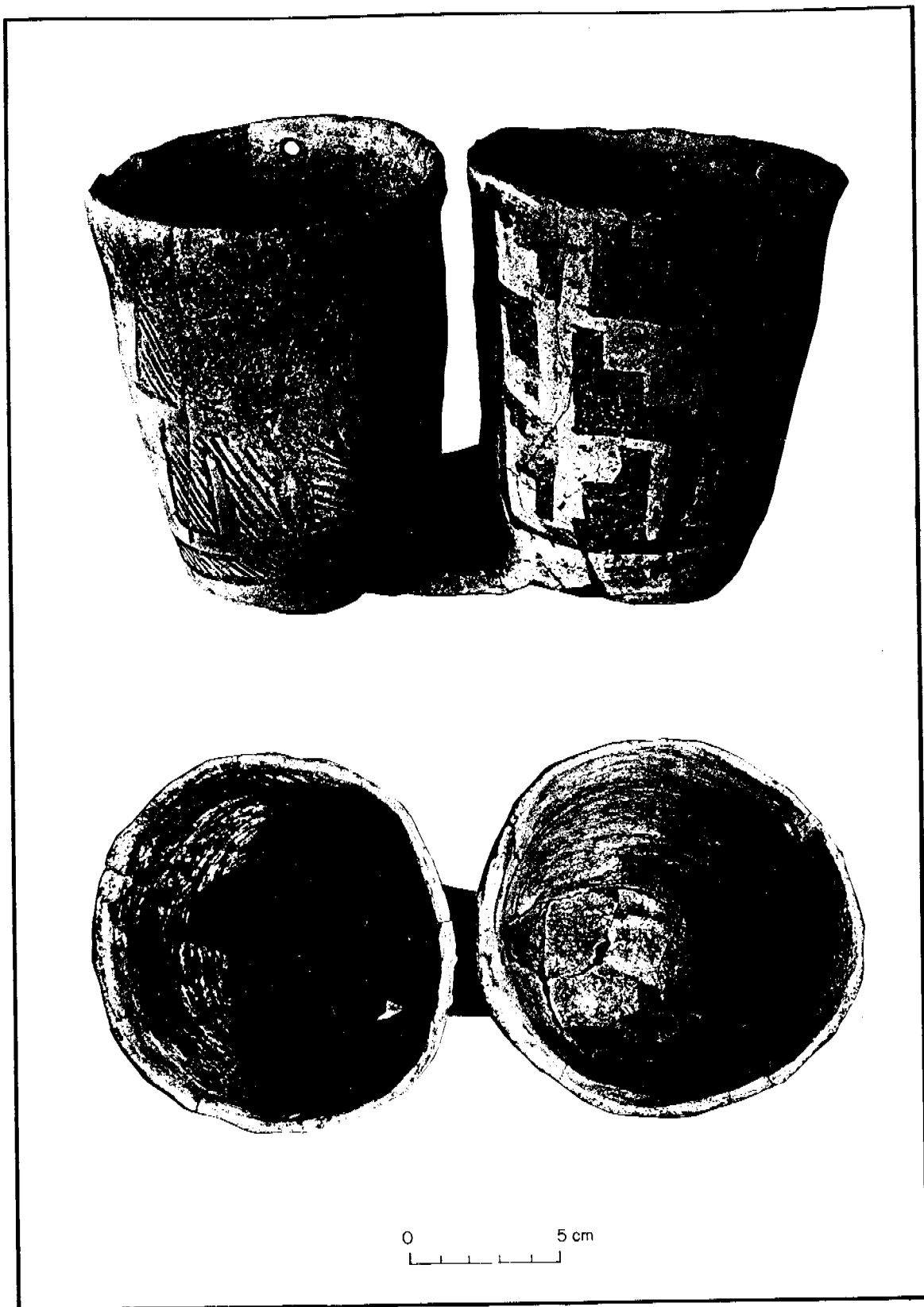


Figure 7. Double-cylinder jar, Feature 5.

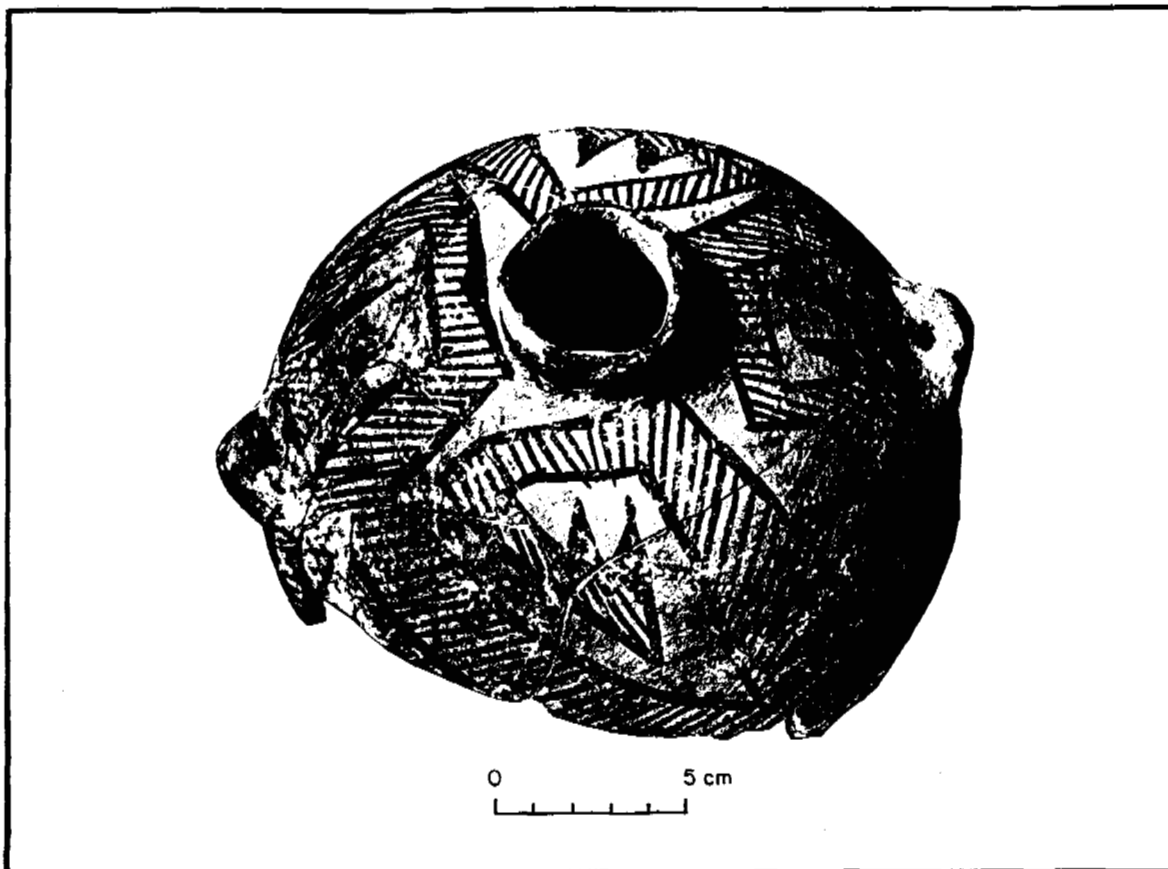


Figure 8. Partial canteen, Feature 5.

rare on separate, but attached, vessels. The conscious separation of the two styles on a single vessel may have more meaning when the context of the vessel and the implication for social status of the individual are considered.

It is interesting that this vessel occurred with a young man, rather than an older, more venerated individual. The separation of the solid and hachured layouts suggests a duality that cannot be fully appreciated by studying individual sherds or even individual vessels with a single style represented. The solid and hachure design styles are probably not indicative of cultural identity, but instead may be symbolic of belief systems that dictated their infrequent combined use (Reserve Black-on-white excepted), common use on separate vessels, and separately on a double vessel very rarely. The ideological significance of these two common design styles has not been addressed to date.

A case for the study of symbols of duality in prehistoric belief systems cannot be made from a single vessel, but I think that understanding design styles and their relationship to human behavior may be better served by the idiosyncratic artifacts that come our way, and less from the daily wares.

The upper two-thirds of a canteen fragment was recovered from above the skull in Feature 5. It was found while surface stripping, and it was the first indication of Feature 5. It is shown in Figure 8.

The canteen measures 13.0 cm high (projected), 11.6 cm in diameter, and the opening is 2.4 cm in diameter. The shape is spherical; the lower half is globular and the upper half more rounded. It is equipped with opposed single strap lugs and punched holes. The exterior finish is smoothed and a mottled gray. Though well smoothed, the exterior is not slipped or polished. The interior is smoothed by hand and the color is light gray. It has crushed sherd temper in medium abundance, with a half and half, light gray and gray core.

The design style is Dogoszhi or Gallup. The framing line widths are greater than the hatched line widths, which fits the Gallup "B" style. The overall layout is a continuous pattern of repeated scrolls with the tips filled in. The distance between hatched lines is irregular and the lines are wobbly and irregular.

An olla fragment was at the right edge of the burial pit, next to the right arm. It was placed upright. A 25 to 30 cm interior diameter can be estimated from the fragment. The exterior has a crackled slip with a light and spotty polish. The interior is well smoothed, probably with a pottery scraper. The core exterior is very light gray and the interior is gray. It is sherd- and sand-tempered, with temper present in medium abundance.

A ghost of a solid broad line is present. The fragment can be typed as Puerco Black-on-white. No detailed description is possible because so little of the vessel remains.

THE REBURIAL PROCESS

The reburial process was completed in compliance with Navajo Nation regulations. Clarification and consultation was provided by the Navajo Nation Historic Preservation Department.

The permanent site datum established at the conclusion of the 1988 excavation was relocated. Using the site map, a reburial location was selected 30 m (100 ft) outside of the site boundary as defined by the surface artifact scatter within the northern right-of-way. A trench line was flagged and three locations were marked for the reburial of the two almost complete individuals and the four partial individuals. These points were recorded on the site map with a transit and stadia rod. Unfortunately, a natural sandstone outcrop was 1.3 m below the ground surface. The outcrop halted excavation in this initial area.

A second location was selected across the highway from the site, within the southern right-of-way. The southern right-of-way shoulder was south sloping, so a 1.8 m (6 ft) reburial depth was used to forestall re-exposure of the remains by erosion or right-of-way maintenance. Again, a trench line was flagged and transit-recorded. Backhoe excavation proceeded smoothly and a depth ranging from 1.7 m to 2.5 m was attained before hitting any hard-rock outcrops. Because excavating a long trench 1.8 m (6 ft) deep and 0.9 m (3 ft) wide was too time consuming, the reburial pit was modified into a square pit 1.68 m north to south by 1.62 m east to west and 1.8 m deep. The upper 60 cm of fill was removed 60 to 100 cm back from the pit edge to reduce wall stress and the potential for a cave-in.

When the backhoe had cleaned out as much as possible, the pit floor was scraped clean with flat shovels, providing a level surface for rearticulation of the remains. Feature 5 was rearticulated in the southwest corner of the pit. Feature 2 was rearticulated in the northwest corner of the pit. The pelvis and femur from Feature 4 were placed along the east edge of the pit in the center, and the remaining partial remains were placed on either side of Feature 4, along the east wall.

All remains were rearticulated and oriented in their original direction if it was known. The grave offerings from Feature 5 were placed in their original position relative to the skeleton. A sketch map was drawn and photographs were taken by Iris Begaye of the Navajo Nation Historic Preservation Department. The head and feet positions of Features 2 and 5 were transit mapped, and a single point was recorded for the partial remains.

The pit perimeters were transit mapped. Then, the burials were hand-covered, and the pit backfilled with the backhoe. The right-of-way was returned as close as possible to its pre-excavation condition.

The reburial location and mapping data are in Appendix 1. This information will be disseminated to the New Mexico State Highway and Transportation Department by the Navajo Nation Historic Preservation Department following the receipt of this report.

REFERENCES CITED

- Bass, William M.
1987 *Human Osteology: A Laboratory and Field Manual*. Third edition. Missouri Archaeological Society, Inc.
- Brothwell, D.R.
1981 *Digging up Bones*. Cornell University Press, New York.
- Genoves, S.
1967 Proportionality of the Long Bones and their Relation to Stature among Mesoamericans. *American Journal of Physical Anthropology* 26:67-78.
- Nickens, Paul R.
1975 Prehistoric Cannibalism in the Mancos Canyon, Southwestern Colorado. *The Kiva* 40(4):283-293.
- Post, Stephen S.
1987 *Testing Results and Research Design for Three Sites Along State Road 264, McKinley County, New Mexico*. Laboratory of Anthropology Notes No. 349. Museum of New Mexico, Santa Fe.
- Toll, H. Wolcott III
1990 A Reassessment of Chaco Cylinder Jars. In *Clues to the Past: Papers in Honor of William M. Sundt*, edited by M. S. Duran and D. T. Kirkpatrick, pp. 273-301. The Archaeological Society of New Mexico 16. Albuquerque.
- Turner, Christy G., II
1989 Teec Nos Pos: More Possible Cannibalism in Northeastern Arizona. *The Kiva* 54(2):147-152.
- Turner, Christy G., II and Nancy T. Morris
1970 A Massacre at Hopi. *American Antiquity* 55(3):320-331.
- White, Tim
1989 Mancos: Prehistoric Cannibalism in the American Southwest. Manuscript under review.

APPENDIX 2

OFFICE OF ARCHAEOLOGICAL STUDIES
Human Remains Inventory Form

Project No.: 41.401
Project Name: Burned Death Wash
Site No.: LA 59497
Site Name:
Field Specimen No.: 404
Provenience:
Feature: 2, Burial

Inventoried: one adult female approximately 23 yrs of age

Sex Estimation: Female

1. Brow ridge - very slight
2. Upper edge of orbital - intermediate
3. Posterior zygomatic - extended crest
4. Mastoid processes - large
5. Occipital muscle ridges - prominent
6. Chin - square
7. Pelvis - sciatic notch intermediate
8. Pelvis - sacroiliac joint male
9. Pelvis - subpubic angle - narrow
10. Sacrum - flat - female

Age Estimate:

1. Occlusal wear pattern on upper right maxillary dentition - 25-35 years
2. Pubic symphysis (III-1, Brothwell 1981:69, fig. 3.7) - 23 years
3. Sacrum - fused with fissures present between first two vertebral bodies.

Racial Estimate: Mongoloid (Native American)

Incisors slightly shoveled
Inferior zygomatic projection
Nasal bone projection

Cranium

Craniometrics-

Max. cranial length: 167.5 mm
Max. cranial breadth: 140.0 mm
Basion-bregma ht: 131.0 mm
Minimum frontal breadth: 91.0 mm
Upper facial ht: 78.0 mm
Nasal ht: 44.9 mm
Nasal breadth: 21.3 mm
Bizygomatic breadth (facial width): not possible
Orbital ht: 31.0 mm
Orbital width: 39.5 mm

Cranial Inventory-

(Unhealed perforation at the right parietal, lambdoidal suture line near the sagittal suture that was partially obliterated by the missing right parietal and occipital fragments. The perforation evidence is generally triangular in form and measured approximately 7 mm in width. (Probable cause of death.)

The cranium exhibits slight flattening in the posterior parietal/occipital region (cradle board deformation). The posterior right parietal and upper right occipital are missing. The left zygomatic and maxilla are also fragmented with all teeth and maxillary fragments present. The sutures are partially obliterated on the endocranial aspect.

Mandible-

Mandible broken transversely at the left lateral incisor. The left mandibular canine and 1st premolar are dislodged but present. The lateral incisors exhibit some shoveling. The left half of the mandible is heavily weathered. Both condyles and the left coronoid process are missing. Symphysis ht: 32.5 mm; Ascending ramus ht: 60.2 mm. No other measurements possible.

Vertebrae-

Cervical-

All seven are present, in excellent condition, and exhibit complete fusion.

Thoracic-

Numbers 1 through 11 are present, in excellent condition, and exhibit complete fusion. Centroms have some resorption of the compact tissue table.

Lumbar-

Numbers 3, 4, and 5 are present, in excellent condition, and fully fused. All centroms display some resorption of the compact tissue table.

Sacrum-

Complete (no coccygeal vertebrae), 2 through 5 fused with fissures between 2 and 3, and 3 and 4 still present. Sacral breadth: 114.0 mm; Sacral ht: 119.0 mm; Sacral Index: 95.8 mm

Age estimate: approximately 25 years

Sternum-

Superior fragment of the corpus sterni present.

Scapula-

Right: Vertebral border eroded away, fully fused.

Left: Slight plate erosion, completely fused.

LA 59497 FS # 404

L scapula breadth: 97.0 mm; L scapula length: 135.0 mm
L glenoid cavity length: 31.0 mm
Scapular Index: 71.8 mm

Clavicle-

Right: Sternal epiphysis unfused, ends slightly eroded.
Left: Sternal epiphysis unfused, ends slightly eroded.
Age estimate: 23 years

Rib-

Right: 12 present; 9 ribs are complete and in excellent condition. Three (3) are slightly eroded and fragmentary.
Left: 11 present; all with fragmented ventral ends and slight to moderate erosion.

Humerus-

Right: complete, excellent condition, both epiphyses fused, line present around proximal.
Length: 30.9 cm.
Max. diameter shaft: 2.5 cm. Min. diameter shaft: 1.5 cm
Max. diameter of head: 3.5 cm
Least circumference: 5.5 cm
Left: complete with damage to proximal lateral epiphysis. Element displays moderate erosion at epiphyses and midshaft.
Length: 29.9 cm
Max. diameter shaft: 2.1 cm. Min. diameter shaft: 1.6 cm
Max. diameter of head: 3.5 cm
Least circumference: 5.5 cm
Age Estimate: 23-25 years
Sex Estimate: Humeral head-female

Radius-

Right: Distal end missing, excellent condition, proximal epiphysis fused with line present.
No length possible.
Left: Fragmentary distal and shaft + proximal fragments. Distal epiphysis fused with line present.
No length possible.

Ulna-

Right: Distal end missing, proximal epiphysis completely fused. The bone is in excellent condition.
Max. length: (est.) 25.0 cm.
Left: Complete but broken and slightly eroded proximal end. Both epiphyses fused distal epiphysis with line present.
Max. length: 25.2 cm.
Least circumference: 3.0 cm.

LA 59497 FS# 404

Innominate-

Right: Fragment of pubis and ilium only.

Left: Damage to inferior ilium, nearly complete.

Union of the iliac and ischial epiphyses nearly complete.

Age Estimate: 22-24 years

Femur-

Right:

Femur head broken off but present. Distal end eroded with partial epiphysis present.

Circumference: 7.1 cm. Length: (est.) 42.0 cm

Vertical dia. femur head: 3.8 cm

Ant/post. dia.: 2.5 cm. Mediolat. dia.: 2.1 cm

Left: Complete, eroded slightly at epiphyseal junctures, lines still present.

Circumference: 7.2 cm. Length: 41.9 cm.

Vertical dia. femur head: 3.65 cm.

Ant/post. dia.: 2.6 cm. Medilat. dia.: 2.1 cm.

Bicondylar width: 6.8 cm.

Sex Estimate: Vert. diameter of femur head - female

Stature Estimate: $2.59(41.9 \text{ cm}) + 49.742 \pm 3.816$

mean = $158.26 \text{ cm} - 2.5 \text{ cm} = 155.76 \text{ cm} = 61.32 \text{ in} = 5 \text{ ft } 1 \text{ in}$

Tibia-

Right: Damage to both proximal and distal ends but nearly complete with proximal epiphysis separated but present. Both epiphyses are completely fused.

Circumference: 8.7 cm. Length: (est.) 36.0 cm.

Ant/post. dia.: 3.2 cm. Mediolat. dia.: 2.1 cm.

Left: Complete with slight damage to the proximal end. Epiphyses are completely fused with no line.

Circumference: 8.5 cm. Length: 36.6 cm.

Ant/post. dia.: 3.2 cm. Mediolat. dia.: 2.1 cm.

Age Estimate: 23 years

Sex Estimate: Circumference at foramen - female

Stature Estimate: $2.72(36.6 \text{ cm}) + 63.781 \pm 3.513$

mean = $163.33 \text{ cm} - 2.5 \text{ cm} = 160.83 = 63.32 \text{ in} = 5 \text{ ft } 3 \text{ in}$

Fibula-

Right: Shaft only, both ends missing.

Left: Complete, good condition with ends slightly eroded. Both epiphyses are completely fused.

Length: 34.4 cm.

Age Estimate: 22+ years

Patella-

Right and left: Complete

Bones of the Hand-

Carpals-

Right and left: lunate

Right: navicular (partial)

Right: 1 through 5 metacarpals with 1 and 5 being partial

Left: 3, 4, and 5 metacarpal; 5 is just a fragment.

5 1st phalanges

2 2nd phalanges

Bones of the Feet-

Right and left: talus

Right and left: calcaneus

Right: cuboid

Right: navicular

Left: 2nd cuneiform

Left: 3rd cuneiform

35 fragments from disintegrated innominate and ribs that were not clearly identifiable.

OFFICE OF ARCHAEOLOGICAL STUDIES
Human Remains Inventory Form

Project No.: 41.401
Project Name: Burned Death Wash
Site No.: LA 59497
Site Name:
Field Specimen No.: 405
Provenience:
Feature: 5, Burial

Inventoried: one adult male approximately 22 yrs of age

Sex Estimation: Male

1. Brow ridge - slight but present
2. Upper edge of orbital - blunt
3. Posterior zygomatic - extended crest
4. Mastoid processes - large
5. Frontal sinuses - large
6. Chin - square
7. Pelvis - sciatic notch narrow
8. Pelvis - sacroiliac joint male
9. Pelvis - subpubic angle - narrow

Age Estimate:

1. Mandibular 3rd molars both impacted and not erupted; slight polish on right 3rd molar cusp; 17-25 yrs
2. Maxillary wear pattern 2nd stage (25-35 yrs) but anomalous due to bite problems.
3. Medial epiphysis of both clavicles unfused; 22 yrs
4. Tibial and femoral epiphyses fully fused.

Racial Estimate: Mongoloid (Native American)

Incisors slightly shoveled
Inferior zygomatic projection
Nasal bone projection

Cranium -

Craniometrics-

Max. cranial length: (est.) 155 mm
Max. cranial breadth: 148 mm
Basion-bregma ht: 131.0 mm
Minimum frontal breadth: 91.0 mm
Upper facial ht: 78.0 mm
Nasal ht: 44.9 mm
Nasal breadth: 21.3 mm
Bizygomatic breadth (facial width): not possible

LA 59497 FS# 405

Orbital ht: 31.0 mm
Orbital width: 39.5 mm

Cranial Inventory-

Posterior parietals and most of occipital missing. There are numerous fragments of the posterior skull present but they could not be refitted. The parietal regions still intact, suggest some cradle board deformation. The sphenoid and condyles are broken off but present. All sutures are fused with some obliteration endocranially.

The maxilla and palatine area of this individual is unusually small and crowded. The palatine region is more concave due to this crowding, which has also produced dental anomalies. All teeth are permanent and fully erupted but very crowded. This crowding has produced a rotation of the 1st and 2nd premolars on the right side of the palate, so that these teeth are positioned on a buccal/lingual plane. The dental wear pattern is anomalous due to this crowding with both maxillary M1s exhibiting extreme wear on the lingual aspect. The central incisors of this individual appear to have been extracted at or near the time of death; there is no apparent tissue resorption. The posterior skull was eroded but the anterior is in excellent condition.

Palate length: internal - 46.5 mm; external - 54.0 mm
Palate breadth: internal - 42.5 mm; external - 64.0 mm

Mandible-

The mandible is small and wide with crowded dentition. The 3rd molars are impacted and unerupted with a small amount of polish on the posterior cusp of the right 3rd molar. The left central incisor and the right 1st premolar appear to have been extracted near the time of death; again there is a lack of any tissue resorption. The mandible as a whole is in excellent condition.

Bicondylar breadth: 12.1 cm; Bigonial breadth: 10.1 cm
Symphysis ht: 3.5 cm

Vertebrae-

Cervical: All 7 present, spinal processes eroded. Vertebral arch on #6 is broken off but present. No lipping is evident.

Thoracic: All 12 are present but heavily eroded. Most of the vertebral arches are eroded or absent.

Lumbar: All 5 are present but heavily eroded. Only centrums with partial transverse processes remain.

Sacrum: Only part of the 1st and 2nd sacral vertebrae are present and no measurements were possible. Coccygeal vertebrae are completely absent.

Scapula-

Right and left are present. Most of the body and vertebral border of both are eroded away. No measurements of length or breadth were possible.

LA 59497 FS# 405

Right Glenoid cavity length: 39.0 cm. (Male)

Clavicle-

Right and left are complete.

Both are in excellent condition; sternal epiphyses are unfused.

Rib-

Right: 10 present; 7 are fairly complete, 3 are shaft only.

Left: 10 present; 7 are complete but broken and eroded, 3 are shaft only.

Humerus-

Right: The proximal head is eroded and separated; distal is also eroded. Both ends were fused completely. Length was not possible.

Max. dia.: 2.0 cm. Min. dia.: 1.6 cm.

Max. dia. of head: 4.0 cm.

Left: The distal end is eroded and broken; proximal end is fused with line present. The entire bone is slightly eroded with some purple staining on the shaft.

Max. dia.: 1.8 cm. Min. dia.: 1.4 cm.

Max. dia. of head: 4.1 cm.

Radius-

Right: Complete, fused both ends with line present on distal; ends are eroded.

Max. length: 24.1 cm.

Left: Complete, fused both ends with heavily eroded epiphyses.

Max. length: 24.1 cm.

Ulna-

Right: Complete, both epiphyses fused with line present; distal end slightly eroded.

Max. length: 25.8 cm.

Left: Complete, both epiphyses fused with line present; erosion at both ends.

Max. length: 25.7 cm.

Innominate-

Right: Eroded anterior and iliac spine with slight red staining in spots (root concentrations).

Age Estimate:

Iliac crest not fully fused - 21-22 yrs

Pubic symphysis - 20-21 yrs.

Max. length: 23.5 cm. Max. breadth: not possible

Left: The element is heavily eroded with approximately 50% of the ilium missing. A few of the ilium fragments are present but could not be refitted.

No measurements were possible.

LA 59497 FS# 405

Femur-

Right: Complete with slight to moderate erosion. Epiphyses are fully fused; femur head still has line present. Root staining present on shaft.

Circumference: 8.1 cm. Length: 44.4 cm.

Max. dia. head: 4.3 cm.

Ant./post. dia.: 2.7 cm. Mediolat. dia.: 2.6 cm.

Left: Complete with damaged and heavily eroded ends. Heavily root stained.

Circumference: 8.1 cm. Length: 44.8 cm.

Max. dia. head: 4.3 cm.

Ant./post. dia.: 2.6 cm. Mediolat. dia.: 2.5 cm.

Stature Estimate: $2.59(44.8 \text{ cm}) + 49.742 \pm 3.816$

mean = $165.77 \text{ cm} - 2.5 \text{ cm} = 163.27 = 64.28 \text{ in} = 5 \text{ ft } 4 \text{ in}$

Patellae: absent

Tibia-

Right: Complete, fused both ends with proximal slightly eroded; purple to black root staining.

Circumference: 8.5 cm. Length: 38.2 cm.

Ant./post dia.: 3.25 cm. Mediolat. dia.: 2.1 cm.

Left: Complete, fused both ends with proximal end slightly eroded; purple to black root staining on shaft.

Circumference: 8.6 cm. Length: 38.4 cm.

Ant./post dia.: 3.3 cm. Mediolat. dia.: 2.2 cm.

Age Estimate: Complete epiphyseal union - Approx. 23 years

Stature Estimate: $2.72(38.2 \text{ cm}) + 63.781 \pm 3.513$

mean = $167.68 \text{ cm} - 2.5 \text{ cm} = 165.185 = 65.03 \text{ in} = 5 \text{ ft } 5 \text{ in}$

Fibula-

Right: Complete with both epiphyses fused, all slightly eroded.

Length: 36.8 cm.

Left: Complete with both epiphyses fused and heavily eroded.

Length: Not possible

Bones of the Hand:

Right: carpals - navicular, lunate, multangular, lesser multangular, and capitate; all moderately eroded.

1st metacarpal fragment

2nd metacarpal

Unsided - 1st phalange, digit one.

Bones of the Foot:

Right and left - talus

LA 59497 FS #405

Right and left - calcaneus
Left - navicular
Left - 1st cuneiform
Left - 3rd metatarsal
Left - 4th metatarsal
Unsided - 1 1st phalange
Unsided - 1 2nd phalange

OFFICE OF ARCHAEOLOGICAL STUDIES
Human Remains Inventory Form

Project No.: 41.401
Project Name: Burned Death Wash
Site No.: LA 59497
Site Name:
Field Specimen No.: 331
Provenience:
Feature: 4, Burials

Inventoried: Individual #1 - adult female approximately 39-44 yrs of age

Vertebrae-

Lumbar: Fragments of the vertebral arches of all 5 with centrums occurring as unidentifiable fragments.

Sacrum: Vertebrae 2 through 5 and part of one are present. Element heavily eroded. There is a moderate amount of arthritic deformation on the dorsal aspect. No measurements are possible.

Rib-

Right: 6 rib fragments eroded and broken.

Left: 2 ribs broken but almost complete.

2 rib fragments.

2 rib fragments that appear to have been split along an oblique plane.

Radius-

Left: Distal posterior fragment with fully fused epiphysis. Evident canid bite marks and gnawing.

Innominate-

Right: Fragmentary ilium and acetabulum with partial ischium; no evident pathologies.

Left: Fairly complete, pubis fragmented but present; epiphyses are completely fused.

Max. length: 23.5 cm. Max. breadth: 14.1 cm.

Age Estimate: pubic symphysis - 39-44 years

Femur-

Right: Proximal end and diaphysis present with part of distal end. Completely fused with no obvious pathologies.

Ant./post dia.: 2.2 cm. Mediolat. dia.: 2.5 cm.

Vertical dia. of femur head: 4.1 cm. (female)

Patella-

Right: Medial aspect present; heavily eroded.

LA 59497 FS# 331

Bones of the Hand-

1st phalange- complete, not sided

Unidentified fragments -

Most of these are from the vertebral centrums and ribs. Approx. 75.

Inventoried: Individual #2 - adult female approximately 23 years of age.

Vertebrae-

Lumbar: Spinal process fragment and a vertebral arch fragment that could not be refitted.

Sacrum: The ventral aspect of the 3rd sacral vertebra plus part of the dorsal aspect that is heavily eroded and stained purple. The ventral portion is very flat (female) and exhibits evidence of fusion (approx. age 23).

Rib-

7 shaft fragments, all heavily eroded.

Innominate-

Not sided - Iliac crest fragment fused with line present.

Inventoried: Individual #3 - adult male (no age possible)

Cranial Fragments-

Left mastoid - large (male) with impact fractures at the superior border.

Left zygomatic and anterior temporal fragments which exhibit evidence of splitting.

Left parietal and occipital fragments (8) - three of these were conjoinable and appear to have been split above the occipital protuberance. Three of the other fragments also display evidence of perimortem splitting.

Inventoried: Individual #4 - probable male (no age possible)

Cranial fragments-

Left: Superior orbital which is weathered white and eroded. The superior border is blunt (male). The lateral fracture line is very straight and appears to have been produced by a splitting of the bone across a thick tissue table.

5 cranial fragments, weathered white that could not be refitted.

2 long bone fragments, weathered white.