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Archeological Testing within the Right-of-Way of FM 1929, at Site 41CN218, Coleman County, and in the Vicinity of Site Complex 41CC48/49/50/51 and Site 41CC52, and Site 41CC246, Concho County, Texas

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Archeological Testing within the Right-of-Way of FM 1929, at Site 41CN218, Coleman County, and in the Vicinity of Site Complex 41CC48/49/50/51 and Site 41CC52, and Site 41CC246, Concho County, Texas

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ARCHEOLOGICAL TESTING WITHIN THE RIGHT-OF-WAY OF FM 1929,
AT SITE 41CN218, COLEMAN COUNTY, AND IN THE VICINITY OF SITE COMPLEX
41CC48/49/50/51 AND SITE 41CC52, AND SITE 41CC246, CONCHO COUNTY, TEXAS.

G. R. Dennis Price and A. Joachim McGraw

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Texas
State Department of Highways and Public Transportation
Highway Design Division
Austin, Texas

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ABSTRACT/MANAGEMENT SUMMARY

The State Department of Highways and Public Transportation (SDHPT) conducted archaeological testing within the right-of-way of FM 1929 at site 41CN218 in Coleman County, and in the vicinity of site complex 41CC48/49/50/51 and 41CC52 in Concho County. Intensive surface survey and mapping was also undertaken at site 41CC246 in Concho County. This report details the work undertaken, and summarizes the cultural sequence of the area.

Excavations at site 41CN218 did not reveal any evidence of discrete cultural stratigraphy. Rather it appeared that artifacts were scattered throughout an upper brownish soil horizon, which in places reached depths of about 2 meters. The only feature tentatively recognized consisted of a limestone hearth. This was not associated with any diagnostic artifacts, identifiable cultural living surface, or any ash or charcoal. None of the artifacts recovered from the excavations were temporally or culturally diagnostic. For the most part, artifacts consisted of lithic debitage, with a few utilized flakes, one uniface, and two very small biface fragments. The nature of the debitage suggests that lithic activities were largely confined to final tool manufacture, at least within that part of the site tested. The utilized flakes suggest that scraping, cutting, and perhaps graving or piercing activities took place on the site. Faunal remains consisted of a few small fragments of fossilized bone which could not be directly associated with cultural remains, and highly weathered fragments of mussel shell. The nature of the recovered remains is not conducive to the identification of specific activity areas, or other horizontal cultural patterning. Gross artifact counts indicate a higher density of artifacts along the western margin of the right-of-way. However, it was obvious from surface inspection of the area that the right-of-way crossed the eastern margin of the site, and that artifacts appeared with considerably greater frequency to the west of the right-of-way. On the basis of the excavations conducted, it is believed that those portions of the site within the highway right-of-way are not worthy of designation as a State Archeological Landmark.

Excavations within the FM 1929 right-of-way in the vicinity of site complex 41CC48/49/50/51 and site 41CC52 failed to reveal any buried cultural materials, cultural features, or other evidence of buried cultural strata. Surface examination revealed a few scattered non-diagnostic cultural artifacts, but all were in plow-disturbed deposits. It is, therefore, believed that those portions of the sites within the highway right-of-way are not worthy of designation as a State Archeological Landmark.

Survey within the FM 1929 right-of-way at site 41CC246 revealed that the area was extremely eroded. Although the investigations were primarily concerned with the historic component, scattered prehistoric lithic debitage, none diagnostic, was observed on the surface. This sparse scatter extended into site 41CC52, with no apparent discontinuity. Site mapping indicated that the concentration of rock and rubble associated with a house foundation was essentially outside the right-of-way, as was the accompanying sheet scatter of historic artifacts. Given the eroded nature of the area, the lack of intact features within the right-of-way, and previous impacts, it is believed that those portions of the site within the highway right-of-way are not worthy of designation as a State Archeological Landmark.

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SECTION 1 - INTRODUCTION AND BACKGROUND

INTRODUCTION

The State Department of Highways and Public Transportation (SDHPT) conducted archaeological testing at site 41CN218 in Coleman County, and site complex 41CC48/49/50/51 and 41CC52 in Concho County. Intensive surface survey and mapping was also undertaken at site 41CC246 in Concho County. The sites were originally recorded during cultural resources surveys carried out as part of the environmental requirements for Stacy Reservoir, recently renamed the Simon W. Freese Dam and O. H. Ivie Reservoir. Although the sites were not directly impacted by that project, they will be impacted by construction of state-funded highway FM 1929 (replacing highway FM 2134, which will be inundated by the reservoir). Thus, testing was undertaken prior to highway construction in accord with a Memorandum of Understanding between the SDHPT and the Texas Antiquities Commission.

Significance testing at site 41CN218 was conducted during December 1990 and February 1991, under the supervision of G. R. Dennis Price, with field crews supplied by Brownwood District 23 and San Angelo District 7. A total of 190 man-hours was spent on hand excavation and recording, and a total of six hours was spent on machine excavation.

Significance testing at site complex 41CC48/49/50/51 and 41CC52, and the surface survey and mapping at site 41CC246 was conducted in 1989, under the supervision of A. Joachim McGraw, with field crews supplied by San Angelo District 7. A total of 144 man-hours was spent on excavation and recording in the vicinity of sites 41CC48/49/50/51 and 41CC52, and a total of 48 man-hours was spent on surface survey and mapping at site 41CC246.

The report has been arranged in a series of sections that is, hopefully, both useful and logical to the reader. Following the introduction in this section are brief descriptions, applicable to all sites, of the general environmental setting of the area, previous cultural research, and the prehistoric cultural sequence as we presently understand it. Individual sections for each site, or complex, then follow in which all site-specific information (setting, investigations, features, artifacts, etc.) is addressed, with a brief discussion. Finally, all references used in the body of the report are fully cited.

ENVIRONMENTAL SETTING

The sites tested are located on either side of the Colorado River, just downstream from the Stacy Reservoir Dam (Simon W. Freese Dam), in west central Texas (Figure 1-1). This is an area of "generally rolling hills cut by a moderately wide valley bounded in places by gently sloping margins and in others by steep bluffs" (Collins et al. 1988:2).

In the vicinity of the tested sites, the Colorado River cuts through Permian, Elm Creek Formation deposits (Bureau of Economic Geology 1976). The upper part of the Elm Creek Formation consists mostly of clayey, yellow and gray shale with discontinuous light gray limestone units, which increase toward the base. The lower part of the Elm Creek Formation is mostly light gray to medium gray lime-

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stone in thin to thick beds. East of the river is a bluff, which rises some 60 to 70 feet above the river to an elevation of approximately 1500 feet above the National Geodetic Vertical Datum (NGVD). Exposed in the bluff face are limestone strata of the Elm Creek Formation. Site 41CN218 is located on the top of this bluff. West of the river, the topography is more gentle, with fairly level, Quaternary fluvial terrace deposits adjacent to the river. Site complex 41CC48/49/50/51 and 41CC52 is located on these terrace deposits. Beyond the terrace deposits, terrain slopes up relatively gently across geologic deposits of the Permian, Elm Creek Formation and the overlying Permian, Jagger Bend, and Valera Formations to an elevation of approximately 1600 feet NGVD. Site 41CC52 is located on the Elm Creek Formation deposits; and site 41CC246 is located on the Jagger Bend and Valera Formations, which are composed of limestones and shales, with the upper part consisting mostly of shales, and the lower part consisting mostly of limestones.

Present-day climate of the area is transitional between the humid climate of east Texas and the semi-arid climate to the west and northwest (USDA-SCS 1974: 67). Average annual precipitation is 27.04 inches, with virtually all occurring as rain, though an insignificant amount may occur as sleet or light snow during winter months. Greatest rainfall occurs between April and June, with next greatest rainfall in September and October. Evaporation from historically created area lakes has been measured at an average of 66 inches, while "Class-A pan evaporation" averages 95 inches per year. Thus, within the historic era, the availability of water has been a limiting factor to human utilization of the area; and the same was probably also true of the prehistoric era. Paleo-environmental information for the immediate area is sparse, and indications of paleo-climate must be inferred from surrounding, somewhat distant locations. In general, it appears that the early Holocene was marked by a gradual drying trend, which culminated in an extremely dry period in the mid-Holocene. The late Holocene is believed to have had a moister climate, similar to that of today, but with a moister interval about 2500 years ago (Collins et al. 1988:7).

Vegetation of the area today is largely of the grassland-savannah type which consists of tall- and mid-grasses with a considerable amount of mesquite and juniper, and shrubs such as yucca, acacia, prickly pear, etc. Trees, such as black willow, American elm, and sugar hackberry, may be found adjacent to perennial watercourses, and pecans may be present on well-drained floodplains. Early historic accounts of vegetation in the area indicate that mesquite is an invader species, and that prior to historic times the area was probably more prairie-like, with more grasses and less brush (both mesquite and juniper). There is little evidence of prehistoric flora of the immediate area (Collins et al. 1988:16-17).

Present day mammalian fauna of the area includes: white-tailed deer, black-tailed jack rabbit, and various mice. Badger, black-tailed prairie dog, opossum, fox squirrel, and eastern cottontail may also be present. Avifauna includes: turkey, wood duck, and great blue heron adjacent to water; and scaled quail and bobwhite on the uplands. Reptiles probably include turtles in, and adjacent to, the Colorado River, as well as numerous species of snake, including: prairie rattlesnake, western diamondback rattlesnake, western hognose, western coachwhip, racers, ratsnakes, bullsnakes, etc. Lizards are also probably common. Fish and mussels also live in the Colorado River. Prehistoric fauna probably included: bison, black bear, antelope, prairie chicken, passenger pigeon, coyote, wolf, and bobcat (Espey, Huston & Associates Inc. 1981a).

PREVIOUS AREA RESEARCH

Previous research within a 10-mile diameter of the site has been confined almost entirely to work associated with the Stacy Reservoir. Initial cultural resources survey work in Stacy Reservoir was conducted by Espey, Huston and Associates Inc. (1981a, 1981b, 1981c). This work was confined to project impact areas below the 1,551.5 foot contour elevation. A total of 431 sites was recorded (327 prehistoric, 62 historic, and 42 with both prehistoric and historic components), providing "ample evidence to date human activity along the Colorado River from about 10,000 B.P. through historic times" (Espey, Huston and Associates Inc. 1981a:3-159). Five sites included Paleoindian components, 18 sites included Early Archaic components, 62 sites included Middle Archaic components, 64 sites included Late Archaic components, and 27 sites included Late Prehistoric components. Prehistoric sites generally consisted of accumulations of burned rock, ranging from single hearths to burned rock middens, with or without associated chipped lithics and/or mussel shell. Mussel shell and chipped lithic concentrations without burned rock were also identified. Possible tipi rings were identified at two sites (41CC79 and 41CC128), and 16 possible rock cairns were also identified, with one (41CC167) being excavated. Bedrock mortars were also identified at three sites.

In 1986, Prewitt and Associates, Inc. (Bryan and Collins 1988) surveyed 1,690 acres of proposed recreational areas, above the 1551.5-foot contour line, that were associated with the Stacy Reservoir project. This resulted in the recording of five new sites, four prehistoric sites with burned rocks (one possibly including components ranging from Paleoindian to Late Archaic, one dated to the Middle Archaic, one dated to the general Archaic, and one dated only as Prehistoric) and one historic site. Also, sixteen previously recorded sites were revisited. Geologic examinations were made of eleven localities within the reservoir area and at thirty-four previously recorded sites. The geological investigations, though of a superficial nature, indicated the potential for buried land surfaces and cultural deposits both in alluvial and eolian deposits.

Additional work was conducted at Stacy Reservoir by Prewitt and Associates, Inc. between 1986 and 1988. This included the survey of 2,090 acres within the dam construction zone, resulting in the combination of several previously recorded sites and the identification of an additional thirty sites, 20 with prehistoric components only (1 Paleoindian, 5 Archaic and 1 possibly Neolithic), 5 sites with historic components only, and 5 sites with both prehistoric and historic components. Subsurface reconnaissance for buried sites, using a backhoe, was also conducted within the dam footprint area. Controlled testing was also undertaken at a number of prehistoric sites, as was evaluation and documentation of historic sites. Most of the work was reported by Bailey et al. (1989), the exceptions being testing conducted at sites 41CN74, 41CC46, and 41CC44/45, the results of which were reported by Mariah Associates, Inc. (1990). Prewitt and Associates, Inc. also prepared a comprehensive research design for additional cultural resources work within the reservoir (Collins et al. 1988). This included discussion of the environmental setting, previous cultural resources research and the identification of research questions.

Since 1988, Mariah Associates, Inc. has been conducting required cultural resources investigations within the Stacy Reservoir. Work has included significance testing of 40 prehistoric and 16 historic sites, and data recovery at 8 prehistoric and 9 historic sites. Report preparation is presently in progress.

PREHISTORIC CULTURAL SEQUENCE

The above-described investigations have documented the presence of man in the general area of site 41CN218 throughout the prehistoric era. The following is a very brief summation of the prehistoric cultural sequence, with the major diagnostic indicators. For more detailed information, readers are referred to the more extensive summaries provided in the Stacy Reservoir reports noted above, and to Prewitt's (1981) Cultural Chronology in Central Texas.

Paleoindian Stage (9500 - 6500 B.C.)

The Paleoindian Stage, representing the earliest documented stage of man's presence in the area, traditionally has been viewed as a way of life in which relatively small groups of people subsisted by following, hunting, and living off of large late-Pleistocene mammals such as mammoth and bison. However, more recent thought suggests that such a lifestyle is merely the most evident aspect of a number of subsistence practices that have been preserved for us to identify. Diagnostic artifacts include fluted Clovis and Folsom points, and unfluted Plainview points.

Archaic Stage (6500 B.C.- A.D. 700)

The Archaic Stage is perceived as being based on a subsistence strategy of hunting and gathering, relying on a wider range of resources within more geographically constrained areas than those utilized during the preceding Paleoindian Stage. The population is still believed to have been nomadic, perhaps following a fairly regular route to take maximum advantage of seasonal resources. The Archaic Stage has been divided into three temporal periods - Early, Middle, and Late - which, in other parts of central Texas, have been subdivided into phases. At this time, identification/recognition of specific phases has not been made in the Stacy Reservoir area.

The Early Archaic (6500 - 2600 B.C.) is perceived as a period where widely scattered groups relied more on collecting and gathering than on hunting. A wide range of dart point types has been viewed as evidence of little contact between groups and regions. The earliest diagnostic points of the period (Angostura, Golondrina, Meserve and Scottsbluff, associated with the Circleville Phase, circa 6500 - 5000 B.C.) reflect a continuation of Paleoindian lithic technology. However, subsistence had adapted to exploitation of post-Pleistocene flora and fauna. Diagnostic projectile points, such as Gower, Hoxie and Wells, of the succeeding San Geronimo Phase, circa 5000-4000 B.C., differ markedly in outline from the preceding types, while still retaining a number of the earlier technological attributes. The succeeding Jarrell Phase, circa 4000 - 3000 B.C., is identified archeologically by diagnostic point types such as Andice, Bell, Martindale, and Uvalde. In addition to vegetal resources, mussels were also collected and utilized; limited use of bison has also been documented. The final Early Archaic phase, the Oakalla Phase, circa 3000 - 2600 B.C., is identifiable by diagnostic point types such as triangular Baird and Taylor points. This period also appears to mark the beginnings of burned rock middens, normally associated with the processing of vegetal resources. Mussels were also utilized.

The Middle Archaic (2600 - 300 B.C.) is a period in which the dominant feature is the burned rock midden; usually interpreted as indicative of extensive vegetal food processing. Large numbers of projectile points indicate that hunting was also of probably equal importance, with bison being the main quarry.

The Clear Fork Phase, circa 2600 - 2000 B.C., is identified by diagnostic projectile points such as Nolan and Travis. The diagnostic point type of the succeeding Marshall Ford Phase, circa 2000 - 1400 B.C., is the Bulverde. The Round Rock Phase, circa 1400 - 600 B.C., is identified by the Pedernales point. The Round Rock Phase, and the succeeding San Marcos Phase, circa 600 - 300 B.C., identified by point types Marshall, Williams, and Lange, also rely for subsistence on mussels, perhaps replacing some of the earlier phases' reliance on bison.

The Late Archaic (300 B.C. - A.D. 700) appears to be a period when there was an increasing reliance on vegetal foodstuffs, perhaps the result of decreasing numbers of bison. Mussel collecting was also undertaken, but not apparently on a large scale. Burned rock middens apparently cease to accrete. The Uvalde Phase, circa 300 B.C. - A.D. 200, is identified by point types Castroville, Marcos, and Montell, and possibly Frio and Fairland. The succeeding Twin Sisters Phase, circa A.D. 200 - 550, is recognized by Ensor projectile points and Erath and San Gabriel bifaces. Isolated flexed burials are also known from this phase. The Driftwood Phase, circa A.D. 550 - 700, is recognized by Mahomet projectile points and Hare bifaces. The distribution of these diagnostic types appears to be restricted to the eastern portion of central Texas, and the phase may not be represented in the project area.

Neolithic Stage

The Neolithic Stage (A.D. 700 - 1750) is recognizable by the presence of arrow points, associated with the introduction of the bow and arrow, which replaced the atlatl. Two phases have been identified. The Austin Phase, circa A.D. 700 - 1300, is identified by Scallorn and Granbury arrow points, and Friday bifaces. Flexed, or semi-flexed, burials are known from the period in both cemetery and isolated grave contexts. Some of the burials were cremated prior to interment. Subsistence appears to have remained similar to that of the preceding Late Archaic period, with an apparent concentration on gathering, though the increased presence of deer bones in sites of this phase may indicate a greater reliance on the hunting of deer. The Toyah Phase, circa A.D. 1300 - 1750, is recognized by Perdiz and Clifton arrowpoints, Covington bifaces, four-edged, bevelled bifaces, and undecorated ceramics. Semi-flexed burials occur in both cemeteries and as isolated interments. Perdiz and Clifton arrowpoints frequently found with burials apparently indicate warfare rather than grave goods. Subsistence during this phase appears to differ markedly from that of the preceding phase, with reliance on bison hunting being of equal, or greater importance than collecting/gathering activities. Maize was also used to supplement the diet, but it is not sure whether this was acquired by trade from neighboring groups or grown locally.

SECTION 2 - TESTING AT SITE 41CN218

PREVIOUS SITE INVESTIGATIONS

Site 41CN218 was recorded in 1987 during a survey of the Stacy Reservoir. At that time, the site was reported to consist of a sparse scatter of bifaces, lithic debitage, a non-diagnostic dart point fragment, mussel shells, and some bone, covering an area of 45,000 square meters. No temporally diagnostic artifacts were found. It was thought that "thick eolian soils" had the potential for containing buried cultural materials (Bailey et al. 1989:104). However, the site was considered not significant (Ibid., 202) based on the research goals/research design defined by Collins et al. (1988). Although the site was not officially released to be impacted by construction by the Stacy Reservoir Advisory Council, the site was believed to have been destroyed by construction as of December 31, 1987 (Bailey et al. 1989:202). However, the site is located just downstream from the Stacy Reservoir Dam, and was not impacted by that project. As the eastern limit of the site lies within the right-of-way proposed for state-funded highway FM 1929, significance testing was undertaken prior to highway construction.

SITE SETTING

Site 41CN218 is located on a bluff on the left descending bank of, and overlooking, the Colorado River (Figure 1-1), just downstream from the Stacy Reservoir Dam. The northeastern limit of the site is defined by a draw, created by erosion from an intermittent tributary of the Colorado River, and the southern limit is marked by a steep bluff overlooking the Colorado River. The western limit, and the greater part of the site is beyond the proposed highway right-of-way, which crosses the eastern edge of the site. The site is at an elevation of approximately 1,500 feet NGVD, some 60 to 70 feet above the surface of the adjacent Colorado River (USGS Mustang Creek and Leaday 7.5' topographic quads). The highest portion of the site, at the western right-of-way edge, is at an elevation of 1,510 feet, while the lowest portion, along the eastern margin of the site, is at an elevation of approximately 1,490 feet NGVD (Figure 2-1).

The site was vegetated with cedar, mesquite, prickly pear, yucca, and native range grasses, which yielded generally poor surface visibility. However, the site was reached by a field road that provided both surface and subsurface exposures across the site. The field road approached the site from the northeast, crossed the eastern margin of the site, where it had eroded a deep cut, and upon reaching the bluff edge above the Colorado River, turned west, following the bluff edge.

According to the Geologic Atlas of Texas, Brownwood Sheet (Bureau of Economic Geology 1976), the site is situated on late Pleistocene fluvial deposits which overlie deposits of the Permian Elm Creek Formation. It is likely that the fluvial deposits, which are very sandy, have been subjected to later wind erosion and deposition, with some duning present on the higher parts of the site. The upper part of the Elm Creek Formation consists mostly of clayey, yellow and gray shale with discontinuous light gray limestone units, which increase toward the base. The lower part of the Elm Creek Formation is mostly light gray to medium gray limestone in thin to thick beds. Limestone deposits are exposed along the southern and eastern margins of the site.

Soils on, or in which the site is situated have been identified as Sarita loamy fine sand, 1 to 5% slopes (SaC) by the USDA-SCS (1974:map sheet 61). The

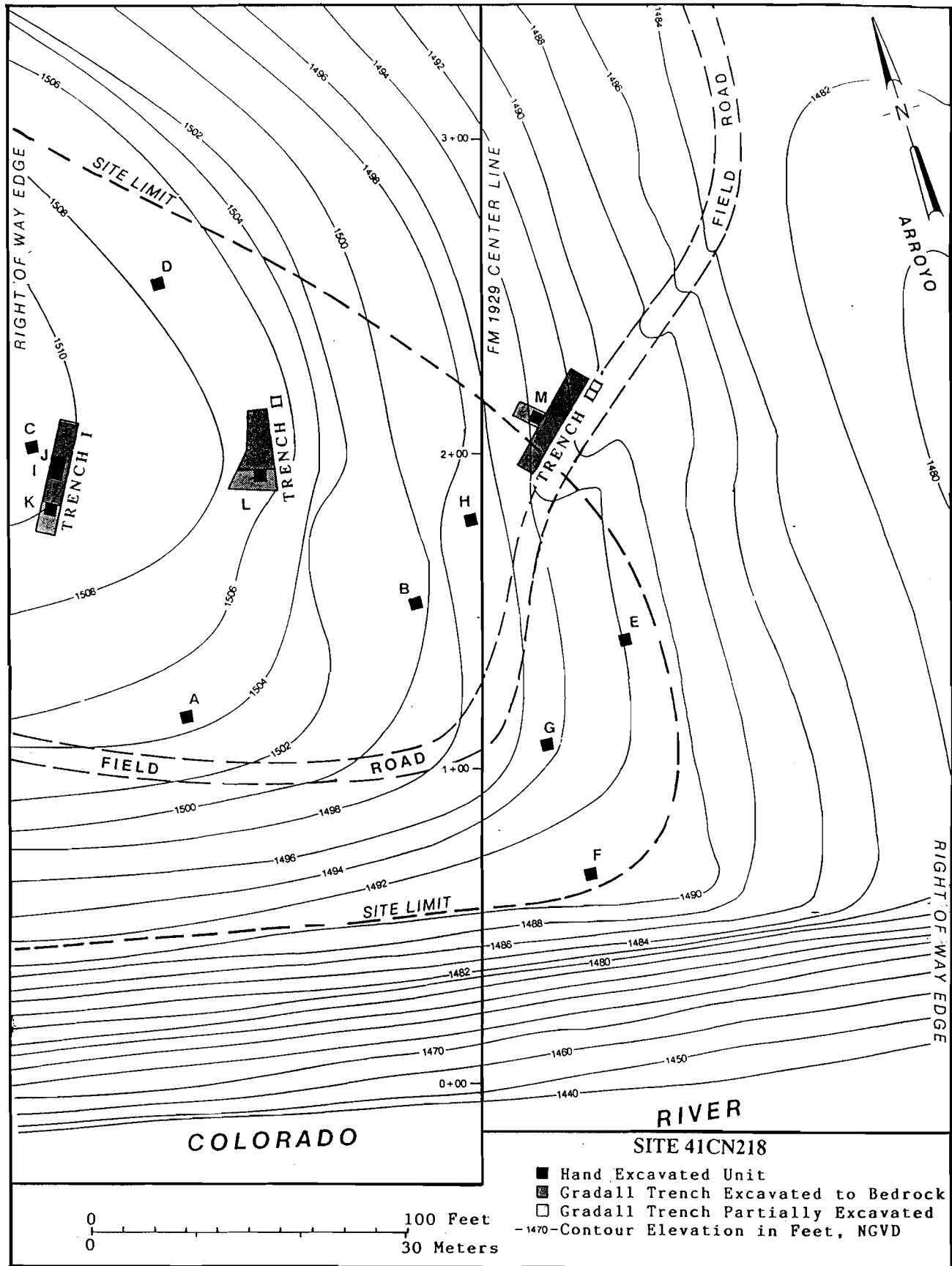


Figure 2-1. Site 41CN218, contour map showing test locations.

Sarita series consists of deep, sandy soils on uplands, which are "subject to high hazard of soil blowing" (ibid., 23). It is also noted that the areas mapped as Sarita include some similar soils thicker than the normal range, and that in some places, the soil is thin and "abruptly underlain by unrelated limestone or shaly clay." The following representative profile is provided by the USDA-SCS (ibid., 23):

- A1 0- 18 cm grayish brown (10YR5/2) loamy fine sand, dark brown (10YR4/3) when moist; massive; loose; few small siliceous pebbles; mildly alkaline; clear, smooth boundary.
- A2 18-122 cm light brown (7.5YR6/4) loamy fine sand, brown (7.5YR5/4) when moist; massive; loose; few small siliceous pebbles; mildly alkaline; clear, smooth boundary.
- B2t 122-183 cm yellowish-red (5YR5/6) sandy clay loam, yellowish red (5YR4/6) when moist; weak, medium, subangular blocky structure; very hard, friable; few fine roots; patchy clay films of slightly darker color than broken ped surfaces; few small siliceous pebbles; neutral.

The profile offered across the eastern margin of the site by the field road revealed a brownish sandy soil on the surface. This extended across the site, and a few lithic flakes were observed to be eroding from it. Underlying the brown sandy soil was a redder, more clayey soil. This appeared to be largely confined to the north-facing slope of the site, and extended well beyond the apparent site boundaries. Artifacts did not appear to be eroding from this redder soil.

METHODOLOGY

Field Investigations

Field investigations were undertaken in two phases. During initial testing in December 1990, eight test units were hand-excavated. Following a site visit by Texas Antiquities Committee personnel, additional investigations, including machine-trenching and hand-excavation, were undertaken in February 1991.

Initial Testing

Each of the initially hand-excavated units (identified as Test Units A through H), was 1 meter x 1 meter in plan, with the sides oriented with compass cardinal directions. Excavation was in arbitrary 10-cm levels, as no identifiable stratigraphy was observed. Fill was screened through 1/4-inch hardware cloth. In general, all materials that did not pass through the screen were bagged by level, and bags were marked to identify each unit and level. These materials were then returned to the laboratory for further processing. This decision was made because of the relatively high ratio of natural gravels to chipped lithics, and a fine coating of sand which made identification of the

relatively few chipped lithics a time-consuming business in the field. Identification of chipped lithics was much simpler in the laboratory, after materials had been washed. It is believed that this procedure substantially increased the recovery of small lithic chips.

The base of each level was inspected for evidence of features. Identified features were drawn and photographed before excavation continued. Following completion of each test unit, walls were cleaned and inspected for features. At least one wall of each unit was then photographed with color slide film and color print film. The camera being used for black and white film malfunctioned; thus, black and white photographs were not obtained. Following recordation, two deep test units (C and D) were back-filled as a safety precaution. The remainder of the units were not perceived as safety hazards, and were left open.

Locations of the test units were plotted relative to the centerline of the proposed highway by SDHPT surveyors using an electronic survey station. They also determined actual elevations, in feet, of each corner of each test unit. The contour map of that portion of the site within the proposed highway right-of-way (Figure 2-1) was prepared photogrammetrically by the Highway Department, and test unit locations were superimposed on it.

Additional Testing

Additional testing was requested by the Texas Antiquities Committee to examine the deeper levels of the site, in particular the subsurface reddish sandy clay exposed below browner sands adjacent to the field track crossing the site. The testing was to consist of removal of the upper sand deposits by Gradall, and then hand-excavation of the lower deposits, with fill being screened through 1/4-inch hardware cloth.

The ability of the Gradall to maneuver across the loose sand of the site surface somewhat restricted the placement of trenches. A total of three trenches (I, II, and III) was excavated.

In general, the method of excavation was to first excavate a trench the width of the Gradall bucket (5 feet) down to bedrock, with each pass limited to the removal of approximately 5 cm. This trench was approximately 10 feet in length, the maximum travel of the bucket arm. The trench was then lengthened, in a similar manner to that of the initial trench, until a trench approximately 20 feet in length was obtained. During the excavation of the trenches, the successive floors of the trench were watched for any evidence of features, and backdirt was also monitored for artifactual material.

Following excavation of the trench to bedrock, the profile was examined in an attempt to identify any cultural stratigraphy or occupied ground surfaces. Additional excavation was then undertaken with the Gradall, leaving a platform from which to hand-excavate a 1 meter x 1 meter test unit, to assay the significance of the lower deposits.

A total of five additional 1 meter x 1 meter units (Test Units I through M) were excavated by hand, with fill screened through 1/4-inch hardware cloth. As with the previous investigations, all materials that did not pass through the screen were returned to the laboratory for washing and further processing.

Laboratory Processing and Analysis

Artifact bags were returned to the laboratory where materials were washed and sorted. Unmodified, natural chert gravels were rudimentarily sorted by size. Each size fraction was then weighed, larger gravels were counted, and they were then discarded. Limestone fragments were sorted into burned and unburned categories, when possible. They were then weighed and discarded.

Obvious cultural materials (e.g., chipped lithic artifacts and debitage) were marked with lot numbers obtained from the Texas Archeological Research Laboratory (TARL), and subjected to further analysis. Analysis of lithic tools followed standard practice of trying to identify utilitarian classes of artifacts to identify site activities, and then comparing them with previously defined types in order to identify cultural and or temporal affiliation. Debitage was also divided into standard categories: primary flakes, flakes with cortex, interior or non-cortex flakes, chips with cortex, chips without cortex, cores, split pebbles and fragments, etc., in order to try to identify kinds or stages of lithic tool manufacture undertaken on the site.

Bone and shell materials were sorted, and where possible, identified as to species.

EXCAVATION UNIT DESCRIPTIONS AND DISCUSSIONS

The following describes each test unit, observed features and stratigraphy, and notes materials recovered from each level. Each unit is then briefly discussed.

Test Unit A

This unit was located just north of the field road and adjacent eroded areas, toward the western margin of the right-of-way. The location was selected on the basis of an apparently slightly greater concentration of lithic debitage in the eroded areas adjacent to the field road, slightly browner-looking sandy soil, and the availability of a small cedar- and mesquite-free area on not obviously eroded soils.

The unit was excavated in six 10-cm levels, with vertical measurements being taken from the surface of the southwest corner of the unit. This was later determined to be at an elevation of 1505.13 feet NGVD. As there was a slight downslope from north to south across the unit, the thickness of the first level increased from 10 cm at the southern edge to approximately 17 cm at the northern edge. The remaining levels were horizontal and 10 cm in thickness.

A group of smallish (10 cm diameter maximum) limestone fragments was observed in the northeast corner, commencing at a depth of approximately 30 cm. These were resting on a large, horizontal slab of limestone, the surface of which was at a depth of approximately 39 cm, and the base of which was at a depth of approximately 50 cm (Figure 2-2). The large slab did not appear to have been burned. No artifacts were observed to be associated with the rocks, nor was any ash or charcoal observed in the vicinity.

A tight cluster of limestone fragments was found in Level 6, lying roughly horizontally on, or closely above, an apparently natural surface that included

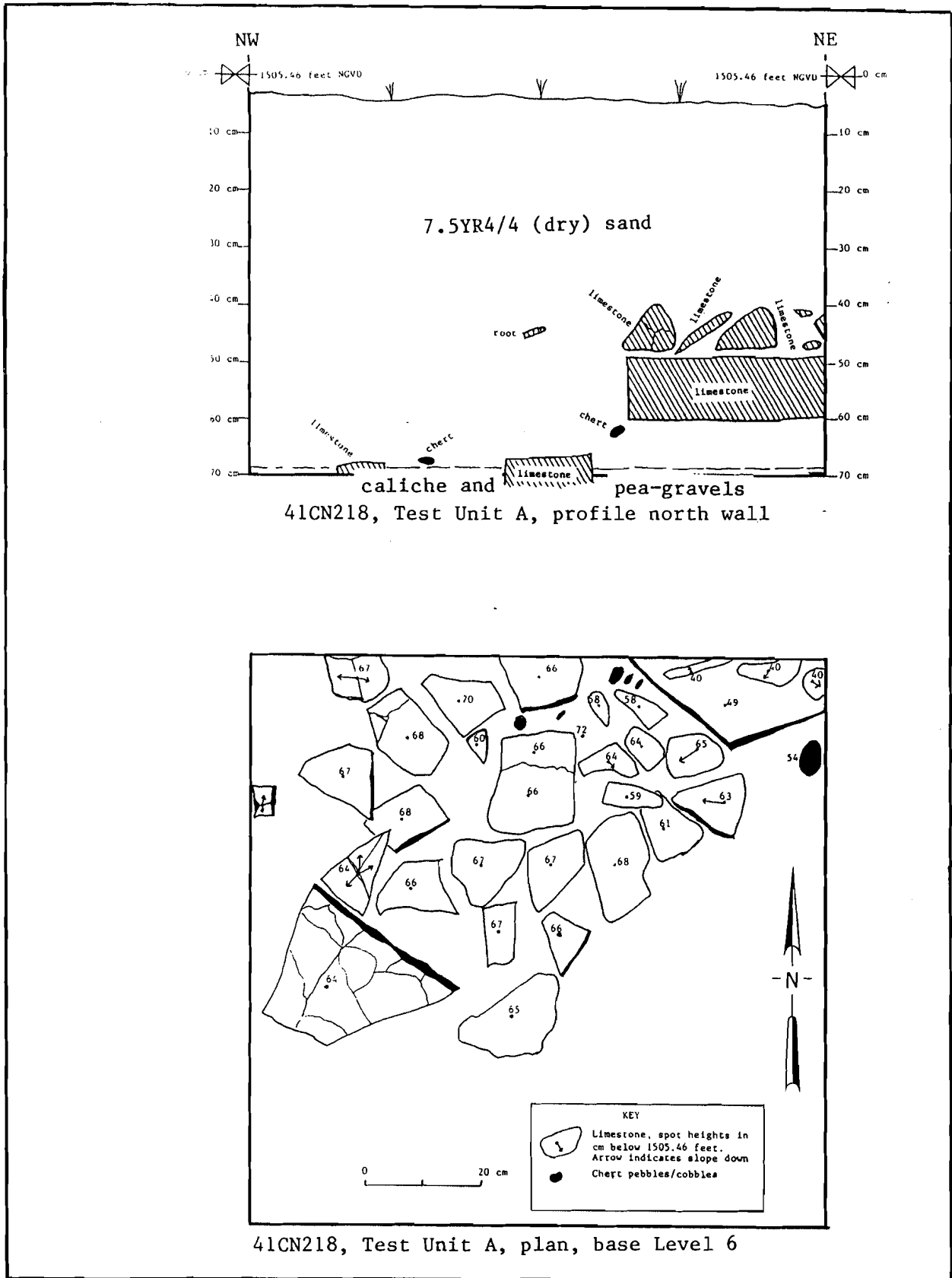


Figure 2-2. Site 41CN218, Test Unit A, profile of north wall and plan of probable hearth feature at base of Level 6.

caliche and pea gravels. When viewed in plan (Figure 2-2), this cluster of rocks appeared to be a continuation of those found at a depth of between 30 and 50 cm, but at a distinctly lower elevation. It is possible that the two clusters are indeed from a single feature, with the rocks in Level 6 having been lowered by deflation of the unstable sandy soils on which they were located. Several of the rocks exhibited in situ breaks, and colors ranged from gray to pinkish, apparently the result of burning. Thus, the group of rocks was tentatively identified as a hearth. No artifacts were found in association with the rocks, nor was any ash or charcoal noted in the vicinity.

Examination of the profiles revealed a homogeneous brown (7.5YR4/4 to 7.5YR4/6 when dry) loamy sand to a depth of 60 cm below the ground surface at the southwest corner, or 67 cm below the ground surface at the northwest corner (Figure 2-2). At this depth, the loamy sand became more compact with the addition of light-colored caliche and more frequent pea gravels. The upper loamy sand is within the parameters of the Sarita A2 soil horizon described by the USDA-SCS (1974:23). No evidence of cultural stratification was visible, and no features, other than those described above, were observed.

Artifacts and other materials collected off the screen from Test Unit A are presented below in Table 2-1.

TABLE 2-1.
Recovered Materials, Test Unit A, Site 41CN218.

Description	LEVEL					
	1	2	3	4	5	6
<u>Chert</u>						
Flakes, edge-modified	-	1	-	1	-	-
Flakes, without cortex	2	7	6	8	7	5
Flakes, with cortex	-	2	4	4	2	2
Chips, without cortex	-	6	9	4	4	5
Chips, with cortex	-	4	4	3	2	3
Chunks	-	-	-	1	1	1
Thermal shatter	-	1	-	2	-	-
Unmodified gravels, 0-5 cm, grams	175	1767	1602	1816	1321	1135
Unmodified gravels, 5+ cm, number	-	-	-	-	3	2
Unmodified gravels, 5+ cm, grams	-	-	-	-	228	151
<u>Mussel shell</u>						
Total weight, grams	1	11	12	12	7	5
Number of hinges	-	4	8	4	4	2
<u>Bone</u>						
Silicified, antler	-	-	-	1	-	-
Silicified, turtle	-	1	-	-	-	-
<u>Limestone</u>						
Unburned, grams	149	1234	919	1316	1190	1497
Burned, grams	-	-	-	1334	202	779

None of the artifacts were temporally diagnostic, thus they provided no evidence of multiple site occupation. With the exception of Level 1, artifact and materials categories varied little in quantity with depth. Thus, artifact density also provided no indication of discrete occupation horizons. The lesser amounts of artifacts and natural gravels in Level 1 are probably indicative of deposition of locally derived, wind-blown sands subsequent to prehistoric occupation.

Unmodified chert gravels ranged in size from pea-gravels to a maximum diameter of 7 cm, with smaller gravels being more frequent than larger gravels. All were indicative of natural fluvial deposits, as were the water-rolled limestone gravels. The fossil bone, one fragment apparently from a turtle carapace, and one fragment of possible antler or horn, are probably fluvial in origin.

Test Unit B

This unit was located approximately 25 meters east of Test Unit A, and the location was selected for similar reasons. The unit was excavated in eight levels. Vertical measurements were taken from the surface of the northwest corner of the unit. This was later determined to be at an elevation of 1501.07 feet NGVD. As there was a distinct downslope from west to east across the unit, the thickness of the first level decreased from 10 cm at the western edge to the bare removal of surface vegetation at the eastern edge. The next seven levels were horizontal and 10 cm in thickness. Large fragments of limestone were encountered in levels 7 and 8. The rock encountered in these lowest levels did not appear to have been burned, and much was canted at steep angles to the horizontal. The rocks appeared to be a naturally collapsing thin bedrock stratum.

No features were observed during the excavation of this unit, either in level floors or in profiles.

Stratigraphy revealed by the profiles (Figure 2-3) consisted of a brown to dark yellowish brown (7.5YR4/4 to 10YR4/4 moist), loose, unconsolidated, loamy sand extending from the surface to a depth of approximately 45 cm. Below this depth, numerous light caliche particles were included in the same loamy sand, to a depth of approximately 65 cm, where the apparently natural stratum of limestone bedrock was encountered. The profile is within the general range of Sarita soils. The profiles did not reveal any evidence of cultural stratigraphy.

Artifacts and other materials collected off the screen from Test Unit B are presented in Table 2-2.

None of the artifacts were temporally diagnostic, thus they provided no evidence of either single or multiple site occupation. Density of artifacts was somewhat greater in Level 7; however, natural gravels were also more concentrated in this level. Thus, the greater artifact concentration in this level may reflect natural settling rather than an occupation level. The relative sparseness of both artifacts and natural materials from Level 1 is almost certainly a reflection of the geometry of that level; its thickness decreased from approximately 10 cm at the western side to virtually nothing at the eastern side.

All of the bone consisted of very small, calcified fragments, less than 1 cm in length, that could not be identified as to species.

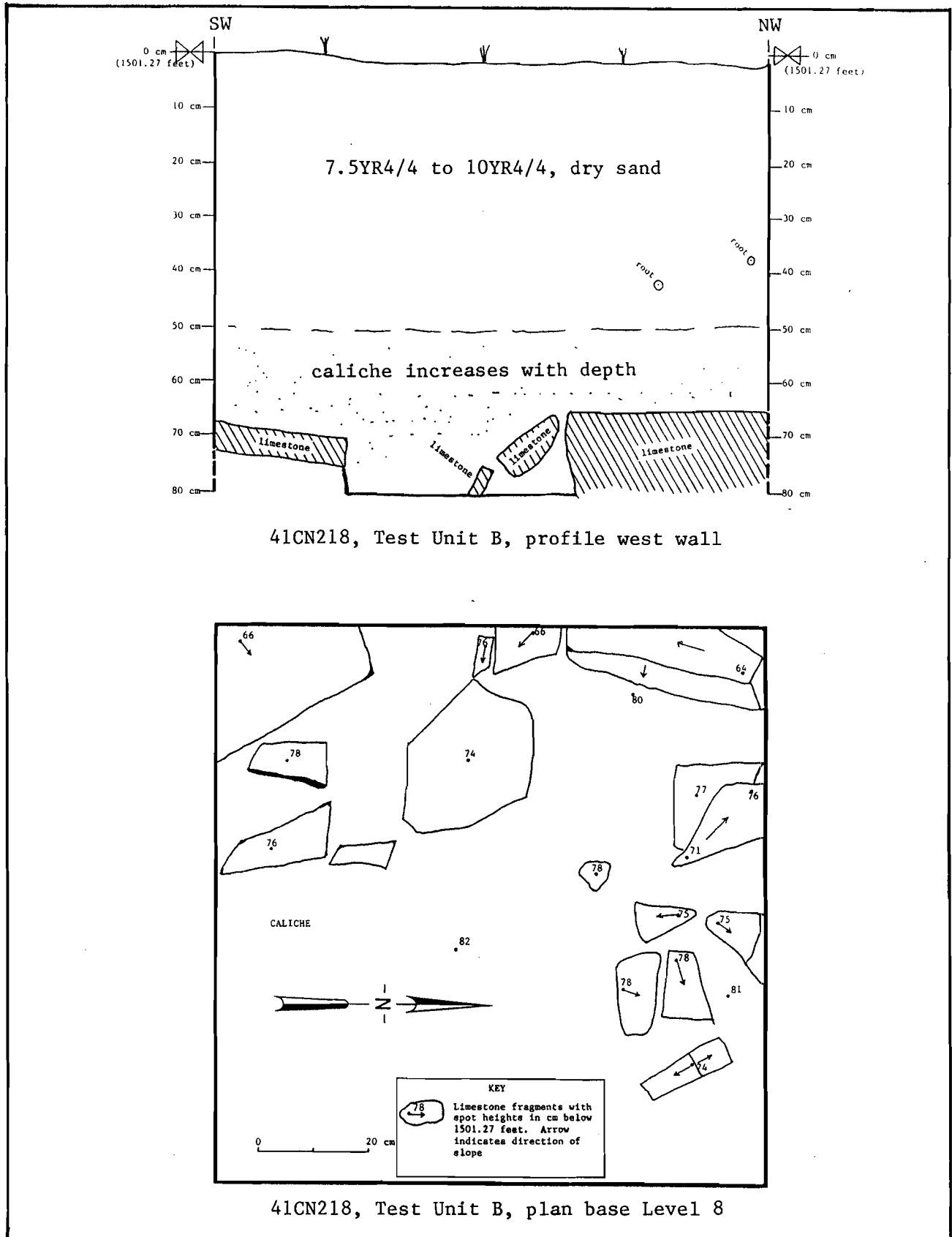


Figure 2-3. Site 41CN218, Test Unit B, profile of west wall, and plan of fallen natural rock stratum at base of Level 8.

TABLE 2-2.
Recovered Materials, Test Unit B, Site 41CN218.

Description	LEVEL							
	1	2	3	4	5	6	7	8
<u>Chert</u>								
Flakes, edge-modified	-	-	1	1	-	-	1	-
Flakes, without cortex	-	3	4	3	4	1	2	-
Flakes, with cortex	1	-	-	-	-	1	2	1
Chips, without cortex	-	1	2	1	1	2	-	1
Chips, with cortex	-	1	2	-	-	-	2	1
Chunks	-	-	-	-	-	-	3	-
Thermal shatter	-	-	-	-	-	-	2	2
Unmodified gravels, 0-5 cm, grams	152	428	843	694	430	708	2060	764
Unmodified gravels, 5+ cm, number	-	-	-	-	-	1	1	-
Unmodified gravels, 5+ cm, grams	-	-	-	-	-	60	261	-
<u>Mussel shell</u>								
Total weight, grams	2	-	5	19	9	15	5	1
Number of hinges	-	-	1	3	1	2	1	-
<u>Bone</u>								
Calcified, unidentifiable frags.	-	-	3	2	1	-	1	1
<u>Limestone</u>								
Unburned, grams	53	465	856	758	801	1422	2831	1465
Burned, grams	118	254	543	314	494	638	1260	798
<u>Hematite</u>								
Fragments, number	-	-	-	1	-	-	-	-
Fragments, grams	-	-	-	4	-	-	-	-

Unmodified chert gravels ranged from pea-sized to a maximum diameter of 9.5 cm for one cobble. However, the majority were of small size, less than 3 cm in diameter. The chert gravels are indicative of the original fluvial nature of the deposits. Numerous water-rolled limestone fragments were also present.

Test Unit C

Test Unit C was located near the highest point of the site, at the western margin of the right-of-way. The location was selected on the judgement that the highest portion of the site (within the right-of-way) would be the least affected by erosion and would, therefore, have the greatest potential for retaining any evidence of cultural stratigraphy.

The unit was excavated in sixteen arbitrary 10-cm levels, using the ground surface at the southwest corner as a datum. This was later determined to be at an elevation of 1510.79 feet. The first five levels were characterized by fine sand with only a very few pea gravels. Commencing in Level 6, artifacts were encountered in relatively small numbers, and gravels increased in both size and frequency. Excavation was halted at the base of Level 16, a depth of 160 cm, for

safety reasons. However, several probes with a 3/4-inch soil auger were made, which indicated a solid bedrock at a depth of approximately 2 meters below the surface. On the morning following completion of the test unit excavation, a mouse was found in the pit. This indicated that the site had undoubtedly suffered from bioturbation, though such activity was not readily apparent in profiles. The lack of such evidence was probably the result of a combination of the relative fine nature and lack of cohesiveness of the deposits.

No features were observed during the excavation of this unit, either in the level floors or in profiles.

Stratigraphy revealed by the profiles (Figure 2-4) during excavation revealed gradual, subtle changes with depth. No clear boundaries were observed, nor was any cultural stratification. After a day of drying, the profiles assumed a fairly homogeneous appearance. Thus, the differences observed during the excavation may have been due to moisture differentials through the soil column. The upper approximately 60 cm of fill consisted of strong brown (7.5YR5/8), fairly dry, loose fine sand. Virtually nothing was recovered from the screen from this portion of the unit (Table 2-3). Recovered chert gravels were all of small size; maximum diameter in the first three levels was 1.5 cm, maximum diameter in Level 4 was 2.5 cm, and maximum diameter in Levels 5 and 6 was 2.0 cm. The absence of artifacts and the small size and relative infrequency of pebbles led to the interpretation that the upper approximately 60 cm of deposit consisted of wind-deposited materials, probably of local origin, subsequent to site occupation.

Between 60 and 100 cm, the color darkened slightly to 7.5YR5/6, moist, became slightly more loamy, and included greater quantities of somewhat larger gravels (to a maximum diameter generally not exceeding 5 cm) and cultural materials. At a depth of 100 cm, the loamy sand became noticeably wetter, with Munsell color between 7.5YR5/6 and 7.5YR5/8. This extended to a depth of approximately 140 cm. These deposits were interpreted as representative of a Sarita A2 horizon (USDA-SCS 1974:23).

At a depth of approximately 140 cm, the color became redder, between 7.5YR5/8 and 5YR5/8, and the soil appeared to be slightly clayier. This zone was interpreted as a Sarita B horizon.

Artifacts and other materials collected from the 1/4-inch screen are listed in Table 2-3. None of the artifacts are temporally or culturally diagnostic, thus they provide no evidence as to whether there was single or multiple site occupancy. Within the artifact-bearing levels, Level 6 through Level 16, there is no level showing a significantly higher number of artifacts indicative of a possible living surface, though frequency does appear to decline in Levels 14 through 16, where the soil was somewhat clayier. Weights of recovered limestone show marked highs in Levels 11 and 15. This may be indicative of living surfaces at these depths, particularly for Level 11. As has been noted above, the artifact density appears to lessen in Level 14, and the soil becomes slightly clayier, thus the limestone from Level 15 is not likely to be indicative of a living surface, though it is possible that the limestone excavated from Level 11 could represent the remains of a hearth. It should be noted that discussion of possible hearths is little more than rampant speculation; certainly no clusters of rock remotely resembling a hearth were observed during excavation. It should be further noted that the weight of rock from Level 11 was made up by two rocks, as was the weight from Level 15.

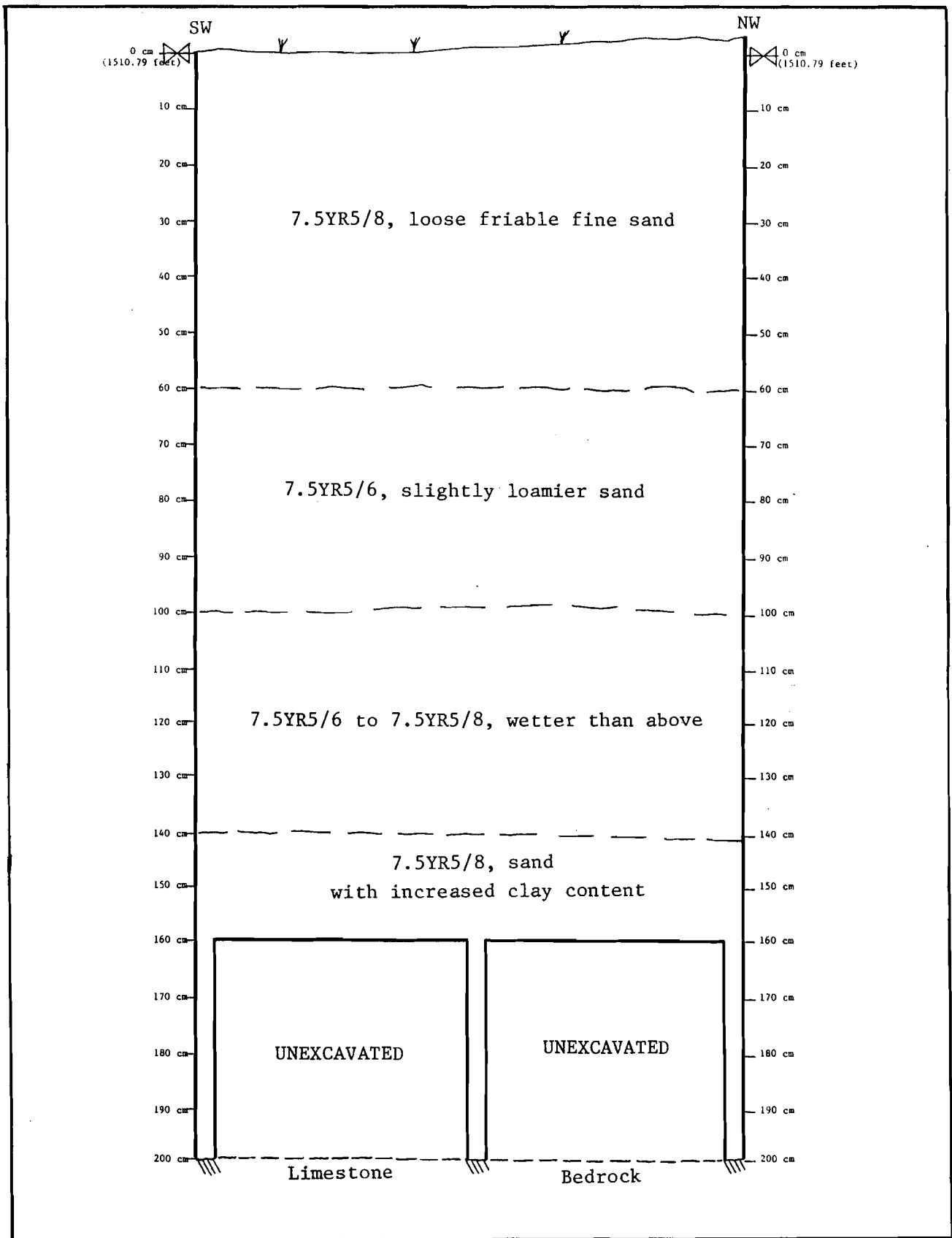


Figure 2-4. Site 41CN218, Test Unit C, profile of west wall.

TABLE 2-3

Recovered Materials, Test Unit C, Site 41CN218.

Description	LEVEL															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<u>Chert</u>																
Biface, fragment	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
Flakes and chips, edge-modified	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-
Flakes, without cortex	-	-	-	-	-	1	5	5	7	9	8	3	12	3	2	3
Flakes, with cortex	-	-	-	-	-	-	1	1	4	2	1	2	4	1	1	3
Chips, without cortex	-	-	-	-	-	1	7	10	3	7	6	2	5	2	2	5
Chips, with cortex	-	-	-	-	-	-	-	-	-	-	1	-	3	-	-	-
Thermal shatter	-	-	-	-	-	1	5	1	-	3	-	1	3	-	-	1
Unmodified gravels, 0-5 cm, grams	2	2	2	13	21	56	377	334	336	377	383	429	533	254	319	641
Unmodified gravels, 5+ cm, number	-	-	-	-	-	1	-	-	1	1	-	-	-	-	-	-
Unmodified gravels, 5+ cm, grams	-	-	-	-	-	84	-	-	117	111	-	-	-	-	-	-
<u>Mussel shell</u>																
Total weight, grams	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Number of hinges	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<u>Bone</u>																
Silicified, antler (?)	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
<u>Limestone</u>																
Unburned, grams	-	-	1	2	5	4	53	18	85	11	2	37	35	2	7	15
Burned, grams	-	-	-	-	-	-	-	-	-	-	428	-	42	78	363	-
<u>Sandstone</u>																
Cobble	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Slab fragments	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-

Test Unit D

This unit was excavated approximately 18 meters northeast of Test Unit C, on a relatively gentle northeast-facing slope, just above a break point where the slope steepened. It was thought that this should be close to the northeastern limit of the site.

The unit was excavated in sixteen 10-cm levels, though two levels (between depths of 120 and 140 cm) were accidentally bagged together, effectively yielding fourteen 10 cm levels and one 20-cm level. Depths were measured from the southwest corner of the unit, later calculated to be at an elevation of 1507.89 feet NGVD. Because of a northeast slope, the first level ranged in thickness from 10 cm at the southwest corner to virtually nothing at the northeast corner. The two levels accidentally bagged as one are referred to as a single level, Level 13. As with the previous unit, excavation was stopped at a depth of 160 cm for safety reasons. Again 3/4-inch coring indicated bedrock at a depth of approximately 200 cm below the surface. The coring indicated continuation of the sandy material to bedrock, with no visible stratigraphic changes.

No features were observed during the excavation of this test unit, either in the level floors or in the wall profiles.

Stratigraphy revealed by the profiles during excavation (Figure 2-5) was similar to that revealed in Test Unit C. Again, no clear distinct stratigraphic breaks, either natural or cultural, were observed, but during excavation, gradual, subtle changes were observed. However, these tended to disappear after the soils had been exposed to air for a short time.

The upper 70 cm consisted of loose, unconsolidated, fine sand. Color for the first 40 cm was strong brown (7.5YR5/8), but between 40 and 70 cm color was slightly lighter, between 7.5YR5/8 and 7.5YR6/8. No cultural materials, other than a recent historic fence staple, were recovered from the upper 70 cm of fill (Table 2-4), and gravels were generally less than 1 cm in diameter. Thus, these upper deposits were interpreted as wind-blown materials, probably of local derivation, deposited after the prehistoric site occupation. They appear to conform to the description of the Sarita A2 horizon (USDA-SCS 1974:23).

Below a depth of approximately 70 cm, the sand appeared to be a little loamier. Color observed at depths of between 70 and 100 cm was 7.5YR6/6, and between 100 and 200 cm it was 7.5YR5/6. Again the soils appear to fall within the range described for the Sarita A2 horizon.

Artifacts and other materials recovered on the screen from the fill of this unit are listed in Table 2-4. The iron fence staple recovered from the first level is clearly of recent historic vintage and not associated with the prehistoric occupation of the site. The lithic artifacts are neither temporally nor culturally diagnostic, thus they provide no evidence for determining whether the prehistoric occupation was single or multiple. Similarly, the distribution of artifacts among the levels is fairly uniform, again giving no indication of possible living surfaces. The absence of chunks of limestone rock is noticeable relevant to amounts recovered from previously excavated units. This, with the general low number of recovered lithics, was interpreted as an indication that this unit was truly at the periphery of the site.

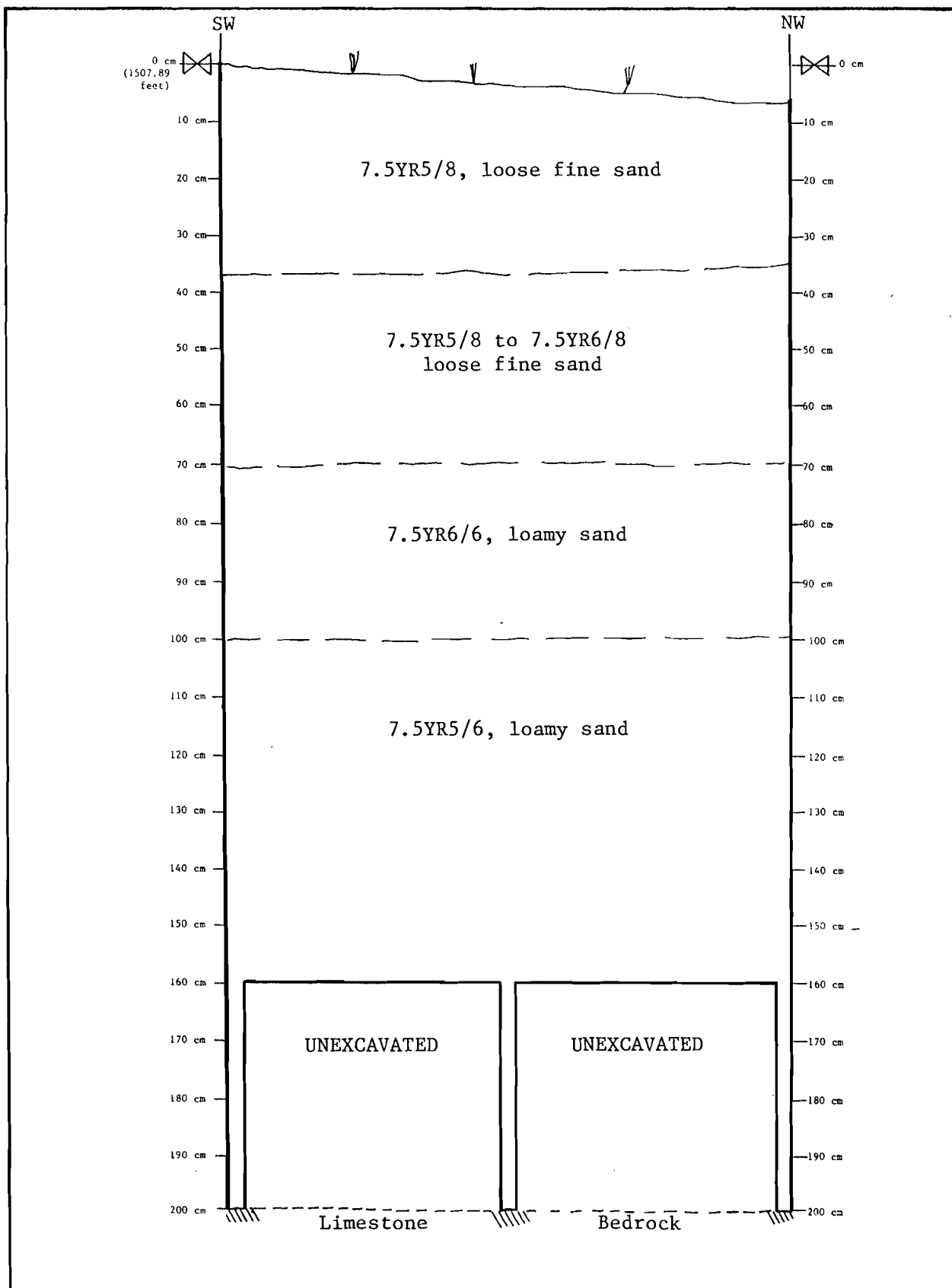


Figure 2-5. Site 41CN218, Test Unit D, profile of west wall.

TABLE 2-4
Recovered Materials, Test Unit D, Site 41CN218

Description	LEVEL														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
<u>Chert</u>															
Flakes and chips, edge-modified	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Flakes, without cortex	-	-	-	-	-	-	-	5	-	2	3	1	1	1	1
Flakes, with cortex	-	-	-	-	-	-	-	1	-	-	-	-	1	1	-
Chips, without cortex	-	-	-	-	-	-	-	2	3	-	1	4	1	-	1
Chips, with cortex	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
Burned shatter	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-
Unmodified gravels, 0-5 cm, grams	31	9	1	-	-	3	12	55	90	192	257	278	256	198	490
Unmodified gravels, 5+ cm, number	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unmodified gravels, 5+ cm, grams	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<u>Hematite</u>															
Fragments	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
Weight, grams	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
<u>Limestone</u>															
Unburned, grams	155	-	-	-	-	-	-	1	-	4	24	1	12	1	9
Burned, grams	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<u>Iron</u>															
Fence staple	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-

2-16

Test Unit E

This unit was excavated on an east-facing slope at the southeastern edge of the site, east of the field road crossing the site. The location was selected because of the presence on the surface of a somewhat blacker soil, later determined to be the result of recent burning, as well as the surface presence of mussel shell and occasional lithic flakes. A further consideration in the location selection was the appearance of possibly relatively deep soil deposits within an area where limestone bedrock was exposed over considerable areas.

Materials exposed on the surface were collected and bagged separately. Then, three 10-cm levels and one slightly deeper level were excavated to bedrock. The vertical datum was the ground surface at the southwestern corner of the unit. This was later determined to be at an elevation of 1491.35 feet NGVD. Because of the eastward slope of the ground surface, the first level was 10 cm thick at the western side, and virtually zero at the eastern side. The fill of the unit contained large quantities of relatively small limestone fragments among a friable sand matrix. The final level, Level 4, contained even more fragments and appeared to be a thin natural limestone stratum, broken and weathered in situ.

No features were identified during the excavation of this unit, either in levels or in wall profiles, even though the fill included considerable quantities of limestone fragments.

The upper part of the stratigraphy (Figure 2-6) consisted of about 40 cm of dark yellowish brown (10YR4/4), friable sand with a few limestone rocks. This conforms, with the exception of the rock fragments, to the description of the Sarita Al horizon. The final approximately 7 cm of fill overlying solid limestone bedrock consisted predominantly of limestone fragments which appeared to have been broken and weathered in place, with the same sandy matrix in interstices.

None of the artifacts recovered from the unit (Table 2-5) were temporally or culturally diagnostic. Thus, it could not be determined whether the materials represented single or multiple occupations. Both Levels 2 and 4 produced about double the numbers of artifacts produced in Levels 1 and 3. However, given the relatively small total number of artifacts, this may or may not be significant. Mussel shell was present in considerably larger quantities than in previously excavated units, but fragments were scattered throughout the fill, and were not recovered from discrete clusters. The amount of limestone fragments recovered was considerably greater than from the previously excavated units, but is thought to be largely a reflection of the lower elevation of the unit, in an area where limestone was exposed on the surface in the immediate vicinity, and at higher elevations than the surface of the unit.

Test Unit F

Test Unit F was located on the southeastern margin of the site, on a relatively flat area on top of the bluff overlooking the Colorado River. Limestone bedrock was exposed in the general vicinity. Thus, it was anticipated that the unit would contain only shallow deposits before bedrock was encountered. However, several flakes and mussel shell fragments were observed on the surface, and it was decided that a test of the general area was appropriate.

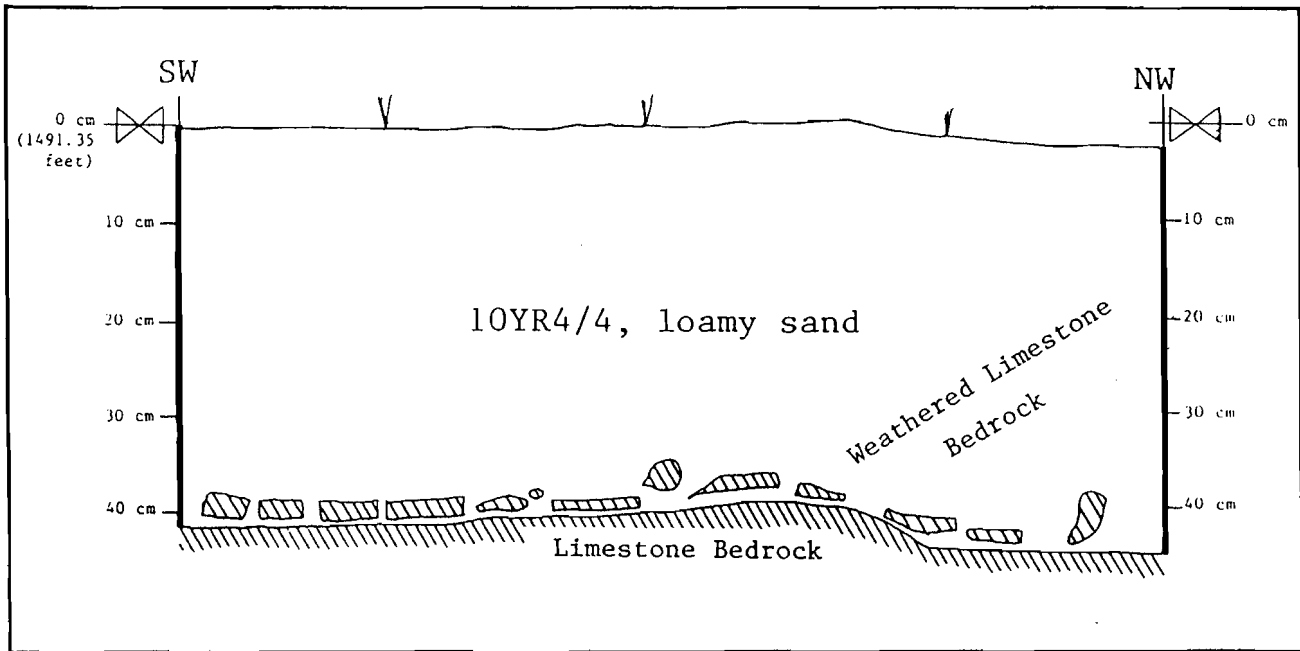


Figure 2-6. Site 41CN218, Test Unit E, profile of west wall.

TABLE 2-5.
Recovered Materials, Test Unit E, Site 41CN218.

Description	LEVEL				
	Surface	1	2	3	4
<u>Chert</u>					
Flakes and chips, edge-modified	-	1	1	-	1
Flakes, without cortex	2	3	3	5	3
Flakes, with cortex	2	-	3	1	3
Chips, without cortex	-	1	9	1	6
Chips, with cortex	-	-	4	-	6
Cores	-	-	-	-	1
Split pebble fragments	-	1	-	-	1
Thermal shatter	1	4	1	3	3
Unmodified gravels, 0-5 cm, grams	113	378	528	355	744
Unmodified gravels, 5+ cm, number	-	1	-	-	10
Unmodified gravels, 5+ cm, grams	-	85	-	-	864
<u>Mussel shell</u>					
Total weight, grams	13	102	225	130	118
Number of hinges	4	18	28	22	18
<u>Hematite</u>					
Fragments, number	-	-	7	4	17
Fragments, weight, grams	-	-	5	3	8
<u>Limestone</u>					
Unburned and burned, grams	170	2192	2860	2700	8961

Materials exposed on the surface were collected and bagged separately. Excavation then began using arbitrary 10-cm horizontal levels, using the ground surface at the northwestern corner of the unit as a vertical datum. This was later determined to be at an elevation of 1491.33 feet NGVD. As there was a perceptible slope down to the southeast across the unit, the first level was 10 cm thick at the northwest corner, and virtually zero at the southeast corner. The base of the second level coincided with solid limestone bedrock. The fill of both levels consisted largely of small fragments of broken and weathered limestone, with relatively small amounts of dark yellowish brown (10YR4/4) friable sand. Because of the large quantities of rock fragments, most were discarded in the field.

No features were observed during the excavation of this shallow unit.

Stratigraphy revealed by the profiles consisted of approximately 20 cm of limestone rock fragments and dark yellowish brown (10YR4/4) sand, overlying solid limestone bedrock. The rock fragments were interpreted as the natural breakup and weathering of a thin limestone stratum, and the sand appears to conform to the description of the Sarita A1 horizon.

None of the artifacts recovered from the unit (Table 2-6) were temporally or culturally diagnostic. They were essentially confined to the surface and the first excavation level.

Excavation of this unit confirmed that the rock observed on the surface was in fact natural limestone that was weathering and breaking up in situ.

TABLE 2-6.
Recovered Materials, Test Unit F, Site 41CN218.

Description	LEVEL		
	Surface	1	2
<u>Chert</u>			
Flakes and chips, edge modified	1	3	-
Flakes, without cortex	2	3	-
Flakes, with cortex	-	4	1
Chips, without cortex	2	9	1
Cores	1	-	-
Burned shatter	-	3	-
Unmodified gravels, 0-5 cm, grams	45	74	33
<u>Mussel shell</u>			
Total weight, grams	3	37	2
Number of hinges	2	5	1
<u>Limestone</u>			
Unburned, grams	-	543	47
Burned, grams	724	122	-

Test Unit G

This unit was located between Units E and F, but at a slightly higher elevation on the crest of the southeast-trending ridge. It was located just east of the field road crossing the site, in a small clearing between cedar bushes. Although limestone bedrock was exposed on the surface in the general vicinity, the location appeared to have the potential for a reasonable depth of soil.

The unit was excavated in six 10-cm levels, using the ground surface at the southwestern corner of the unit as a vertical datum. This was later determined to be at an elevation of 1494.65 feet NGVD. Because rock content increased considerably in Level 3 and subsequent levels, much was discarded in the field.

No cultural features were observed during the excavation, either in level floors or in wall profiles.

Stratigraphy revealed by the test unit is depicted in Figure 2-7. The upper 30 to 40 cm consisted of dark yellowish brown (10YR4/4) loamy sand, with a few small limestone rock fragments. The loamy sand was interpreted as a Sarita A1 soil horizon. This was underlain by an approximately 15-cm-thick level of loamy sand with rounded, weathered shaley clay fragments and limestone rock fragments; the latter were more frequent than in the above stratum. This stratum was interpreted as a naturally decomposing mixed level of a thin limestone bed with an underlying shale bed. The final stratum encountered consisted of yellowish brown (10YR5/4) loamy clay with white caliche particles, virtually free of limestone fragments. This profile conforms to the description of the Owens soil B horizon (USDA-SCS 1974:20), which is depicted as being present on the steeper slope immediately east of the site boundary (Ibid., map sheet 61). No cultural stratigraphy was revealed by the profiles. However, artifacts were recovered almost entirely from the upper three levels, which conform to the upper, loamy sand, Sarita A1 soil horizon.

Artifacts recovered from the unit (Table 2-7) were neither temporally nor culturally diagnostic. As noted above, they were confined largely to the upper 30 cm of the unit, with an approximately equal number of artifacts per level.

Excavation of this unit confirmed the basically surface nature of cultural materials in this area.

Test Unit H

This unit was located northwest of the field road crossing the site, close to the northern limit of where lithic artifacts were observed eroding from the cut bank adjacent to the field road, and sufficiently far from the field road to avoid clearly eroded areas.

Because of a considerable downslope from southwest to northeast across the unit, the first level excavated was 20 cm deep at the southwestern corner, the vertical datum for the unit, and only 2 cm thick at the northeastern corner. The ground surface at the southwest corner of the unit was later determined to be at an elevation of 1497.27 feet NGVD. Following excavation of the first 20-cm level, five additional 10-cm levels were excavated, and bedrock was encountered at the base of the final level, or at a depth of approximately 70 cm.

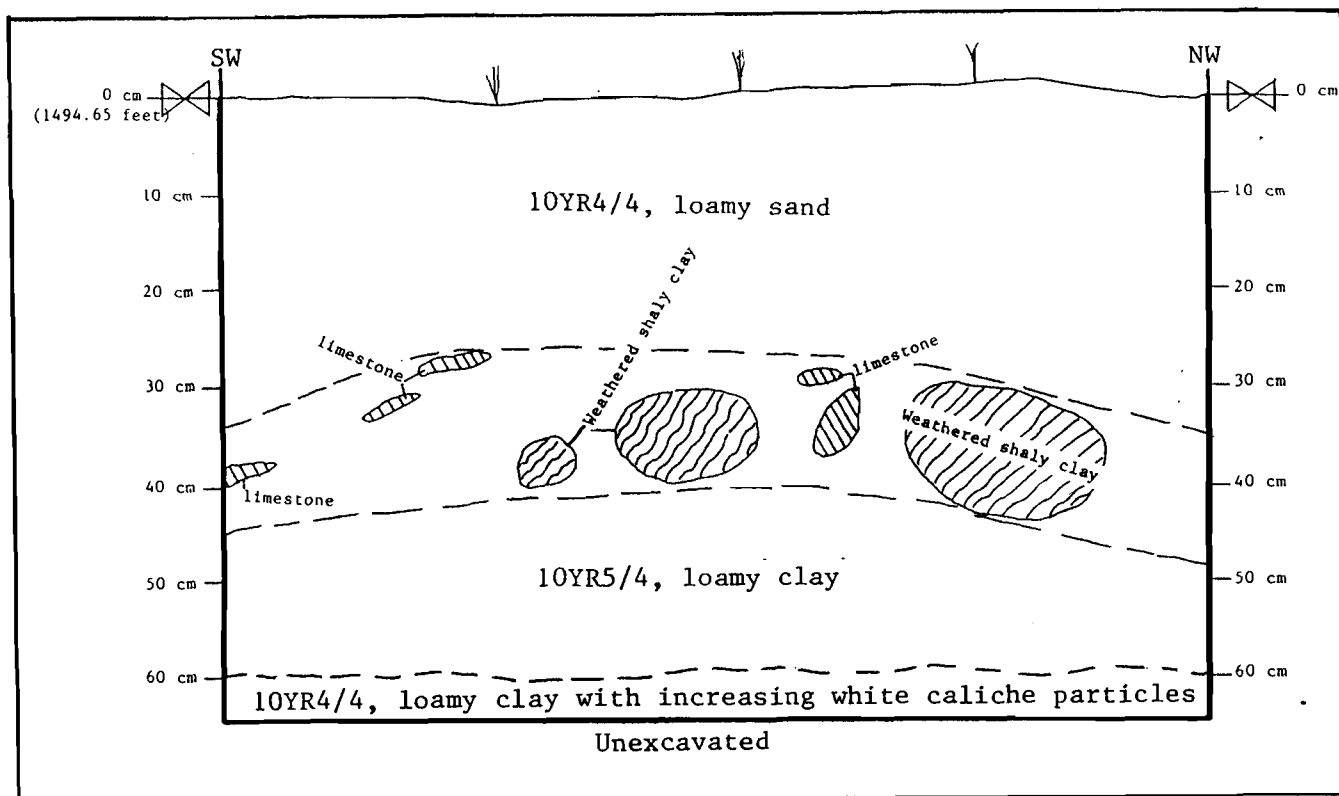


Figure 2-7. Site 41CN218, Test Unit G, profile of west wall.

TABLE 2-7.
Recovered Materials, Test Unit G, Site 41CN218.

Description	LEVEL					
	1	2	3	4	5	6
<u>Chert</u>						
Flakes and chips, edge-modified	1	1	-	-	-	-
Flakes, without cortex	3	2	2	1	1	-
Flakes, with cortex	2	-	1	1	1	-
Chips, without cortex	4	3	1	-	-	-
Chips, with cortex	1	-	-	-	-	-
Split pebble fragment	-	-	1	-	-	-
Thermal shatter	1	5	5	-	-	-
Unmodified gravels, 0-5 cm, grams	636	474	278	146	54	-
<u>Mussel shell</u>						
Total weight, grams	17	23	40	30	16	-
Number of hinges	7	5	5	2	-	-
<u>Hematite</u>						
Fragments, number	4	-	-	-	-	-
Weight, grams	3	-	-	-	-	-
<u>Limestone</u>						
Unburned and burned grams	3625	4162	4398	4063	1	-

No features were observed during the excavation of this test unit, either in level floors or in wall profiles.

Stratigraphy revealed in the profiles (Figure 2-8) was simple, basically consisting of approximately 70 cm of strong brown (7.5YR4/6 to 7.5YR5/6) loamy sand, with increasing amounts of caliche particles toward the base. There was no evidence of cultural stratification within the sandy loam, which falls within the description of a Sarita A1 soil horizon. Below the loamy sand was solid limestone bedrock.

None of the artifacts recovered from the unit (Table 2-8) were either temporally or culturally diagnostic. Distribution of the artifacts through the profile was virtually even. The relatively small numbers of artifacts were taken as confirmation that the unit was close to the margin of the site.

Test Units I and J

These two contiguous test units were excavated into a slight depression in the bedrock at the base of Gradall Trench I. Each unit was excavated in a single level, between 5 and 10 cm in depth, to the general surface of the bedrock. Surface of the levels was at an elevation of approximately 1505.84 feet NGVD and at a depth of approximately 190 cm below the original ground surface. The initial fill consisted of the base of overlying strong brown (7.5YR4/6) to yellowish red (5YR4/6) loamy sand, and an underlying, thin stratum of yellowish red (5YR4/6) clay with embedded gravels, which was directly overlying bedrock. After completion of the initial levels, a roughly circular area of natural gravels in a matrix of yellowish red (5YR4/6) clay was observed to extend deeper into the bedrock. Excavation of this revealed an apparently natural solution cavity extending to a maximum depth of approximately 40 cm below the general level of the surface of the bedrock (Figure 2-9).

Artifacts recovered from the units are listed in Table 2-9. All of the cultural materials originated from above the natural solution cavity, and their presence at this depth is believed to be the result of artifact percolation through the soil column, rather than an in situ occupation level. The artifacts are neither temporally nor culturally diagnostic.

Test Unit K

This unit was excavated at the southern end of Gradall Trench I. A platform was excavated by Gradall to an elevation of approximately 1507.86 feet NGVD, approximately 70 cm below ground surface. The face of the platform, adjacent to the Gradall trench, was cleaned and made vertical by shovel. The unit was then laid out with the northern edge adjacent to the cut vertical edge, so that 10-cm levels could be excavated from the cut face. Five 10-cm levels were then excavated before a final, slightly thicker, sixth level was excavated to bedrock.

No features were recognized during the excavation of this unit, either in the floors or the walls of the unit.

Stratigraphy revealed by the profiles (Figure 2-10) consisted of unconsolidated loamy sand, becoming slightly wetter with depth. Color ranged from strong brown (7.5YR4/6) at the surface to yellowish-red (5YR4/6) just above bedrock. The color change was gradual. The soil profile appeared to be within

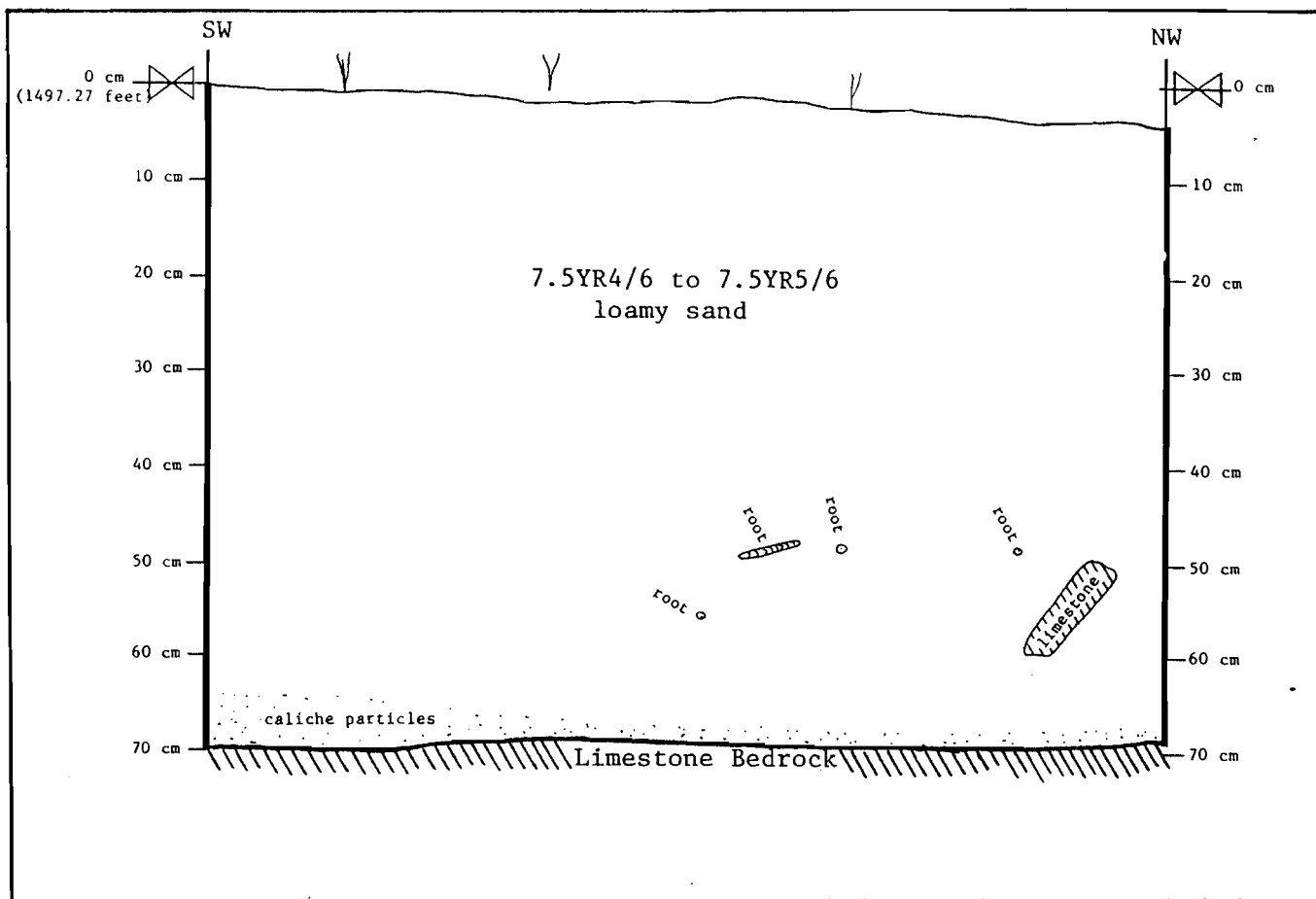


Figure 2-8. Site 41CN218, Test Unit H, profile of west wall.

TABLE 2-8.
Recovered Materials, Test Unit H, Site 41CN218.

Description	LEVEL					
	1	2	3	4	5	6
<u>Chert</u>						-
Flakes, without cortex	1	-	-	-	2	1
Flakes, with cortex	-	1	1	-	-	-
Chips, without cortex	-	2	2	3	1	1
Chips, with cortex	1	-	-	-	-	-
Thermal shatter	-	-	1	-	-	-
Unmodified gravels, 0-5 cm, grams	572	514	647	254	466	789
Unmodified gravels, 5+ cm, number	-	-	-	-	3	4
Unmodified gravels, 5+ cm, grams	-	-	-	-	244	447
<u>Mussel shell</u>						
Total weight, grams	1	2	9	6	1	-
Number of hinges	-	-	2	1	-	-
<u>Limestone</u>						
Unburned & burned, grams	119	259	401	172	444	2452

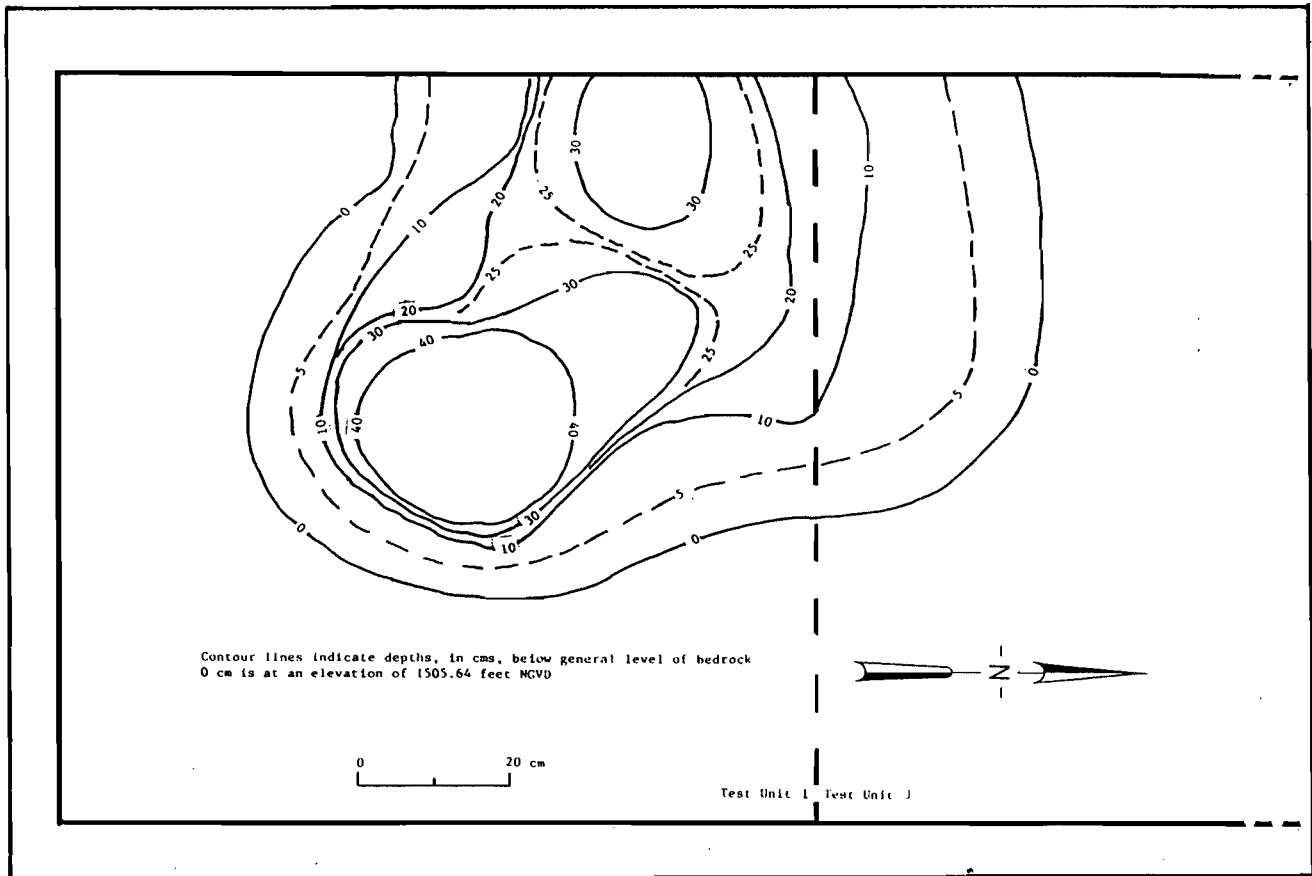


Figure 2-9. Site 41CN218, Test Units I and J, solution cavity.

TABLE 2-9.
Recovered Materials, Test Units I and J.

Description	UNIT	
	I	J
<u>Chert</u>		
Flakes/chips, edge-modified	-	1
Flakes, without cortex	3	4
Chips, without cortex	3	1
Chips, with cortex	-	1
Chunks	-	3
Thermal shatter	1	-
Unmodified gravels, 0-2 cm, grams	1339	3481
Unmodified gravels, 2-5 cm, number	39	99
Unmodified gravels, 2-5 cm, grams	945	1936
Unmodified gravels, 6-11 cm, number	17	26
Unmodified gravels, 6-11 cm, grams	2408	3146
<u>Mudstone</u>		
fragments	-	1
weight, grams	-	297

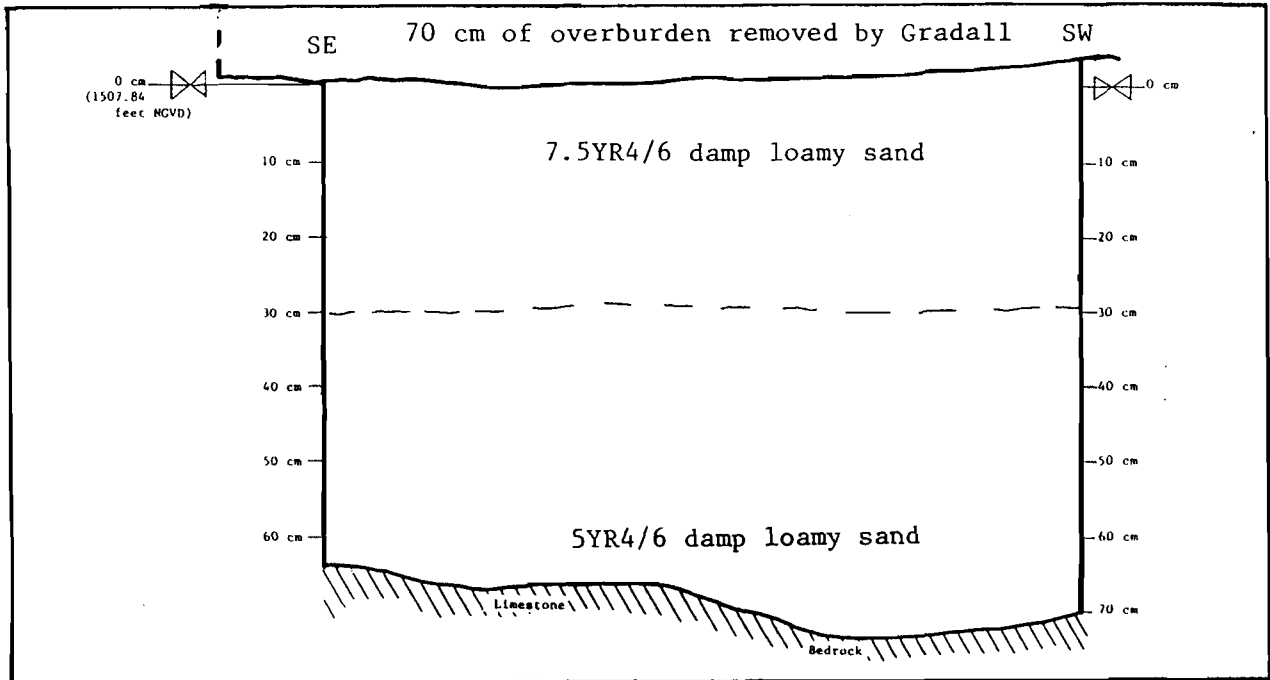


Figure 2-10. Site 41CN218, Test Unit K, profile of south wall.

TABLE 2-10.
Recovered Materials, Test Unit K, Site 41CN218.

Description	LEVEL					
	1	2	3	4	5	6
<u>Chert</u>						
Biface, fragment	-	-	-	-	-	1
Flakes, edge-modified	1	-	-	-	-	-
Flakes, without cortex	13	8	8	15	27	17
Flakes, with cortex	2	5	-	2	4	3
Chips, without cortex	6	8	4	9	17	7
Chips, with cortex	2	1	1	4	-	-
Core, fragments	-	-	-	-	1	-
Thermal shatter	1	-	-	-	-	-
Unmodified gravels, 0-2 cm, grams	447	344	365	547	752	1677
Unmodified gravels, 2-5cm, number	-	6	10	3	20	35
Unmodified gravels, 2-5cm, grams	-	94	125	26	269	870
Unmodified gravels, 5-10cm, number	-	-	4	2	3	12
Unmodified gravels, 5-10cm, grams	-	-	308	73	189	1533
Unmodified gravels, 10cm+, number	-	-	-	1	-	-
Unmodified gravels, 10cm+, grams	-	-	-	789	-	-
<u>Mudstone</u>						
Pebbles/cobbles, number	-	-	-	5	10	4
Pebbles/cobbles, grams	-	-	-	264	721	338
<u>Sandstone</u>						
Cobbles, number	-	-	-	1	-	-
Cobbles, grams	-	-	-	69	-	-

the range of the profile described for Sarita soils by the USDA-SCS (1974). No cultural stratigraphy was observed in the profile.

None of the artifacts recovered from Test Unit K (Table 2-10) were either temporally or culturally diagnostic, the biface fragment consisting of a small lateral-edge piece. Distribution of artifacts through the profile is relatively uniform, with no indication of specific occupation levels. Gravels are present in increasing amounts with depth.

The numbers of artifacts/lithic debitage recovered from this unit are relatively high compared with other units. However, most of the artifacts consist of small flakes and chips, generally less than 1 cm in length. A core fragment was also recovered from this unit, so it is reasonable to deduce that lithic reduction was undertaken in this area, even though a specific activity floor could not be identified.

Excavation of this unit confirmed the stratigraphy and general artifact distribution that was revealed by the excavation of Test Unit C. No discrete, deeply buried cultural horizon was identified.

Test Unit L

This unit was excavated at the southern end of Gradall Trench II. A platform was excavated by the Gradall to an elevation of approximately 1503.50 feet NGVD, about 45 cm below the original ground surface. The face of the platform, adjacent to the Gradall trench, was cleaned and made vertical by shovel. The unit was then laid out with the northern edge adjacent to the cut vertical edge, so that 10-cm levels could be excavated from the cut face. A total of seven levels was excavated across the entire unit. Bedrock was encountered in the seventh level over much of the unit. However, a 'hole' in the bedrock was present in the southwestern corner of the unit. This was excavated a further 40 cm.

No cultural features were observed during the excavation of this test unit, either in level floors or in wall profiles.

Stratigraphy revealed in the unit is depicted in Figure 2-11. From the surface, fill consisted of a loose, friable sand which gradually changed color with depth, from strong brown (7.5YR5/6) to between yellowish red (5YR5/6) and red (2.5YR5/6). Clay content also appeared to increase with depth. Underlying the sand, over most of the unit, was a layer of red (2.5YR5/6 to 2.5YR5/8) clay with embedded pea gravels, which overlay a cemented caliche/chert gravel conglomerate. In the southwestern corner of the unit, the clay/gravel and cemented caliche/gravel conglomerate was absent. In its place was a 'hole,' the fill of which consisted of a yellowish red (5YR5/8), friable, loose sand. No artifacts were recovered from this feature and there was no evidence in the walls above the clay/gravel layer to indicate that the feature was a man-excavated pit. Therefore, the feature was interpreted as a natural sink hole, which appears to have formed after the deposition of the clay/pea-gravel deposit, but before the deposition of the upper loose sandy material.

None of the artifacts recovered from the unit (Table 2-11) are temporally or culturally diagnostic. The distribution of artifacts through the soil column suggests a gradual lessening of artifact density with depth; this is probably the result of natural factors. The increase in artifacts in Level 5 is probably the

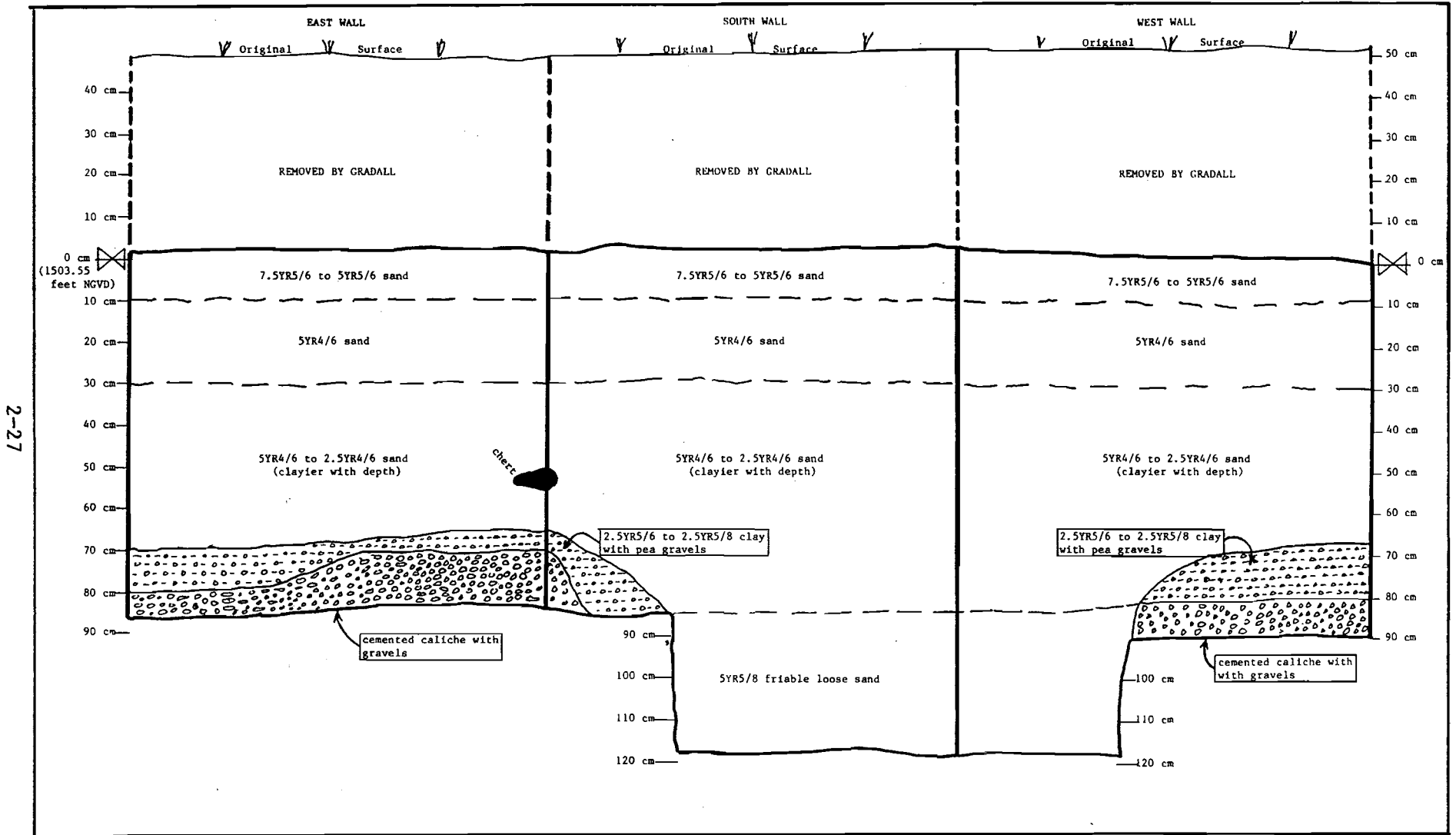


Figure 2-11. Site 41CN218, Test Unit L, profiles.

TABLE 2-11.
Recovered Materials, Test Unit L, Site 41CN218.

Description	LEVEL						
	1	2	3	4	5	6	7
<u>Chert</u>							
Uniface, scraper	-	1	-	-	-	-	-
Flakes, without cortex	2	7	3	6	10	5	1
Flakes, with cortex	13	1	1	-	1	1	-
Chips, without cortex	3	3	4	2	7	2	-
Unmodified gravels, 0-2 cm, grams	422	411	523	784	1157	1649	7439
Unmodified gravels, 2-5cm, number	5	4	13	9	23	34	42
Unmodified gravels, 2-5 cm, grams	118	128	253	208	530	757	913
Unmodified gravels, 5-10 cm, number	-	1	1	1	3	3	6
Unmodified gravels, 5-10 cm, grams	-	206	37	52	85	127	630
Unmodified gravels, 10+ cm, number	-	-	-	1	-	2	-
Unmodified gravels, 10+ cm, grams	-	-	-	859	-	668	-
<u>Mudstone</u>							
Pebbles/cobbles, number	-	5	-	-	-	-	-
Pebbles/cobbles, grams	-	398	-	-	-	-	-

result of settling on, or close to, the clay/pea-gravel surface. Gravels increase in frequency with depth. Excavation of the unit did not indicate any discrete, deeply buried cultural horizon.

Test Unit M

This unit was excavated at the northeastern margin of the site, adjacent to the field road. Its location permitted investigation of the lower, redder, more clayey soil exposed in the field road cut. The Texas Antiquities Commission representative who visited the site specifically requested that this soil be investigated even though surface examination indicated that cultural materials were not eroding from this soil.

The existing eroding cut edge adjacent to the west side of the field road was cut back to a vertical edge with the Gradall. The overlying browner sand was then removed to just above the redder, more clayey soil, at a depth of approximately 50 cm below the original ground surface. Elevation of this cut surface was approximately 1493.50 feet NGVD. The unit was then laid out with its eastern edge at the cut vertical face so that 10-cm levels could be excavated from the eastern edge of the unit. The first level excavated was uneven, being 18 cm thick at the southwest corner, 6 cm thick at the northeast corner and 10 cm thick at the other two corners. The next four levels were each 10 cm in thickness. The final, sixth level, extending to bedrock across the entire unit, was uneven, 12 cm thick at the eastern edge and 20 cm thick at the western edge.

No features were observed during the excavation of this test unit, either in level floors or in wall profiles.

Stratigraphy revealed by the profiles is depicted in Figure 2-12. As explained above, the upper brown (yellowish brown, 10YR5/6) sand was almost entirely removed by Gradall. The underlying redder soil (yellowish red, 5YR4/6) became gradually more clayey with depth, and overlay a thin stratum of dark red (2.5YR3/6) clay with pea-gravels, which overlay limestone bedrock. There was no evidence of cultural stratification within the redder soil deposits.

Only one cultural artifact, a flake without cortex, was recovered from the unit (Table 2-12). This originated from the first level and was undoubtedly associated with the remnants of the upper, browner deposits.

The excavation of this unit confirmed the observations made from the eroding field road cut. That is, that cultural deposits were confined to the upper, browner sands, and that the lower, redder sands and sandy clays were culturally sterile.

Gradall Trench I

This trench was excavated close to the western limit of the right-of-way, on the highest portion of the site within the right-of-way. It was located slightly east of Test Unit C, which was hand-excavated to a depth of 160 cm during initial testing. However, the location of Test Unit C was obscured during machine clearing of the right-of-way edge, and thus, was not visible during the present testing.

The trench revealed a profile (Figure 2-13) similar to that revealed by Test Units C and D. The profile consisted mainly of friable, unconsolidated sands, overlying a limestone bedrock, the surface of which was at a depth of approximately 200 cm. Color of the moist sands ranged from strong brown (7.5YR4/6 to 7.5YR5/6) at the surface to yellowish red (5YR4/6) just above the bedrock. No distinct, abrupt color changes were observed, the color changing only gradually. After more than a day of drying, a slightly darker, possible old, ground surface was observed at a depth of between approximately 50 and 90 cm. This would be in agreement with the results of Test Unit C, which first yielded cultural material at a depth of 50 to 60 cm below the present surface.

Apart from the faintly discernible old ground surface, no cultural stratification or cultural features were observed in the walls of the trench.

Gradall Trench II

This trench was excavated east of Gradall Trench I, approximately midway between Gradall Trench I and the field road. Bedrock was encountered at a depth of approximately 125 cm. The profile (Figure 2-14) again revealed mostly loose, friable sands. However, a slightly more pronounced difference was observed in the coloration of the sands, the upper approximately 70 cm being observed as brown to dark brown (7.5YR4/4) when moist, and the lower 55 cm being yellowish red (5YR4/6) when moist. Between the sands and the bedrock was a thin stratum, about 5 cm thick, of red (2.5YR5/6) clay with pea-gravels.

No cultural stratification or features were observed in the walls of this trench.

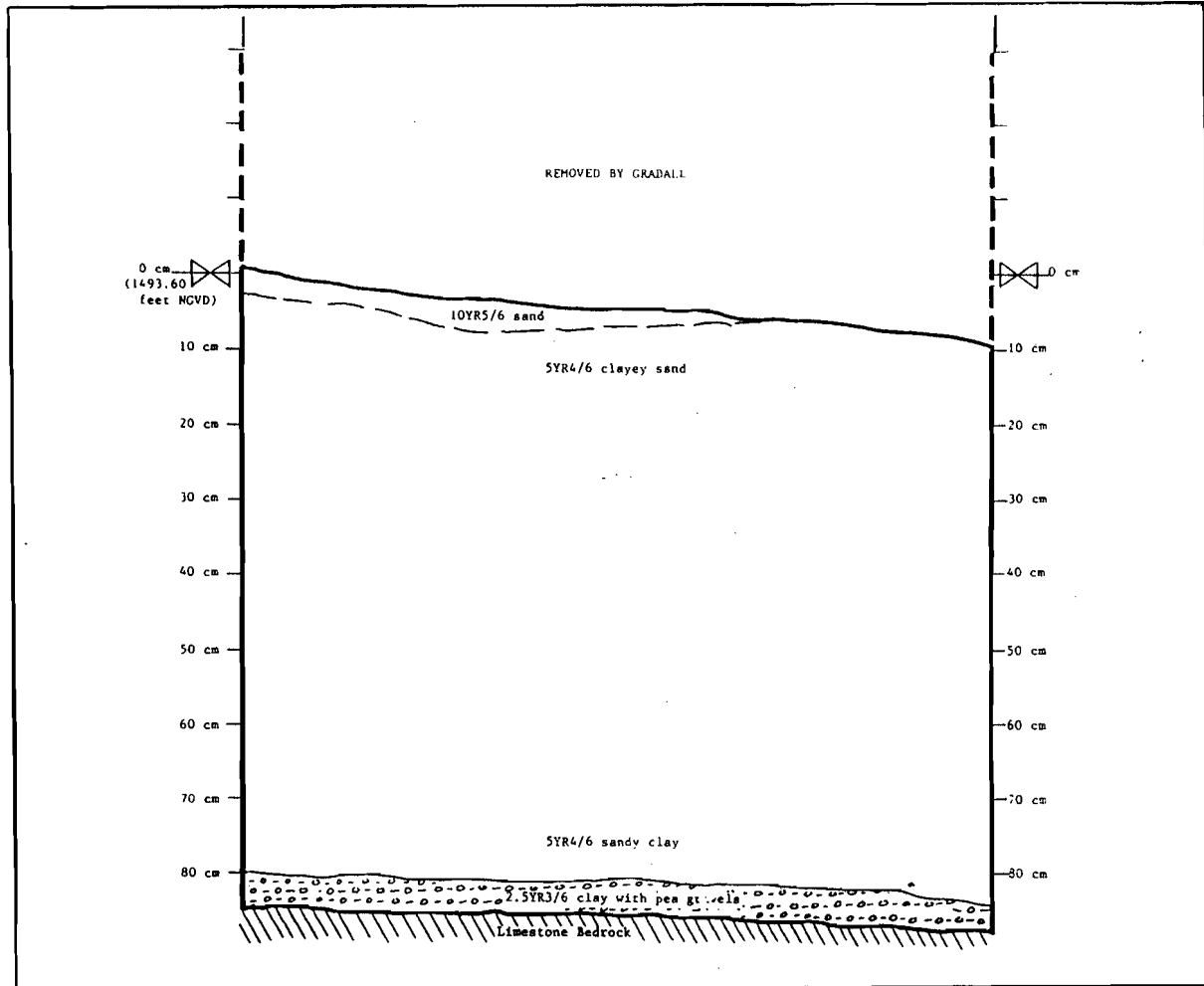


Figure 2-12. Site 41CN218, Test Unit M, profile of west wall.

TABLE 2-12.
Recovered Materials, Test Unit M, Site 41CN218.

Description	LEVEL					
	1	2	3	4	5	6
<u>Chert</u>						
Flakes, without cortex	1	-	-	-	-	-
Unmodified gravels, 0-2 cm, gram	383	271	201	51	464	2229
Unmodified gravels, 2-5cm, number	7	7	4	-	20	51
Unmodified gravels, 2-5 cm, grams	150	99	66	-	517	1173
Unmodified gravels, 5-10 cm, number	-	-	-	-	1	2
Unmodified gravels, 5-10 cm, grams	-	-	-	-	135	133
Unmodified gravels, 10+cm, number	-	-	-	-	-	2
Unmodified gravels, 10+cm, grams	-	-	-	-	-	564

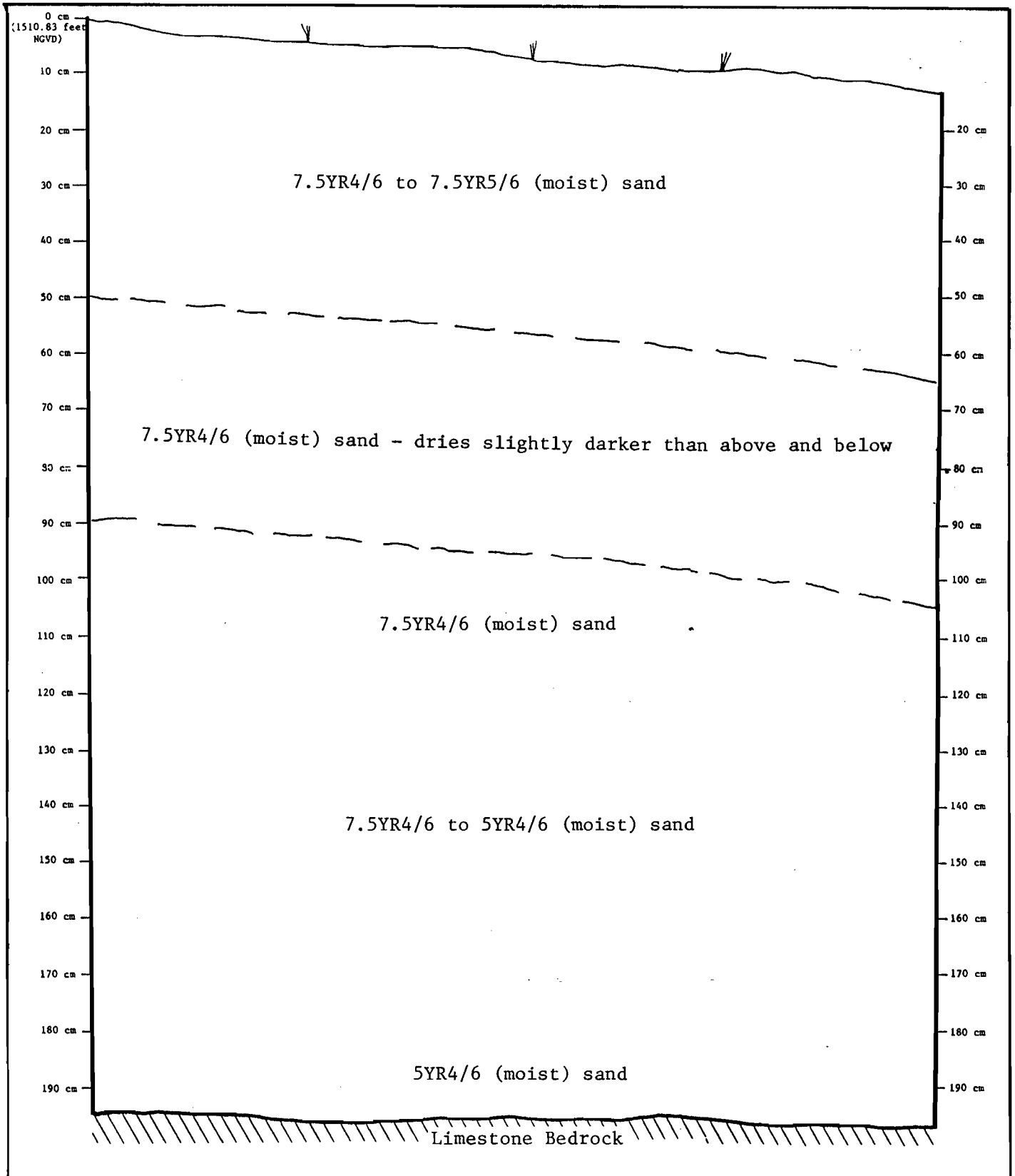


Figure 2-13. Site 41CN218, Gradall Trench I, profile, north wall.

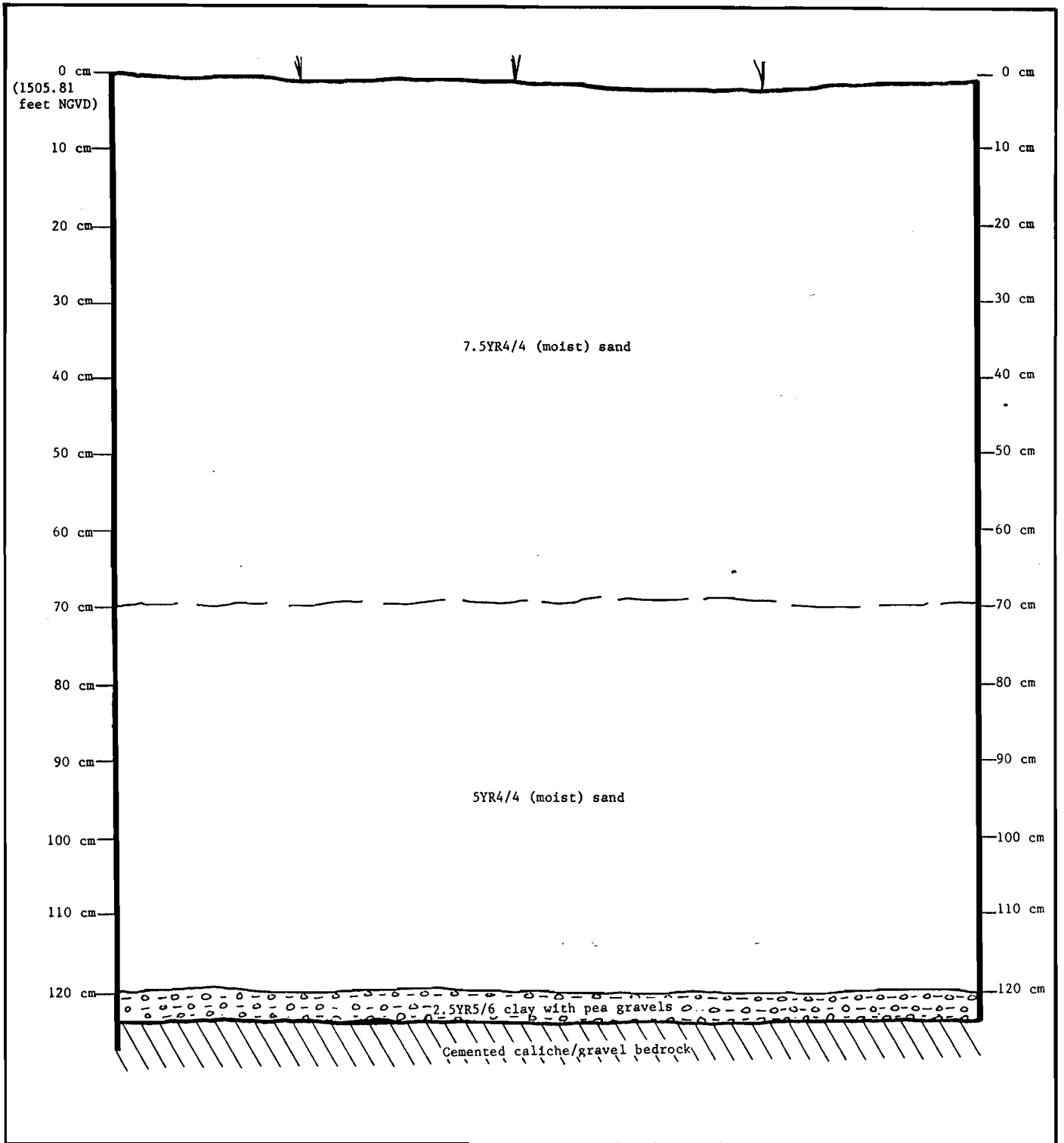


Figure 2-14. Site 41CN218, Gradall Trench II, profile, east wall.

Gradall Trench III

This trench was excavated adjacent to the field road crossing the site in the vicinity of the right-of-way centerline. Excavation consisted of cutting back the existing eroded bank of the field road to form a vertical edge with a clean profile (Figure 2-15). This profile revealed the most distinctive stratigraphy observed at the site, with a clear boundary between the upper approximately 55 cm of yellowish brown (10YR5/6), loose, friable sand and the underlying yellowish red (5YR4/6) clayey sand, which became increasingly more clayey with depth. Just above the limestone bedrock was a thin layer, approximately 5 cm thick, of stiff clay and pea-gravels. Limestone bedrock, at a depth of approximately 125 cm, was observed to slope down to the north.

No clear evidence of cultural stratigraphy was observed in the profile, nor were any cultural features observed.

ARTIFACT DESCRIPTIONS

Artifact counts from individual unit levels have been presented above under the heading of each test unit. This section tabulates the total numbers of artifacts from individual levels (Table 2-13), and presents descriptions of the individual classes of artifacts, as well as descriptions of individual artifacts where such are thought pertinent.

Chipped Chert Lithics

All of the chipped lithic artifacts recovered from the site are made from chert.

Bifaces

Only two fragments of bifacially chipped lithic artifacts were recovered from the site. Both fragments are small, lateral edge sections, too small to allow comparison with previously defined biface types.

One fragment (Figure 2-16a), from Test Unit C, Level 12, had been thermally fractured. Material is a pinkish gray, thermally altered chert. Dimensions are: length, 1.2 cm; width, 1.8 cm; thickness, 0.7 cm.

The other fragment (Figure 2-16b), from Test Unit K, Level 6, was made from a grayish brown chert. Dimensions are: length, 2.1 cm; width, 1.6 cm; thickness, 0.65 cm.

Unifaces

Only one artifact was considered to be a true uniface. This artifact (Figure 2-16c), from Test Unit L, Level 2, is a scraper. The large flake exhibits fine even retouch along one side and the adjacent convex distal corner. The opposite edge exhibits a short length of steep retouch, perhaps edge blunting, adjacent to the distal end. Cortex remains over much of the retouched surface of the flake. The distal end terminates in a hinge fracture. Material is a light gray to very pale brown (10YR7/2 to 10YR7/3), dull-looking chert, with a brown (7.5YR5/4) cortex. Dimensions are: length, 7.2 cm; width, 5.0 cm; thickness, 1.5 cm.

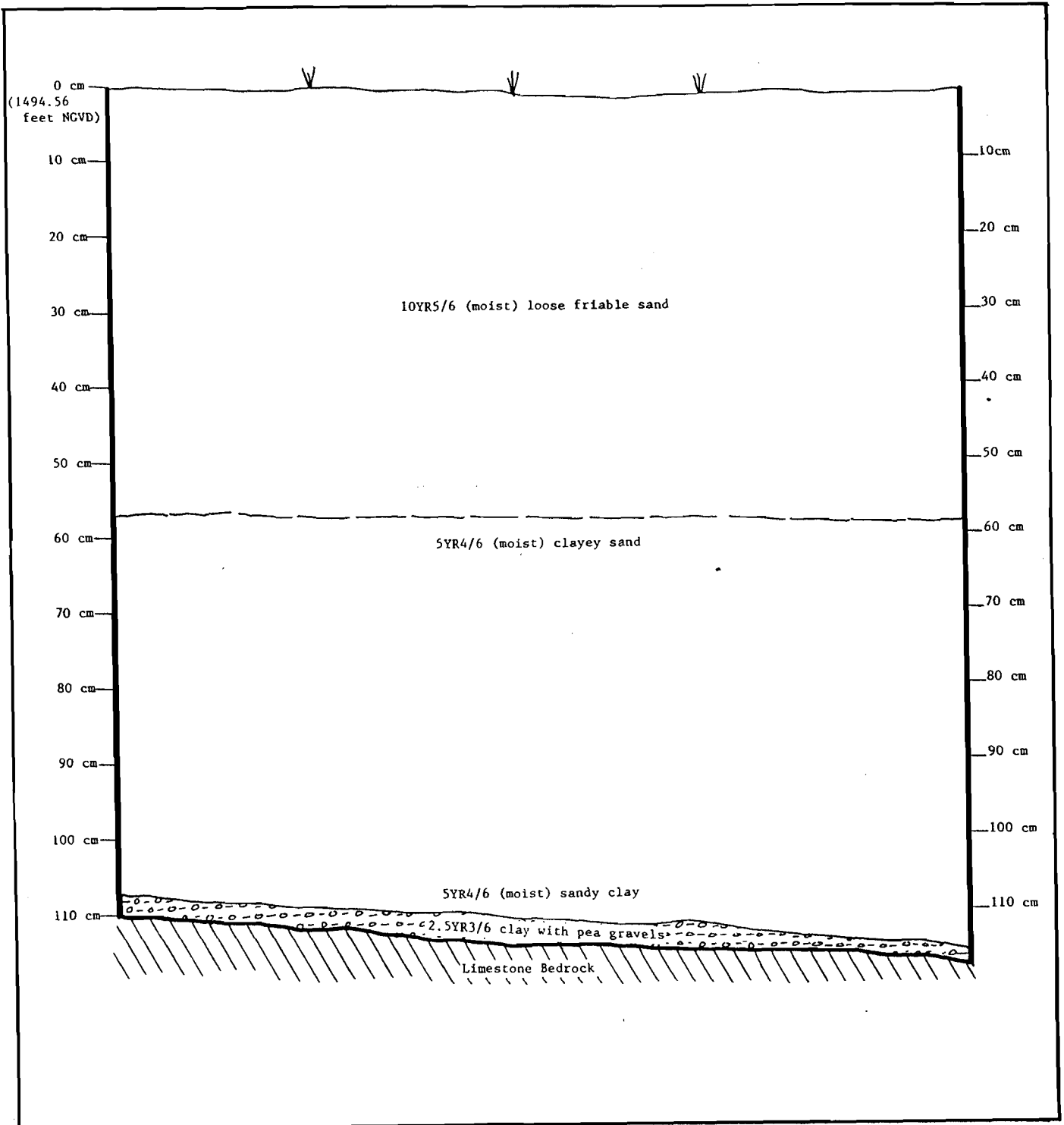


Figure 2-15. Site 41CN218, Gradall Trench III, profile, west wall.

TABLE 2-13.
Summary of Recovered Materials, Site 41CN218.

Description	UNIT													TOTAL
	A	B	C	D	E	F	G	H	I	J	K	L	M	
<u>Chert</u>														
Biface, fragment	-	-	1	-	-	-	-	-	-	-	1	-	-	2
Uniface, scraper	-	-	-	-	-	-	-	-	-	-	-	1	-	1
Flakes, edge modified	2	3	2	1	3	4	2	-	-	1	1	-	-	19
Flakes, without cortex	35	17	58	14	16	5	9	4	3	4	88	34	1	288
Flakes, with cortex	14	5	20	3	9	5	5	2	-	-	16	17	-	96
Chips, without cortex	28	8	50	12	17	12	8	9	3	1	51	21	-	220
Chips, with cortex	16	6	4	1	10	-	1	1	-	1	8	-	-	48
Cores	-	-	-	-	1	1	-	-	-	-	1	-	-	3
Chunks	3	3	-	-	-	-	-	-	-	3	-	-	-	9
Pebbles and cobbles, split frags.	-	-	-	-	2	-	1	-	-	-	-	-	-	3
Thermal shatter	3	4	15	2	12	3	11	1	1	-	1	-	-	53
Unmodified gravels, 0-5 cm, grams	7816	6079	4079	1872	2118	152	1588	3242	2284	5417	5516	15291	5604	61059
Unmodified gravels, 5+ cm, number	5	2	3	-	11	-	-	7	17	26	22	18	5	116
Unmodified gravels 5+ cm, grams	379	321	312	-	949	-	-	691	2408	3146	2892	2664	832	14594
<u>Mussel shell</u>														
Total weight, grams	48	56	1	-	588	42	126	19	-	-	-	-	-	880
Number of hinges	22	8	-	-	90	8	19	3	-	-	-	-	-	150
<u>Bone</u>														
Calcified, unidentified frags.	-	8	-	-	-	-	-	-	-	-	-	-	-	8
silicified, antler	1	-	1	-	-	-	-	-	-	-	-	-	-	2
silicified, turtle	1	-	-	-	-	-	-	-	-	-	-	-	-	1
<u>Hematite</u>														
Fragments, number	-	1	-	1	38	-	4	-	-	-	-	-	-	44
Weight, grams	-	4	-	1	16	-	3	-	-	-	-	-	-	24
<u>Limestone</u>														
Unburned, grams	6305	8651	277	208	-	-	-	-	-	-	-	-	-	15441
Burned, grams	2315	4419	911	-	-	-	-	-	-	-	-	-	-	7645
Undifferentiated, grams	-	-	-	-	16883	1436	16249	3847	-	-	-	-	-	38415
<u>Mudstone</u>														
Fragments, number	-	-	-	-	-	-	-	-	-	1	19	5	-	25
Weight, grams	-	-	-	-	-	-	-	-	-	297	1323	398	-	2018
<u>Sandstone</u>														
Cobbles, number	-	-	1	-	-	-	-	-	-	-	1	-	-	2
Slab, fragments	-	-	2	-	-	-	-	-	-	-	-	-	-	2
<u>Iron</u>														
Fence staple	-	-	-	1	-	-	-	-	-	-	-	-	-	1

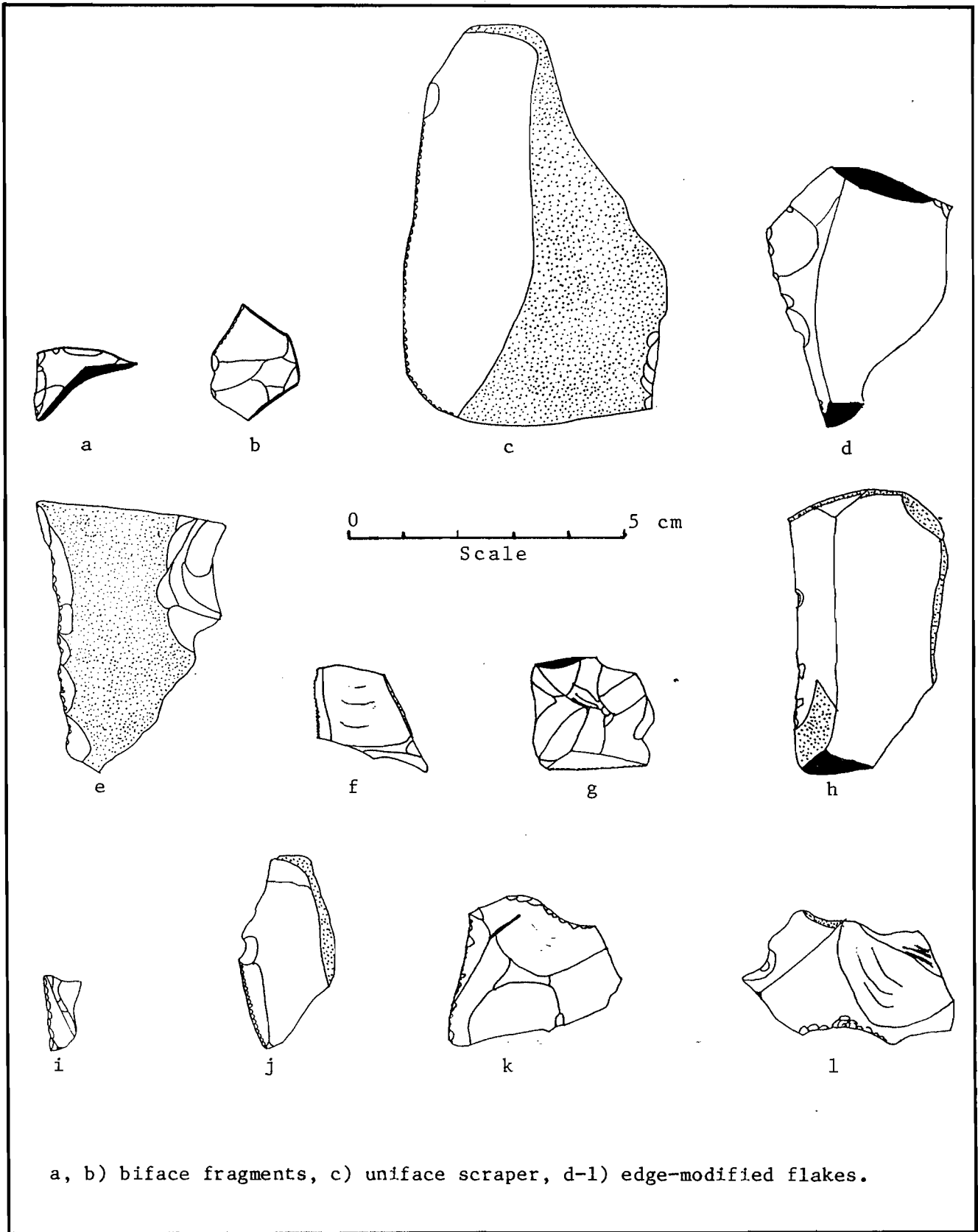


Figure 2-16. Artifacts, Site 41CN218.

The scraper cannot be assigned to any specific temporal period or cultural affiliation, as such artifacts were used for long time periods by numerous cultural groups.

Flakes and Chips with Modified Edges

Edge modification, ranging from apparently deliberate edge-shaping and blunting to occasional accidental scarring from use, was identified on nineteen flakes or chips. The general appearance of these artifacts is that they were tools of expediency, using available flakes, rather than being purposefully struck flakes. The flakes and chips appear to have been used for a variety of functions including cutting, scraping, and possibly graving or piercing. Individual artifacts are described in Table 2-14 and illustrated in Figures 2-16 and 2-17. None of the artifacts are temporally or culturally diagnostic.

Flakes

A total of 384 flakes was recovered from the site, 96 with cortex and 288 without. All included evidence of a striking platform and/or bulb of percussion. None are temporally or culturally diagnostic. Most are of light-colored cherts, in the range of light gray, light brownish gray, very pale brown, and white.

Chips

A total of 268 chips was recovered from the site, 48 with cortex and 220 without. The chips represent distal fragments of flakes, or shatter resulting as a byproduct of flaking. None of the chips include evidence of a striking platform or bulb of percussion. The chips are of material similar to the flakes. Most are small, less than 1.5 cm in length. None are temporally or culturally diagnostic.

Cores

Three chert fragments were identified as cores or core fragments. They were identified by the presence of numerous flake scars on their surfaces. None of the fragments evidenced any pattern to the flaking, the flake removals appearing to be random with no obvious attempt to shape the core or to achieve any particular flake shape or size. Materials were similar to those of the flakes.

Chunks

Nine chunks of chert were recovered. These were angular and blocky in nature, with less flake scarring than the pieces identified as cores.

Split Pebbles and Cobbles

Three split pebble/cobble fragments were recovered. As their name implies, these artifacts consist of pebble or cobble fragments, still retaining cortex over much of their surfaces, and with one to three flake scars.

Thermal Shatter

Fifty-three fragments of thermally broken/shattered chert were recovered. They ranged from small potlids, to larger flake-like pieces, to angular chunks.

TABLE 2-14.
Flakes and Chips with Modified Edges, Site 41CN218.

Provenience Unit/Level (Figure)	Modification and Possible Function	Overall Artifact Description		Overall Dimensions (cm)		
		type of flake	material color lustre	L	W	T
A 2 (Figure 2-16:d)	1 straight edge section with coarse flaking. Probably a scraper.	interior flake	chert 10YR7/2 dull	4.6	3.4	1.5
A 4 (Figure 2-16:e)	1 straight edge with flaking in cortex, & steep flaking on opposite edge. Probably a scraper.	chip, w/cortex	chert 10YR6/1 semi-gloss	4.7	3.5	1.5
B 3 (Figure 2-16:f)	1 straight edge section with minor flaking. Prob. used for cutting.	flake w/cortex	chert 10YR6/1 semi-gloss	2.7	1.6	0.4
B 4 (Figure 2-16:g)	1 straight edge section with minor flaking. Prob. used for cutting.	interior chip, possibly blade end fragment	chert, fossilifer. 5YR5/2 semi-gloss	2.0	2.0	0.6
B 7 (Figure 2-16:h)	1 straight edge section with minor flaking. Prob. used for cutting.	blade, w/cortex	chert 10YR6/1-10YR6/2 dull	5.1	2.8	1.0
C 7 (Figure 2-16:i)	1 straight edge section very small fragment, very even flaking. Could be edge-blunting or from scraping.	interior chip	chert 10YR6/1 semi-gloss	1.3	0.8	0.2
C 11 (Figure 2-16:j)	1 straight edge section very even flaking. Probably a scraper.	flake w/cortex	chert 10YR8/2 dull	3.4	1.8	0.5
D 8 (Figure 2-16:k)	1 straight edge section with minor flaking on both faces. Edge- blunting also present. Prob. used for cutting.	interior flake	chert 10YR6/2 semi-gloss	2.8	3.0	0.5
E 0 (Figure 2-16:l)	3 sections of concave edge, on both faces, exhibit flaking. Prob. a scraper.	flake w/small amount of cortex on one edge	chert 10YR6/1 semi-gloss	2.1	3.8	0.8
E 1 (Figure 2-17:a)	2 concave sections, 1 probably shovel-made. Probably a scraper.	thick flake or split pebble, w/cortex	chert 10YR6/1 & 10YR6/2 dull	5.8	3.8	2.0
E 4 (Figure 2-17:b)	3 straight sections with very minor flaking on both faces. Prob. used for cutting.	flake w/minor amount of cortex	fossiliferous chert 5YR5/1 semi-gloss	4.2	2.8	1.1

TABLE 2-14 (continued).
Flakes and Chips with Modified Edges, Site 41CN218.

Provenience Unit/Level (Figure)	Modification and Possible Function	Overall Artifact Description		Overall Dimensions (cm)		
		type of flake	material color lustre	L	W	T
F 0 (Figure 2-17:c)	1 straight & 1 denticulate edge section. Scraping or accidental surface damage.	flake w/cortex	chert, mottled 10YR7/1 & 10YR6/2 semi-gloss	1.9	1.3	0.6
F 1 (Figure 2-17:d)	2 straight sections w/ apparerent work flakes & 2 sections w/edge-blunting. Probably a scraper.	flake w/cortex	chert 10YR5/1 - 10YR4/1 semi-gloss	4.1	2.7	1.0
F 1 (Figure 2-17:e)	1 straight section w/flaking on 1 face, & 1 straight section w/minor flaking on both faces. Scraping &/or cutting.	interior chip	chert 10YR5/1 semi-gloss	1.6	1.5	0.3
F 1 (Figure 2-17:f)	Blunting on 2 converging edges Graving/Piercing.	biface thinning flake	chert 10YR7/2 semi-gloss	2.2	0.9	0.5
G 1 (Figure 2-17:g)	Steep flaking/blunting on 1 section; minor flaking/blunting on 1 section; 1 section flaked, possibly from scraping. 1 point possibly used as gouge.	interior flake	chert 10YR6/2 - 10YR7/2 semi-gloss	6.3	3.7	1.7
G 2 (Figure 2-17:h)	1 straight section w/irregular, coarse flaking. Possibly accidental.	interior chip	chert 10YR7/2 dull	3.5	3.1	0.8
J 1 (Figure 2-17:i)	1 straight section, probably a small frag. from a scraper.	interior chip	chert 10YR6/2 semi-gloss	1.0	1.3	0.4
K 1 (Figure 2-17:j)	1 straight section, & 1 concave section, on opposite faces. Possible broken drill.	interior flake	chert 10YR6/2 dull	3.4	2.3	1.1

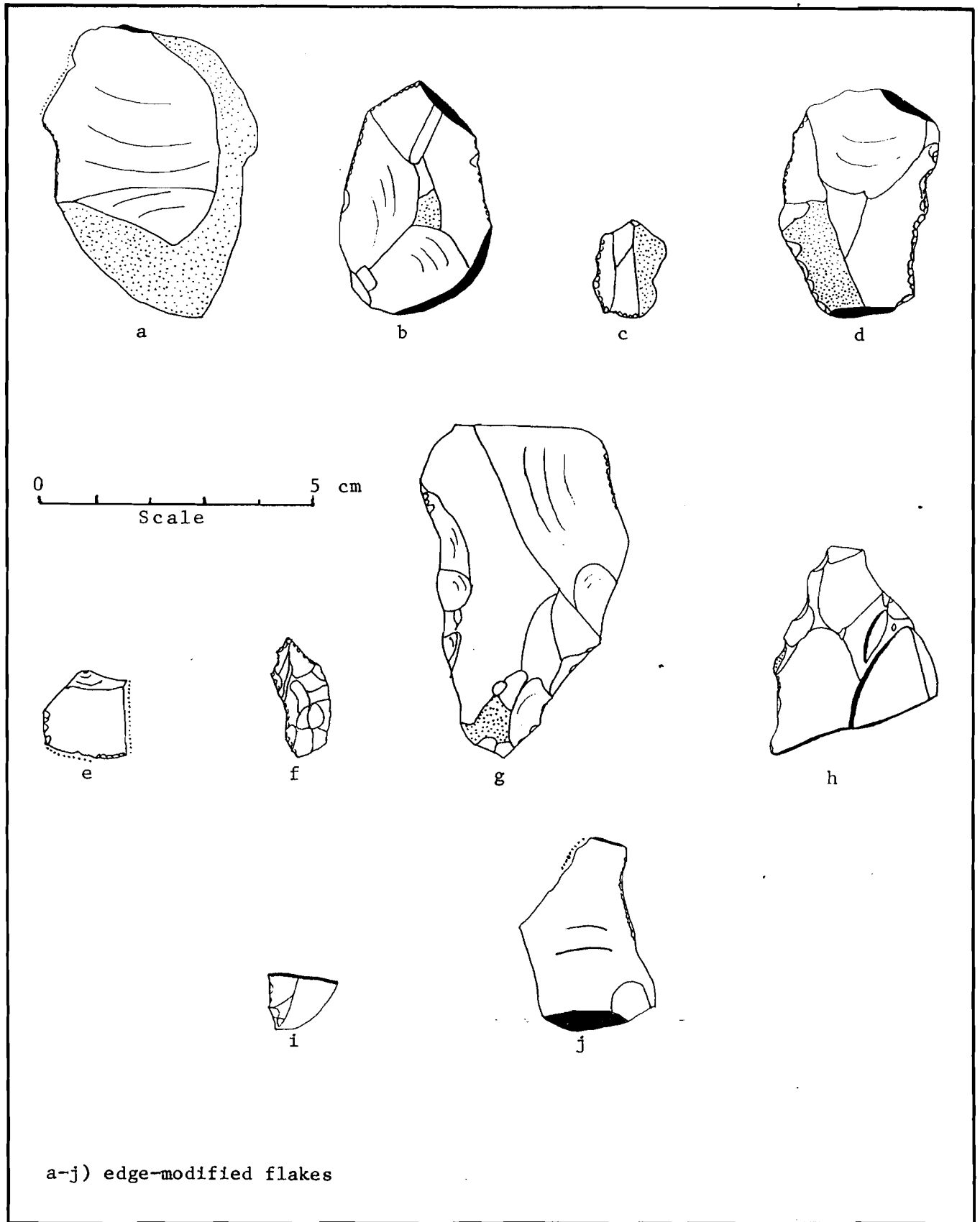


Figure 2-17. Artifacts, Site 41CN218.

Other Lithics

Unmodified Chert Gravels

Unmodified chert gravels represented the bulk of the materials returned to the laboratory, just over 75 kilograms. Most were less than 5 cm in diameter, with the greater part being smaller than 2 cm in diameter. Only 116 gravels larger than 5 cm in diameter were identified in the collection, representing about 19 percent by weight. All of the gravels appeared to be naturally occurring on the site.

Hematite

Thirty-four small fragments of hematite were found in the materials returned to the laboratory. All appeared to be of natural occurrence on the site.

Limestone

Over 61 kilograms of limestone were returned to the laboratory, and large amounts were left in the field from some of the units. Attempts were made to differentiate burned from unburned limestone from Test Units A through D. However, such an attempt was not made for Test Units E through H, where much of the material was fairly heavily weathered, making differentiation difficult. None of the limestone had been heated sufficiently to cause major physical alteration. In general, burned limestone had a grayer color than fresh natural limestone in the area, but the color was similar to exposed weathered rock. Limestone occurs naturally at the site.

Mudstone

Several rounded gravels of gray-colored, very friable stone were identified as mudstone. Textures ranged from fine-grained, clay-like material to clay-like material with sand grains. They may represent a combination of river-rolled, decomposing shale fragments, and clayey concretions formed in running water. They appear to be naturally occurring on the site, probably originating from the same source as the chert gravels.

Sandstone

Two sandstone cobbles and two small tabular fragments of sandstone were recovered from the site. The materials were extremely friable. None exhibited any evidence of having been used culturally.

Faunal Remains

Bone

All of the bone material recovered from the site was highly fossilized. Two silicified fragments were tentatively identified as fragments of antler, and another silicified fragment was identified as a segment of turtle plastron or carapace. The siliceous nature of these fragments may be an indication that they originated with the gravels that occur naturally on the site. Eight fragments of calcified bone, each less than 1 cm in length, were also recovered. They could not be identified to species, but appeared to be fragments of long bone. It was

not determined whether or not these calcified fragments were associated with the cultural material on the site.

Mussel Shell

All of the mussel shell recovered from the site was extremely weathered and eroded, making species identification impossible. The mussel shell was mainly recovered from contexts where it was in close association with limestone, the limestone presumably having neutralized the acid nature of the sands on the site.

Other Materials

The only other material recovered from the site consisted of a historic, iron fence staple, from the first level of Test Unit D. This is not associated with the prehistoric occupation of the site.

SUMMARY/DISCUSSION

A total of thirteen 1 meter x 1 meter units were hand-excavated, and three trenches were excavated by Gradall. These excavations did not reveal any evidence of discrete cultural stratigraphy. Rather it appeared that artifacts were scattered throughout the upper brownish soil horizon, which in places reached depths of about 2 meters.

The only feature tentatively recognized consisted of a limestone hearth. This was not associated with any diagnostic artifacts, identifiable cultural living surface, or any ash or charcoal.

None of the artifacts recovered from the excavations were temporally or culturally diagnostic. For the most part, artifacts consisted of lithic debitage, with a few utilized flakes, one uniface (a scraper), and two very small biface fragments. The nature of the debitage suggests that lithic activities were largely confined to final tool manufacture, at least within that part of the site tested. The utilized flakes suggest that scraping, cutting, and perhaps graving or piercing activities took place on the site.

Faunal remains consisted of a few small fragments of fossilized bone which could not be directly associated with cultural remains, and highly weathered fragments of mussel shell.

The nature of the recovered remains is not conducive to the identification of specific activity areas, or other horizontal cultural patterning. Gross artifact counts indicate a higher density of artifacts along the western margin of the right-of-way. However, it was obvious from surface inspection of the area that the right-of-way crossed the eastern margin of the site, and that artifacts appeared with considerably greater frequency to the west of the right-of-way. The distribution of mussel shell across the site appeared to be affected by the presence of limestone, at or near the surface. Presumably, the limestone was neutralizing the acid nature of the sands over much of the rest of the site.

On the basis of the above, it is believed that those portions of the site within the highway right-of-way are not worthy of designation as a State Archeological Landmark.

SECTION 3 - TESTING IN THE FM 1929 RIGHT-OF-WAY IN THE VICINITY
OF SITE COMPLEX 41CC48/49/50/51 and SITE 41CC52

PREVIOUS SITE INVESTIGATIONS

Site Complex 41CC48/49/50/51

Sites 41CC48, 41CC49, 41CC50, and 41CC51 were initially identified and recorded by Espey, Huston and Associates, Inc. (1981a). Although sites 41CC48, 41CC49, 41CC50, and 41CC51 were recorded as individual sites, they were apparently locales of artifact concentrations, features, or "Behavioral Episodes" of a single continuous artifact scatter that has been referred to as site complex 41CC48/49/50/51. The complex is located in, or adjacent to, a large gully south of the Colorado River and about 400 meters east of the Stacy Reservoir Dam site. The following information on the individually recorded sites was obtained from the site forms, on file at TARL. Site 41CC48 consisted of a 30-meter-long exposure of burned limestone, lithic debris, and mussel shell, eroding from the west bank of the gully. Site 41CC49 consisted of a burned rock midden covering an area about 10 meters in length along the gully, and extending up to 25 meters west of the gully. The midden, which varied in depth from the surface to a depth of 1 meter, had a maximum observed thickness of about 50 cm. Observed with the burned rock were unburned mussel shells, unburned bone, and lithic flakes and debitage. Site 41CC50 consisted of a 20-cm-thick lens of unburned mussel shell and small burned limestone fragments eroding from the east bank of the gully. The lens was observed along a 40-meter length of the gully, at a depth of about 120 cm. It was not determined how far the lens extended to the east of the gully. Site 41CC51 consisted of an accumulation of burned rock, unburned mussel shell, and lithic debitage covering a surface area of 30 meters by 15 meters. A gully crossing the concentration also revealed a buried cultural zone, 20 cm in thickness at a depth of about 70 cm.

In 1987, the complex was revisited and re-assessed (Bailey et al. 1989). At that time the site complex was estimated to cover an area 250 meters by 175 meters, and to include "two Type I burned rock middens; at least three areas of dart points, lithic debitage, ground stone, mussel shells, and burned rocks; and at least four areas of mussel shells and burned rocks" (ibid., 121). The site update form adds that at least five areas of buried cultural deposits were observed in the eroding margins of the gully. An Ensor dart point, suggesting a Neolithic stage occupation, and expanding stemmed and contracting stemmed/concave-based dart points were noted in the report; the site update form noted possible Darl and Lange dart points. Also in 1987, six backhoe trenches were excavated just beyond and to the east of the recorded boundaries of the complex. One of the trenches (BHT 87022-47) revealed cultural materials, lithic flakes, fire-cracked rock, and mussel shell, at depths of between 40 and 340 cm below the surface. Thus, the boundaries of the complex were enlarged to include this backhoe trench location (ibid., A-22).

Although the site was considered potentially significant, the site was cleared for dam construction by the Stacy Reservoir Archeological Committee (SRAC) on December 2, 1987, and was reportedly affected by dam construction activities by December 31, 1987 (ibid., 203).

Site 41CC52

Site 41CC52 also was recorded initially by Espey, Huston and Associates, Inc. The site, consisting of a disturbed hearth, mussel shell, and lithic debitage

(Espey, Huston and Associates, Inc. 1981a), was plotted originally near the head of the gully which included site complex 41CC48/49/50/51.

The site was revisited in 1987, at which time the site was reported to cover an area of some 25,000 square meters or more, extending southeastward from site complex 41CC48/49/50/51 (Bailey et al. 1989:122). The site included an apparently shallow artifact scatter including dart points, scraper tools, unifaces, cores, mussel shell, and burned rock fragments. Dart points collected include untyped expanding stemmed, as well as the types Martindale, Tortugas variant Taylor, and Frio, suggesting Early and Late Archaic occupations.

Based on the work conducted in 1987, the site was recommended for further testing. However, none appears to have been conducted prior to the site being cleared for dam construction by the SRAC on December 2, 1987. As of December 31, 1987, the site was apparently affected by construction activities (ibid., 203).

SITE SETTING

Site complex 41CC48/49/50/51 and site 41CC52 are effectively a single continuous site, located along the right descending bank and adjacent upland margins of the Colorado River (Figure 1-1). Elevation ranges from 1450 to 1500 feet NGVD. Topography is gently sloping. Vegetation within the highway right-of-way consisted predominantly of tall grasses growing in an abandoned field.

Site complex 41CC48/49/50/51 is located on, or in, Quaternary fluvial terrace deposits, while site 41CC52 appears to be located on Quaternary fluvial terrace deposits and adjacent Permian, Elm Creek Formation deposits which underlie the terrace deposits (Bureau of Economic Geology 1976).

Soils on which site complex 41CC48/49/50/51 is located have been identified by the USDA-SCS (1988:Map Sheet 10) as Yahola fine sandy loam, channeled; site 41CC52 is depicted as being located on Lueders-Throck association, Sagerton clay loam (1-3% slopes), and Talpa-Lueders-Cho association soils. Yahola soils formed on floodplains of the Colorado River, and Sagerton soils formed on ancient terraces. Cho soils formed on ancient terraces and outwash plains. Lueders and Talpa soils formed on uplands over broken limestone bedrock, while Throck soils formed on upland clayey marls and shaley clays.

INVESTIGATIONS WITHIN THE FM 1929 RIGHT-OF-WAY

Investigations of the site complex were confined to the highway right-of-way. They included intensive surface survey and both hand and mechanical excavation. The surface survey was aided by mechanical removal/blading along the centerline of the right-of-way to remove grasses and expose the ground surface. Hand excavations consisted of one 1 meter x 1 meter unit and four 50 cm x 50 cm shovel tests. These were dug to depths of between 50 and 100 cm. Fill was screened through 1/4-inch mesh. Mechanical investigation consisted of nine backhoe trenches, excavated to depths of between 2.5 and 3 meters on average. Both hand and mechanical investigations were focused on the area adjacent to the bank of the Colorado River (Figure 3-1) as this was considered the most critical area, both from cultural resources and project impact viewpoints. Profiles of the excavated units were recorded and matrix samples were also taken.

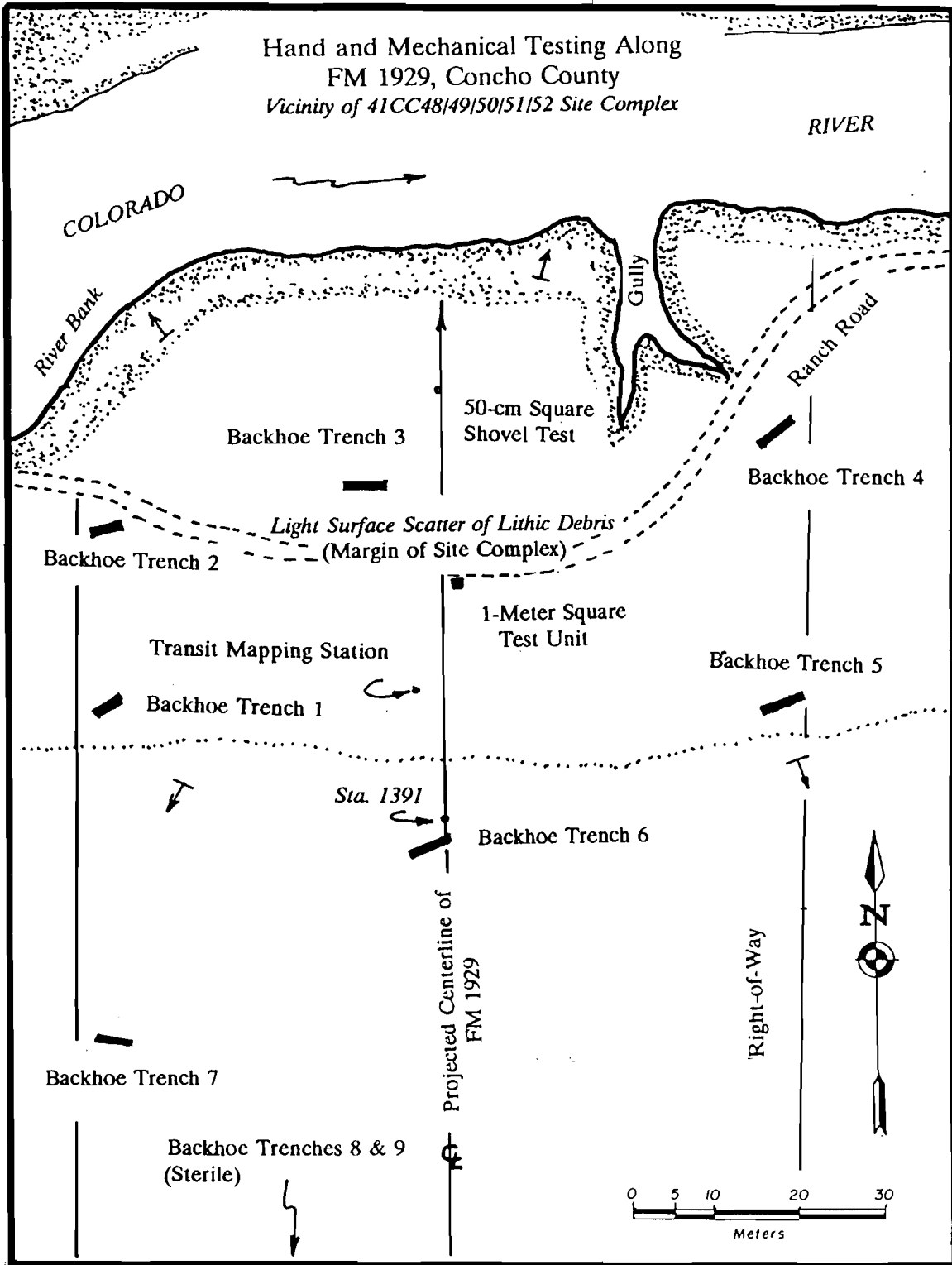


Figure 3-1. Location of test units, FM 1929 right-of-way in the vicinity of site complex 41CC48/49/50/51 and site 41CC52.

The site was mapped using a surveyor's transit, with a vertical datum of 100.00 meters being established at SDHPT project station number (survey point) 1391+00. All subsurface measurements recorded by transit were related to this datum.

A total of 144 person-hours were expended during the field work.

OBSERVATIONS AND RESULTS

The intensive surface survey along the FM 1929 right-of-way did not identify any archaeological features or concentrations of lithic materials. The project area had been extensively modified by land clearing and deep plowing. An occasional small burned rock fragment and several widely scattered fragments of lithic debris, all within 50 meters of the river channel, characterized the locale. The gully associated with site complex 41CC48/49/50/51 was found to be located approximately 350 meters beyond the right-of-way, to the west. A portion of the prehistoric lithic scatter that characterized site 41CC52 was found within and adjacent to the right-of-way on an upper terrace and the lower slopes of a hill to the south and west of the river crossing, where lithic debris was exposed in disturbed soils associated with extensive attempts to terrace the landform. The light chert scatter appeared to extend upslope and merge with multi-component site 41CC246. As none of the observed artifacts were culturally or temporally diagnostic they were not collected.

No cultural materials, features, or other indications of buried cultural strata were identified during the hand-testing or mechanical-trenching activities. Composite profiles of the trenching operation are presented in Figure 3-2. The 1-meter profile sections illustrate the range of soil deposits within the right-of-way.

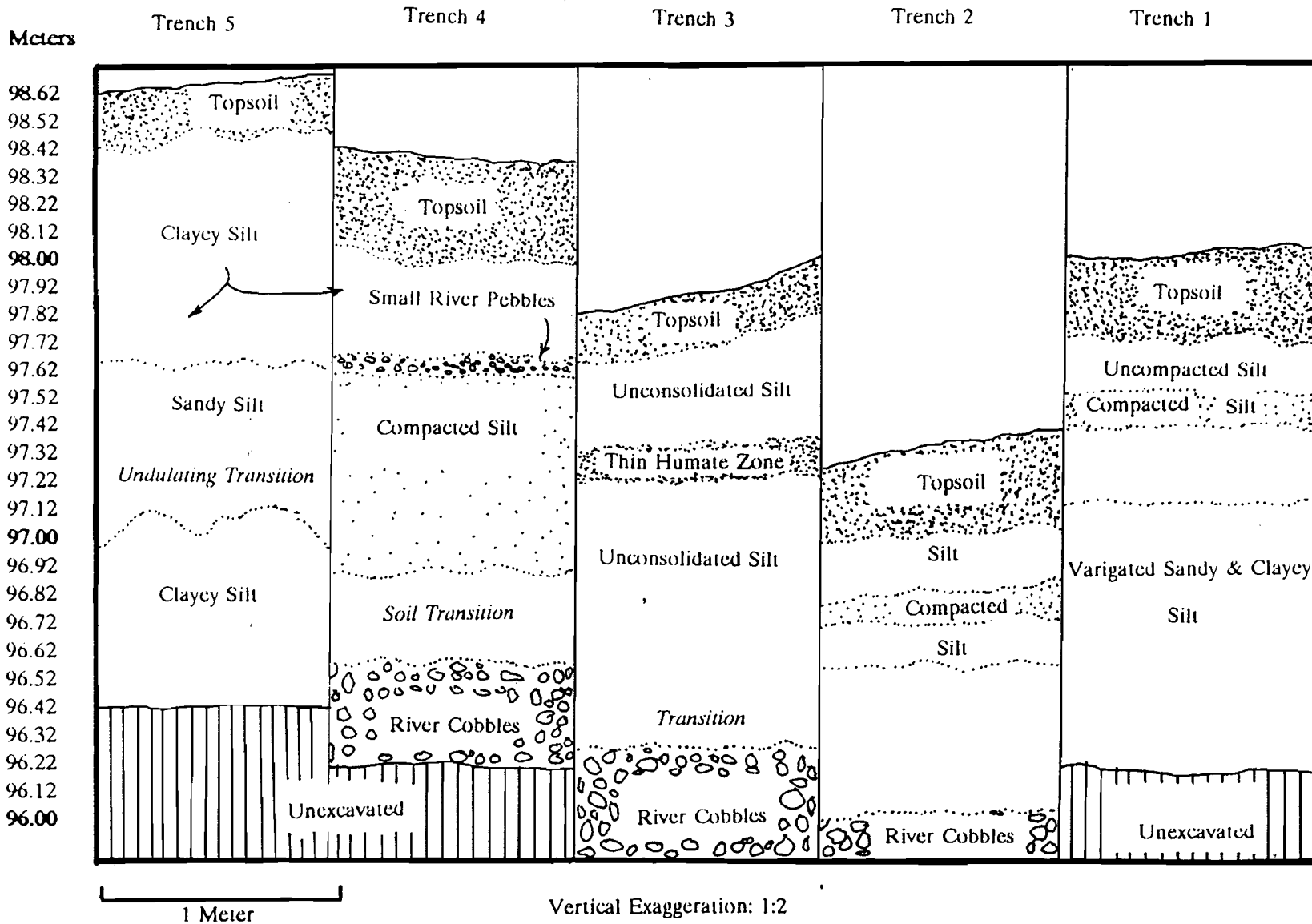
Soils parallel with the modern river channel consisted of an unconsolidated fine-grained sandy silt. Soils more distant from the channel were progressively more clayey and blocky. These appear to be associated with Yahola fine sandy loam as identified by the USDA-SCS (1988:29-30). Deposits within 50 meters of the river bank consisted of an unconsolidated, undulating, subangular, blocky topsoil 20 to 27 cm thick, with numerous root intrusions. Poorly defined stratified deposits of similar color and texture extended to a depth of approximately 2 meters below the topsoil. These deposits consisted of alternating levels of uncompacted and compacted silty and clayey matrices. The fine-grained material, the lack of natural stratigraphy, and the poor development of soil horizons may indicate a relatively rapid deposition or accumulation. "Accumulation" is used deliberately here, as the fine-grained sediments may have been reworked by both alluvial and aeolian processes.

Two episodes of alluvial or fluvial inundation were noted in profiles of Trenches 1, 2, and 3. A compacted clayey silt with river gravels, pebbles, and small cobbles was observed at a depth of 110 to 130 cm. Given the thin layer of material, short episodes of flooding are considered to have been more likely. Additionally, an ancestral Colorado River channel appears to have migrated slowly northward against a limestone bluff outcropping in this area. A thick, almost impenetrable deposit of large river cobbles was encountered about 100 to 200 cm below the surface in several trenches adjacent to the modern channel.

COMPOSITE TRENCH PROFILES
FM 1929 Right-of-Way, Concho County
Vicinity of Site Complex 41CC48/-49/-50/-51/-52

West

East



3-5

Figure 3-5. Composite profiles, Trenches 1 - 5, FM 1929 right-of-way in the vicinity of site complex 41CC48/49/50/51 and site 41CC52.

SUMMARY AND DISCUSSION

Nine backhoe trenches and five hand-excavated units within the FM 1929 right-of-way in the vicinity of site complex 41CC48/49/50/51 and site 41CC52 failed to reveal any buried cultural materials, cultural features, or other evidence of buried cultural strata.

Surface examination revealed a few scattered non-diagnostic cultural artifacts, but all were in plow disturbed deposits.

On the basis of the above, it is believed that those portions of the sites within the highway right-of-way are not worthy of designation as a State Archeological Landmark.

SECTION 4 - INTENSIVE SURVEY AND MAPPING IN THE VICINITY OF SITE 41CC246

PREVIOUS SITE INVESTIGATIONS

Site 41CC246 was recorded by crews of Prewitt and Associates, Inc., in 1987, and reported by Bailey et al. (1989:128,160). Both prehistoric and historic occupations were documented within an area of approximately 120,000 square meters, but it was noted that soils were shallow, overlying caliche, which did not allow for potentially buried cultural materials.

The prehistoric component was described as "a sparse artifact scatter containing a Nolan dart point, bifaces, unifaces, an end scraper, debitage and burned rocks" (ibid., 128,129). The prehistoric portion of the site was considered non-significant, and no further research was recommended (ibid., 203). Further, the site was cleared for dam construction activities by the SRAC in 1987, and had apparently been affected by such activities by December 1987.

The historic component was described as covering an area about 70 meters x 90 meters along the upland terrace. The site consisted of a "rectangular limestone house foundation with associated remains of a brick chimney and a large sheet midden" (ibid., 160). Limestone outcroppings indicated that the surfaces were eroded, leaving little chance of sub-surface integrity. Artifacts collected from the site indicated an early- to mid-twentieth century occupation.

Archival research (Bailey et al. 1989:160,162) revealed that the house site was in the western portion of a grant made to Heinrich Schaefer on February 5, 1849. In 1854 the grant was sold to Robert Bechem, who does not appear to have lived on the grant. Circa 1882, the grant was sold to A. M. Dunman, whose homestead was south of the grant. Between 1885 and 1889, when the Concho Cattle Company purchased the grant, taxes were paid by a variety of land agents. In 1901, the Concho Cattle Company sold the grant to J. H. Bryson and A. A. Hartgrove. In 1903, Bryson, a resident of Comanche County, attained sole ownership. The grant was deeded to his daughter, Myrt, in 1910. Myrt Bryson married C. L. Stevens in the late 1920s, and in 1930 they designated the tract on which site 41CC246 is located as their homestead. However, two years later they testified that their homestead was then in the town of Comanche. Following C. L. Stevens's death, the tract became part of the Riverside Ranch Company, Inc. until sold in 1975 to John W. Childress, Charles L. Williams, and D. E. Jackson.

In 1987 (ibid., 204), the historic portion of the site was considered potentially significant, and recommendations were made for mapping, collecting, testing, archival research and informant interviews. By the end of 1987, mapping, collecting, and informant interviews had been conducted, and the site status was regarded as being good.

SITE SETTING

The site is located south of the Colorado River on a north trending ridge slope (Figure 1-1). Elevation ranges between 1500 and 1540 feet NGVD. At the time of the present investigations, vegetation consisted of scattered low brush. Geologic deposits on which the site is situated consist of Permian, Elm Creek Formation limestone and shale (Bureau of Economic Geology 1976). Limestone outcroppings were observed on the surface of the site area. Soils on which the site is located have been identified by the USDA-SCS (1988:Map sheet 10) as belonging to the Lueders-Throck association, hilly. Lueders soils formed on

uplands over broken limestone bedrock, while Throck soils formed on upland clayey marls and shaley clays.

INVESTIGATIONS WITHIN THE FM 1929 RIGHT-OF-WAY

Investigations of the site complex were confined to intensive surface survey to determine the relation of the historic artifact scatter and structural remains to the projected right-of-way of FM 1929.

A contour map of the area (Figure 4-1) was prepared using a transit and stadia rod, and the location of the house foundation was plotted relative to the right-of-way. In addition, individual occurrences of broken glass and metal fragments were also plotted.

OBSERVATIONS AND RESULTS

The survey revealed that the general area was extremely eroded. Although the investigations were primarily concerned with the historic component, scattered prehistoric lithic debitage was observed on the surface. This sparse scatter extended into site 41CC52, with no apparent discontinuity. No diagnostic artifacts were observed.

The site map indicated that the concentration of rock and rubble associated with the house foundation was essentially outside the right-of-way, as was the accompanying sheet scatter of artifacts.

SUMMARY AND DISCUSSION

Given the eroded nature of the area, the lack of intact features within the right-of-way, and previous impacts, it is believed that those portions of the site within the highway right-of-way are not worthy of designation as a State Archeological Landmark.

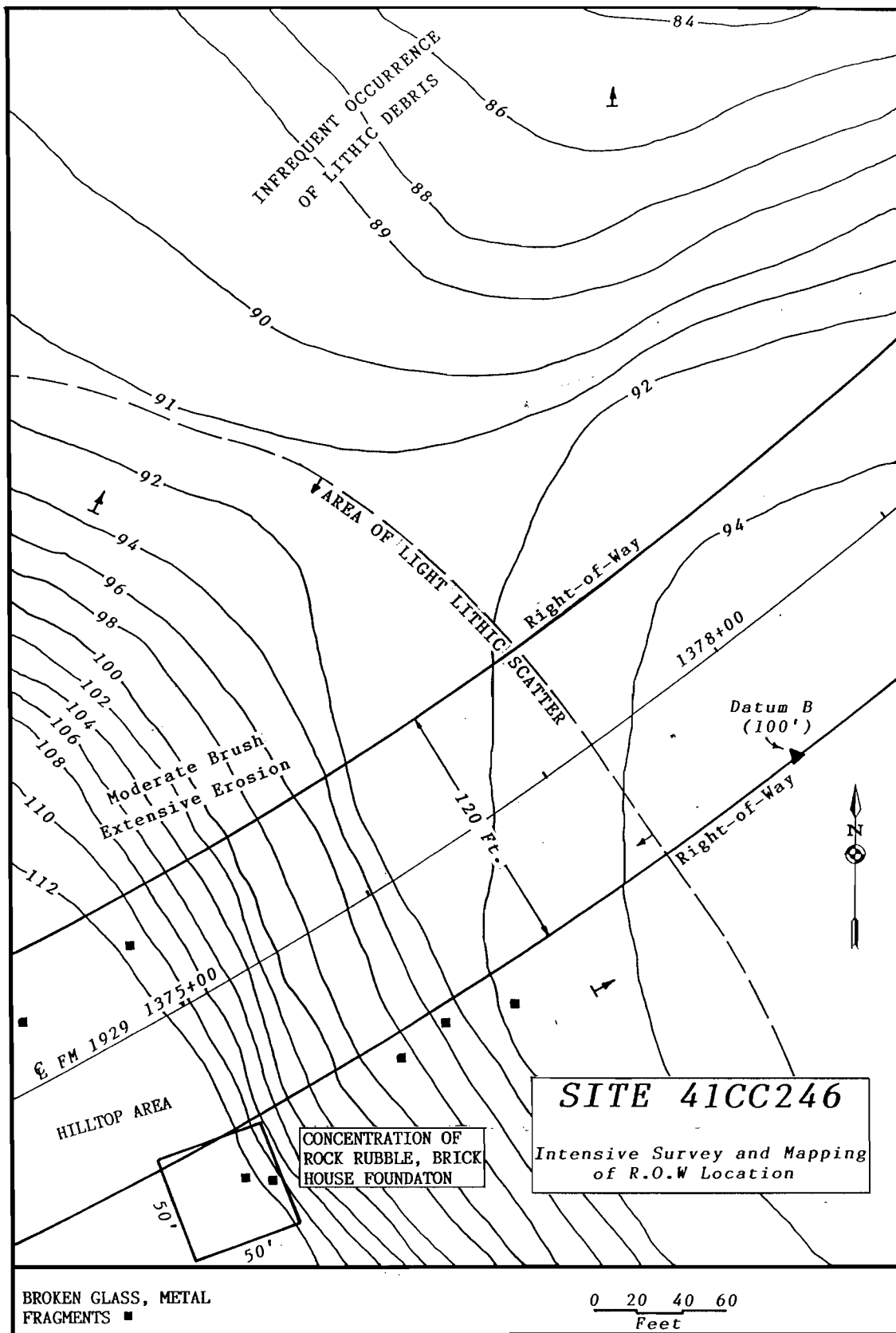


Figure 4-1. Site 41CC246, contour map in the vicinity of FM 1929 right-of-way.

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