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Archeological Significance Testing at Sites 41MU54, 41MU55, and 41MU57, Montague County, Texas with A Data Recovery Plan for Site 41MU55

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ARCHEOLOGICAL SIGNIFICANCE TESTING AT SITES 41MU54, 41MU55, and 41MU57 MONTAGUE COUNTY, TEXAS

with

A DATA RECOVERY PLAN FOR SITE 41MU55

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TEXAS DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAY DESIGN
AUSTIN, TEXAS

ABSTRACT/MANAGEMENT SUMMARY

The Texas Department of Transportation (TxDOT) conducted archeological significance testing at Sites 41MU54, 41MU55, and 41MU57, which are within the right-of-way of proposed road FM 677 between Illinois Bend, a community in Montague County, Texas, and a proposed bridge crossing the Red River at a location south of Courtney, a community in Love County, Oklahoma.

As the construction will connect with a bridge that will be built with partial federal funding, the testing was undertaken under the guidelines of the National Historic Preservation Act of 1966 and its implementing regulations, 36CFR, Part 800, and the National Environmental Policy Act.

At Site 41MU54, a total of 74 work-hours was spent on hand-excavation of five square meters. No cultural remains were located, and the site is considered not significant. No additional research is recommended for this site.

At Site 41MU55, 107 work-hours were spent on the hand-excavation of approximately eight square meters. Both historic and prehistoric components were identified. The historic component apparently represented casual disposal of household refuse during the first half of the twentieth century and is considered not significant. The prehistoric component appears to represent a single occupation or event, probably dating to the Late Archaic time period. However, no diagnostic artifacts were recovered. The lower part of the prehistoric deposit, perhaps 15 to 20 cm thick, appears to be intact, and four features, identified as hearths, were located. Because of the presence of intact features within an apparent discrete Late Archaic component it is believed that this site is significant. Therefore, additional research is proposed for this site prior to construction, and the report includes a proposed data recovery plan.

At Site 41MU57, 72 work-hours were spent excavating five square meters by hand and three trenches, each approximately 14 meters in length, by backhoe. Excavations revealed a very sparse lithic scatter confined to near surface deposits, and probably representing the remains of a small hunting camp which provided a good vantage point over the adjacent Red River floodplain. Because of erosion, the remains are almost certainly located within disturbed soils forming on deflated surfaces. No diagnostic artifacts were located. The site is believed to be not significant, and no additional research is recommended for this site.

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INTRODUCTION

General

The Texas Department of Transportation (TxDOT) conducted archeological significance testing at Sites 41MU54, 41MU55, and 41MU57, which are within the right-of-way of proposed road FM 677 between Illinois Bend, a community in Montague County, Texas, and a proposed bridge crossing the Red River at a location south of Courtney, a community in Love County, Oklahoma (Figure 1-1).

As the construction will connect with a bridge that will be built with partial federal funding, the testing was undertaken under the guidelines of the National Historic Preservation Act of 1966 and its implementing regulations, 36CFR, Part 800, and the National Environmental Policy Act.

Fieldwork

Significance testing was conducted during December 1991 under the supervision of G. R. Dennis Price, with a field crew supplied by Wichita Falls District 3. A total of 74 work-hours was spent on hand-excavation of five square meters at Site 41MU54, 107 work-hours were spent on the hand-excavation of approximately eight square meters at Site 41MU55, and 72 work-hours were spent at Site 41MU57, where five square meters were excavated by hand and three trenches, each approximately 14 meters in length, were excavated by backhoe.

Acknowledgments

Cooperation by the Nocona Residency Office in providing personnel and equipment is gratefully acknowledged. The field crew of Tony Woods (backhoe operator), Brad Coffman, George Hagelmier, and Chris Ulbig are thanked for their willingness to work long irregular sessions, often in inclement weather. Coordination with the Nocona Residency was undertaken by personnel of the Bowie Residency Office. Their cooperation, friendship, and humor is also gratefully acknowledged. In particular, special thanks go to Bill Daniel, who acted as guide, field assistant, and mapping surveyor during both the testing program and the preceding survey phase.

Report completion was greatly facilitated by Dan Prikryl of the Texas Historical Commission who gave freely of his encyclopedic knowledge of previous investigations in north-central Texas.

Artifact illustrations and the more professional-looking profiles were drawn by Milton Bell of the Texas Department of Transportation. I wish that he had had more time to complete all of the illustrations, thus relieving me of that time-consuming task.

Report Arrangement

The report has been arranged in a series of sections that is intended to be 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 pre-

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historic cultural sequence as we presently understand it. Individual sections for each site then follow in which all site-specific information (setting, investigations, features, artifacts, etc.) is addressed, with a brief discussion. The next section discusses the significance of each site using National Register criteria set out in 36CFR60.4. This is followed by a recommendations section which includes a data recovery plan for Site 41MU55. Finally, all references used in the body of the report are fully cited.

ENVIRONMENTAL SETTING

Topography

The three sites are located on uplands south of the Red River alluvial floodplain. The uplands range in elevation from approximately 750 to 910 feet above the National Geodetic Vertical Datum (NGVD) (USGS 1979 Leon North and USGS 1968 Spanish Fort 7.5' topographic quads). Terrain on the uplands is a mixture of both gentle slopes and dissected landscape. The major drainage in the uplands vicinity of the sites is Valley Branch and its tributaries, many of which are actively cutting and dissecting the landscape.

Geology

Surface geologic deposits on the uplands have been mapped as consisting predominantly of the Lower Cretaceous Antlers Formation (Bureau of Economic Geology 1967). These consist of "sand, clay, and conglomerate. The sand is brownish yellow in color, and texturally is fine to coarse grained, conglomeritic mainly in the lower part and argillaceous in the upper part. The clay is red, yellow, and partially variegated in color, and is interbedded with fine-grained sand. The conglomerate includes chert, quartz, and quartzite as pebbles and granules."

Soils

The three sites are located on soils mapped by the Soil Conservation Service (1978:map sheet 7) as Cona association, hilly. This association consists of sloping to moderately steep soils, with slopes ranging between 5 and 25%, but averaging about 8%. Cona soils make up about 70% of the association; the remainder includes Truce, Windthorst, and Bonti soils on the lower parts of slopes, and a soil similar to Exray soils on ridgetops (ibid., 12, 13). More detailed information, and descriptions of typical pedons, are provided in the Soil Survey for Montague County.

Climate

The present-day climate of the project area is subtropical, with dry winters and hot and humid summers. The following information is taken from the Montague County soil survey (Soil Conservation Service 1978:1,2). Annual rainfall averages about 32 inches, with about 69% falling during thundershowers between April and October. Prevailing winds are southerly to southeasterly, except in January and February when northerly winds predominate.

Winter temperatures are relatively mild, with temperatures dropping below freezing about 58% of winter nights. Cold fronts moving down from the north

often bring sudden drops in temperature; however, cold spells rarely last more than two or three days before rapid warming occurs. Precipitation occurs as rain, freezing rain, sleet, or snow.

Spring is a very changeable season, with alternate short-duration warm and cool spells. March and April are the windiest months. Thunderstorms are most frequent in April, May, and June.

Summers are hot, with high daytime temperatures for July and August averaging in the mid-90°F range. Average daily lows are in the low-70°F range. Thundershowers occur six days per month on average.

Fall is characterized by mild, sunny days and crisp, cool nights. Windspeeds are lowest during this season. Rainfall increases in September and October.

Paleo-Environment

No late glacial age pollen record has been examined in north Texas, but data can be drawn from the Ferndale Bog in southeastern Oklahoma (Bryant and Holloway 1985:53-54). Fossil pollen collected from this bog dates from as early as 12,000 years B.P. to the present. The earliest cores indicate that boreal conifer forests were already in retreat, being replaced by grasslands. The investigators suspect that spruce grew no closer than 160 km from the bog locality in 12,000 B.P. Overall, the pollen sequence until 9000 years B.P. can be characterized by low percentages of arboreal pollen and high counts of grass and composite pollen (Bryant and Holloway 1985:54, 64). After 9000 B.P. there is evidence that Quercus began invading the grasslands in the Ferndale Bog vicinity, creating first an oak savanna and later an oak woodland. This woodland persisted until about 2100 B.P., when pines began migrating into the region. The area is finally characterized by an oak-hickory-pine forest after 1200 B.P. (Bryant and Holloway 1985:64).

Prikryl (1990) citing Bond's (1966) study of pollen from the Washita River on the western margin of the Western Cross-Timbers in southern Oklahoma, suggests that a grassland/prairie environment was in existence between 9000 and 5000 B.P., with a wetter climate leading to conditions similar to today's developing about 4500 B.P.

Some pollen data are available from archeological contexts in the north Texas region (Bryant and Holloway 1985:64-65). Data from the Cobb-Poole Site suggest the presence of widespread marsh and swamp habitats at approximately 1500 years B.P. The Cobb-Poole investigators also suggested that the last post-glacial vegetation in north Texas consisted principally of oak savanna.

The Frossard Site produced an unusually high and varied record of species confined to very mesic habitats. However, a later analysis of samples from the same sample columns failed to replicate these results. Bryant and Holloway (1985:65) conclude that the analyses from both the Cobb-Poole and Frossard Sites should be used with caution in reconstructing the north Texas pollen record.

A collection of fossil bone from Dye Creek in Montague County, dated to 1350±150 years B.P., indicates that at that time the area was probably drier, with prairie conditions. However, woodland must also have been present, at least near the creek, and the creek is believed to have been considerably larger, large enough to support large catfish (Dalquest and Hibbard 1965).

Modern Flora

Montague County is situated within the Cross Timbers and Prairies vegetation zone of the Prairie-Parkland Province. The project area is on the eastern margin of the Central Rolling Red Prairies and the western edge of the Western Cross Timbers (Soil Conservation Service 1975:Plate3).

Vegetation within areas of sandy soil, on which the sites are located, is predominantly oak-hickory forest, while clay soils support tall-grass prairie. The oak hickory forest is typically dominated by post oak and may include blackjack oak, and, to a lesser extent, hickory. Shrubs include yaupon, crooked bush, agarita, and cedar. Predominant grasses on the prairies are big and little bluestem, Indiangrass, switchgrass, and Texas wintergrass.

Fauna

The sites are located on the western margin of the Texan biotic province (Blair 1950). This transitional zone between the forests of the Austroriparian province to the east and the grasslands of the Kansan province to the west does not include any endemic species, deriving its forest and bog fauna from the Austroriparian and its grasslands fauna from the Kansan.

Common Austroriparian mammal species found within the Texan province include: opossum, Eastern mole, fox squirrel, gopher, Fulvous harvest mouse, white-footed mouse, Hispid cotton rat, Eastern cottontail, and marsh rabbit (Blair 1950:101). Grassland mammal species include Hispid pocket mouse and black-tailed jackrabbit. Both Eastern and Western box turtles are found in the Texan. Nine of the lizard species are derived from the Eastern forest, while the remaining seven are grassland species. Of the 39 species of snakes, 27 are forest specimens, and 12 are western species at the eastern edge of their range. The urodele fauna of the Texan represents an attenuated extension of the Austroriparian urodele; in fact, the Texan province constitutes a barrier between Eastern and Western urodele species. Anuran fauna consist of widely distributed species of Austroriparian forms (Blair 1950:102)

Larger animals that are common in the area today include white tailed deer, cottontail, jackrabbit, squirrel, opossum, raccoon, and striped skunk. In the past such species as bison and antelope were probably present in prairie areas, whereas wild turkey and black bear were probably present in the woodlands. During investigations white tailed deer, wild turkey, coyote, and squirrels were observed live in the area, as was a herd of domestic bison. Striped skunk and raccoon were frequently observed road kills.

PREVIOUS ARCHEOLOGICAL RESEARCH

There has been only limited well-documented archeological research within Montague County. The earliest recorded archeological research was undertaken

by J. E. Pearce and A. T. Jackson (1934), who conducted a reconnaissance survey along the Red River in Fannin, Grayson, Cooke, Montague, and Clay Counties in 1934. Records on file at the Texas Archeological Research Laboratory (TARL) indicate that within Montague County they recorded eight sites: Earl Hurd Farm (41MU5), a campsite with lithic debris; John Perryman Farm (41MU6), an extensive campsite with pitted manos, small arrowpoints, trade goods, and also associated with four skeletons exposed by county road construction (apparently in the early 1900s); Old Reynold's Farm (41MU7), where a skeleton associated with trade beads was reported; the Stafford Estate (41MU8), an extensive campsite where artifacts (such as ceramics, Fresno and Harrell or Washita arrowpoints, manos, hoeblades, knives, scrapers) and refuse pits (containing buffalo, deer, and other animal bones) were reported; B. H. Steadham Farm, a campsite; Spanish Fort (41MU12), a historic Wichita/Taovaya village; W. F. Harmon Farm (41MU14), a campsite with pottery; and the Boman Cardwell Farm (41MU29), where a skeleton with historic trade goods was excavated circa 1916.

Witte (1938) briefly reported on the history of Spanish Fort (41MU12) and described artifacts that he and other collectors had found in the vicinity. Earlier, he (Witte 1935, 1936) had reported on sites and kitchen middens along the Red River in adjacent Clay County. Later, Witte (1955) briefly summarized types of projectile points found on the surface of the upper Western Cross Timbers area. This summary included points found in Montague County.

In 1960, an archeological appraisal of the Farmers Creek Reservoir (Lake Nocona) recorded four insignificant lithic scatters (41MU1, 41MU2, 41MU3, and 41MU4). Diagnostic artifacts were limited to three Gary-like dart points (Jelks 1960).

Mineralized mammal bones in association with lithic debitage and charcoal were found in the banks of Dye Creek in 1961 by Dalquest and Hibbard (1965). Radiocarbon dating produced a date of 1350±150 years B.P. As previously noted, analysis of the faunal material suggested that the creek was considerably larger at that time, and that both prairie (an indication of a climate drier than now) and woodlands were present in the immediate vicinity.

In 1965 and 1966 a pilot study of Wichita archeology and ethnohistory included survey of the Spanish Fort Bend of the Red River (upstream from Spanish Fort) and excavation at several sites (Bell et al. 1967). Sites visited and recorded in Montague County include 41MU12, 41MU16 through 41MU26, and 41MU28 through 41MU35 (TARL site files). Excavations were undertaken at: the Upper Tucker Site (41MU17, SMU # x41MU17), a late eighteenth-century, Norteno Focus/Taovaya (Wichita) site; the Glass Site (41MU24, SMU # x41MU24), a Late Prehistoric Henrietta Focus site; and the Coyote Site (41MU28, SMU # x41MU28), another Henrietta Focus site (Bell et al. 1967). Excavations were also undertaken across the Red River in Oklahoma at the Longest Site (34JF1), a fortified Wichita village that repulsed a Spanish attack in 1759 (ibid).

Montague County is within the Red River basin, above Denison Dam, for which a historical and archeological overview was prepared by the Soil Conservation Service (1975).

McCormick (1976) conducted limited testing at site 41MU10. This failed to locate any subsurface artifacts, and no diagnostics were found on the surface.

A survey of proposed extensions to Lake Amon G. Carter resulted in the recording of 15 archeological sites (41MU15, 41MU27, and 41MU36 through 41MU48). Four of these sites were historic, ten were prehistoric, and one had both historic and prehistoric components (McCormick and Ferring 1980).

Survey by Nancy Mottashed Cole within the Clear Creek Watershed resulted in the recording of a historic syrup mill (41MU49) and a historic cemetery (41MU50) (TARL site files).

Survey carried out for the proposed FM 677 road resulted in the recording of a historic farmstead (41MU51) by Milton Bell of the State Department of Highways and Public Transportation (SDHPT) in 1988, and sites 41MU54 through 41MU57 by Glen Goode of the Texas Department of Transportation (TxDOT) in 1991, with additional survey work being conducted by the present author (TxDOT 1991).

Examination of files maintained by the Texas Historical Commission of cultural resources research conducted for projects carried out, licensed, or permitted by federal agencies, revealed an additional approximately 125 brief letter reports documenting surveys (mainly conducted by the Soil Conservation Service) that had not located any cultural resources.

CULTURAL BACKGROUND

The limited archeological research in Montague County, confined largely to late prehistoric and historic contact periods, generally has yielded little specific information concerning prehistoric settlement, subsistence, and activities in the county. Thus, our knowledge of the greater part of the prehistoric era must be drawn from research conducted in surrounding areas, most notably from reservoir and watershed projects (particularly Lake Ray Roberts and Lewisville Lake) to the east and southeast of Montague County.

Located within the north-central Texas area, the prehistoric cultural sequence has generally been viewed in the normal tripartite sequence of Paleoindian, Archaic, and Neo-American. The prehistoric sequence is then followed by the Historic period. The following briefly summarizes the various cultural/temporal phases identified for the area. More detailed information concerning research and the cultural sequence of north-central Texas may be found in the writings of Lynott (1977), Skinner and Baird (1985), and Prikryl (1990).

Paleoindian (?-8500 B.P.)

The Paleoindian Stage, representing the earliest documented stage of human 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 more general hunting-gathering subsistence practices. Diagnostic artifacts include fluted Clovis and Folsom points, and unfluted Plainview points. The Paleoindian Stage is generally viewed as ending between 9000 and 7000 B.P.

Witte (1955) noted an incomplete fluted point from the surface of a terrace at a site adjacent to Farmers Creek, and a statistical overview of Texas sites (Biesaart et al. 1985:169) notes two sites in Montague County with Paleoindian components. The only Paleoindian sites excavated in north-central Texas are the Lewisville Site, 41DN72, (Crook and Harris 1957, 1961; Stanford 1982, 1983; Schiley et al. 1985) and the Aubrey Site, 41DN479, (Ferring 1989), both located adjacent to Elm Fork of the Trinity River.

Archaic Stage (8500-1200 B.P.)

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 used 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. Crook and Harris (1952) divided the Archaic Stage into two foci, Carrollton and Elam. However, more recent syntheses (Lynott 1977, Skinner and Baird 1985) have adopted a three-part temporal division: Early and Middle, which encompass the Carrollton Focus, and Late, which encompasses the Elam Focus. Most recently, Prikryl (1990) has seriously questioned the validity of the data on which the definitions of the Carrollton and Elam Foci were based. The following summary of the Archaic uses Early, Middle, and Late temporal divisions.

Early Archaic

The time span of the Early Archaic is poorly defined, frequently having been simply combined with that of the Middle Archaic (e.g. Lynott 1977, Skinner and Baird 1985). Prikryl (1990) proposes the span 8500-6000 B.P. for the Early Archaic.

Diagnostic dart points of the Early Archaic include Angostura and early split-stemmed varieties similar to the types Gower, Martindale, and Uvalde (Prikryl 1990). As these types extend over large areas beyond north-central Texas, it is likely that populations were still relatively small and ranging over broad areas.

Information on the Early Archaic in north-central Texas is extremely limited and Prikryl (1990:69) notes that "No sites with isolatable Early Archaic components have been reported in North-Central Texas." Lynott (1977:157) hypothesized exploitation of bottomland forest and riverine resources during this period and the succeeding Middle Archaic period. However, as yet there is no data to support such a hypothesis.

Biesaart et al. (1985:169) did not identify any sites with Early Archaic components in Montague County, and subsequent research also has not identified any such components.

Middle Archaic

Suggested terminal dates for the Middle Archaic vary quite widely; Lynott (1977) suggested a terminal date of 2500 B.P., McCormick and Ferring (1980) suggested 6000 B.P., Skinner and Baird (1985) suggested 4500 B.P., and Prikryl (1990) suggested 3500 B.P.

Diagnostic dart points of the Middle Archaic include stemmed types such as Wells, Carrollton, and Morrill, as well as basal-notched varieties such as Bell, Calf Creek, and Andice (Prikryl 1990). McCormick and Ferring (1980:10) also cite Marshall points as being indicative of the Carrollton Focus (Middle Archaic). Other Carrollton Focus diagnostics cited by McCormick and Ferring (1980) include Carrollton axes, round-based bifaces, Clear Fork gouges, and Waco net-sinkers. However, Prikryl (1990:73) notes that Waco net-sinkers date earlier than the Middle Archaic, Clear Fork gouges date to both Early and Middle Archaic, and Carrollton axes have been found in Late Archaic contexts.

As with the Early Archaic period, information on the Middle Archaic is sparse, though some sites with Middle Archaic components have been identified. McCormick and Ferring (1980) note that Carrollton sites are located on first terraces above floodplains of major creeks or rivers, at the junction with secondary streams. Prikryl (1990:73) notes that in his study all sites with Middle Archaic artifacts were also located on first terraces above streams, though not necessarily at the confluence with a secondary stream. Thus, it would appear that Lynott's (1977) hypothesis of exploitation of bottomland forest and riverine resources during this period is correct. McCormick and Ferring (1980:11) note the occurrence of semi-subterranean pit houses and roughly circular hearths at Middle Archaic sites in Collin County.

Biesaart et al. (1985:169) did not identify any sites with Middle Archaic components in Montague County. Subsequent research located a Wells point at Site 41MU38, and Marshall-like points at Sites 41MU41 and 41MU42 (McCormick and Ferring 1980). Clear Fork gouges from Sites 41MU10, 41MU25, and 41MU36 may also be indicative of Middle Archaic use of the local area.

Late Archaic

Ending dates for the Late Archaic range from 1500 B.P. (Lynott 1977; McCormick and Ferring 1980) to about 1200 B.P. (Skinner and Baird 1985; Prikryl 1990).

Diagnostic dart point types, in order of descending frequency, include: Gary, Dallas, Godley, Ellis, Trinity, Elam, Edgewood, Yarbrough, Marcos, and Ensor (Prikryl 1990). Artifacts of this period are frequently made of local quartzite, rather than chert as in preceding periods. This has been interpreted as an indication that people were more areally constrained and less wide-ranging, perhaps as a result of greater population. Certainly the number of Late Archaic sites shows a dramatic increase over the number of Middle Archaic sites, Prikryl (1990:74) noting in his study that there was a 3.5 times increase in site numbers. It has been postulated that this large population increase may have been the result of a wetter climate, which produced more of a woodland setting, rather than prairie, that was able to support larger populations. The increased presence of grinding stones supports the premise of increased reliance on vegetal resources rather than animal resources. Lynott (1977) notes that most sites of the period are located on terraces adjacent to streams, a conclusion similarly reached by Prikryl (1990). However, it must be noted that most of the data on which the conclusions are drawn is the result of research carried out in reservoir basins.

Features associated with Late Archaic occupations include two rock-lined hearths (one 40 x 75 cm and the other 40 x 45 cm) at Site 41DN85, and a

buried hearth located in a backhoe trench at 41DN103 (Skinner and Baird 1985). At Site 41CO141, an arcuate hearth (some 70 cm in diameter with burned rocks forming two arcs possibly indicative of two uses), two circular concentrations of burned clay lumps and charcoal identified as hearths, and a tightly flexed skeleton all appear to date to the Late Archaic (Prikryl and Yates 1987). Prikryl (1990) also suggests that Wylie pits (features ranging between 15 and 30 meters in diameter and 2 to 3 meters in depth) may also occur during the later stages of this period, as well as in the succeeding period.

Biesaart et al. (1985:169) indicate four sites in Montague County with Late Archaic components. Subsequent research by McCormick and Ferring (1980) located a number of lithic scatters, two of which (41MU15 and 41MU38) can be dated to the Late Archaic.

Neo-American/Late Prehistoric

The Neo-American or Late Prehistoric is recognized archeologically by the presence of arrowpoints and pottery. The stage has been divided into both foci and periods. The earlier division was into foci, the Henrietta based on research at the Harrell Site in Young County (Krieger 1946), and the Wylie based on research conducted at Lake Lavon in Collin County (Stephenson 1949, 1952). The foci were originally largely viewed as geographic cultural divisions, the Henrietta Focus showing similarities with Plains culture, while the Wylie Focus exhibited traits of both Plains and Caddo culture. Within Montague County, most sites of this period are associated with the Henrietta Focus (McCormick and Ferring 1980). More recently, Lynott (1977) divided the stage into Early (1500-800 B.P.) and Late (800 B.P. to historic contact) phases, while Prikryl (1990) used the nomenclature Late Prehistoric I and Late Prehistoric II for similarly dated phases.

Late Prehistoric I

Diagnostic arrowpoints of this period include, in order of decreasing frequency: Alba, Scallorn, Steiner, and Catahoula; they are made of both chert and quartzite, with percentages of sandstone ranging from 80% for Steiner points to 42% for Alba points (Prikryl 1990). Ceramics of the period are grog- and sand-tempered. Most of the sites with these diagnostics appear to be located south and east of Montague County, and no Wylie Focus components have been identified from sites in Montague County. Lynott (1977:160) noted that Elm Fork and West Fork of the Trinity River were culturally basically as the preceding Late Archaic. However, Prikryl (1990:Figure 30) identifies one Late Prehistoric I site, 41DN8 in Denton County, on Clear Creek which extends into Montague County. However, this site appears to be somewhat isolated from other sites of the same period. Also, Prikryl (1990), citing Lorrain (1969) identifies possible circular houses dating to this period from one site on Moss Lake in Cooke County.

Late Prehistoric II

Sites of this period within Montague County are asssociated with the Henrietta Focus. Diagnostic lithic artifacts include Washita, Fresno, Perdiz, and Harrell arrowpoints, snub-nosed scrapers, edge-bevelled knives, and flake scrapers. Arrowpoints appear to be made largely from chert (69%), rather than sandstone (31%) (Prikryl 1990). Ceramics, undecorated Nocona Plain, are

tempered with shell or other calcareous matter. Lynott (1977) postulated a settlement system of large permanent or semi-permanent village sites located on sandy soils suitable for agriculture, on or adjacent to alluvial bottomlands, that were occupied during spring and summer, the growing season. The villages were then abandoned in fall and winter, with the populace dividing into small family-sized, itinerant groups to forage and hunt during the fall and winter. It has also been postulated that bison hunting was of importance during this period, and that the presence of bison is indicative of a climate drier than the present, that would have produced a short-grass prairie environment. Evidence of bison exploitation during the period is present, but Lynott (1979:98) notes that although archeological data indicate that bison remains in north-central Texas are most frequent between 800 and 400 B.P., they are still greatly outnumbered by remains of white-tailed deer and other woodland mammals.

Within Montague County, at least 12 sites have been identified with the Henrietta Focus or Late Prehistoric II period, and two sites, the Coyote Site, 41MU28 (Woodall 1967a) and the Glass Site, 41MU24 (Lorrain 1967), have been excavated. Both sites fall into the village category postulated by Lynott. At the Upper Coyote site, 14 features were identified, 11 cache pits (seven in a cluster) and three hearths. The cache pits were all oval to round, with straight sides. These pits ranged in diameter from just over 1 meter to over 2 meters; depths ranged between 50 and 134 cm below the existing ground surface. Two of the hearths were in pits and were identified by the presence of burned sand. The other hearth consisted of eight small hearthstones arranged around a single large stone. Approximately 70 cm in diameter, it too appeared to have been constructed in a basin-shaped pit. At the Glass Site a house and nine cache pits were identified. The house was oval, with diameters of 6.6 and 4.8 meters; semi-subterranean, with the floor at a depth of about 30 cm below ground surface; and had four interior support posts. Three cache pits (two of which were excavated) were found inside the house area, but no hearth. One of the excavated cache pits inside the house had straight walls, the other was too shallow to determine wall profiles. Three cache pits excavated outside the house were bell-shaped, a shape that Woodall (1967a) believed to be associated with later historic groups.

Historic Native Americans

Historic Native American sites are identified archeologically by the presence of both aboriginal artifacts and European manufactured goods of glass (beads) and metal (axes, arrowpoints, gun parts, etc.).

Within the Montague County area Historic Native Americans have been identified with the Taovaya, a Wichita group. The earliest documentation of the group in the vicinity of present-day Spanish Fort dates to 1759, when Parilla led an expeditionary force to the area in a reprisal against a Taovaya attack on the San Saba Mission. However, documents detailing the expedition indicate that French traders had already made contact with the Taovaya by that time (Newcomb and Field 1967:261, 262). The village against which Parilla tried to take reprisals has been identified with the Longest Site, 34JF1 (Bell and Bastian 1967), on the north bank of the Red River in Oklahoma, just across from the present-day community of Spanish Fort. Parilla was not succesful in his campaign, being defeated in a battle on October 7, 1759, and being forced

to retreat, leaving behind baggage and two cannon. The two cannon were eventually returned to the Spanish in 1778 (Witte 1938:238).

From spring to fall the Wichita lived in permanent villages, cultivating corns, beans, and gourds, as well as plum trees. Houses were circular, 4 to 9 meters in diameter, constructed of vertical posts to which horizontal cross beams were attached at the top. The whole was then covered with poles and prairie grasses. After the harvest in the fall and burial of agricultural products in cache pits, the Wichita divided into small groups and became nomadic hunters and gatherers (Newcomb 1961).

Within Montague County, several Historic Native American sites have been identified and associated with the Taovaya. These include the Spanish Fort Site, 41MU12 (Witte 1938), and the Upper Tucker Site, 41MU17, partially excavated by Woodall (1967b). At the Upper Tucker Site, Woodall excavated five house pits, four cache pits, and two hearths. The houses were circular to oval in outline, with diameters ranging between 5.32 meters and 11.85 meters. Floors were between 45 and 65 cm below ground surface. Walls were formed of vertical posts, about 20 cm in diameter, set at intervals of 1.5 to 2 meters around the circumference. Central ash lenses were interpreted as hearths. Two of the cache pits were bell-shaped, wider at the bottom than the top, with diameters between 1.5 and 2.5 meters and depths of up to 2 meters.

Euro-American Settlement

Euro-American settlement in the Montague County area commenced in the mid-1850s the earliest known settlers being Henry Bradern and John Keenan, who settled in 1854 (Webb 1952b:224). Illinois Bend was settled in 1862, and by 1885 the settlement had a population of 300, and there were churches, a school, and two steam gristmills and cotton gins (Webb 1952a:875). Thus, at that time it is likely that much of the area through which FM 667 is to be built was under cultivation. Cultivation of the uplands, in less than a century, led to severe erosion and caused "fantastic and unbelievable badlands, . . . Gulleys with sheer vertical walls, 50 to 100 feet in depth becoming commonplace" (Witte 1955:250). By 1947, the population of Illinois Bend had decreased to 68 (Webb 1952a:875). Today the area is mostly in pasture, but evidence of erosion and gulleys is still highly visible.

SECTION 2 - SITE 41MU54

SITE SETTING

This site is located between project survey stations 710+00 and 711+00, where the planned road diverges from existing FM 677 (Figures 1-1, 2-1). The area is on a steep slope down to the west, at the base of which is a cutting tributary of Valley Branch. Elevation across the slope ranges from 803 feet NGVD at the existing road fenceline to approximately 780 feet NGVD. Apart from an approximately 13-meter-wide strip adjacent to the existing road fence, the right-of-way surface was eroded down to a yellowish red (5YR 4/6, dry) sandy clay. A thin stratum of sandstone conglomerate outcropped intermittently along the existing road fence line and shoulder. The deposits are undoubtedly part of the Lower Cretaceous Antlers Formation, as depicted on the Sherman sheet of the Geologic Atlas of Texas (Bureau of Economic Geology 1967). Soils at the site have been identified by the Soil Conservation Service (1978:map sheet 7) as belonging to the Cona association, hilly. Vegetation along the existing road fence line consisted of scattered oaks, cedars, briars, and grasses. None of the vegetation appeared to be more than about 25 years in age, certainly post-dating construction of the present FM 677 road in the mid-1950s.

PREVIOUS INVESTIGATIONS

This site was located in November 1991 by Glenn Goode, of the Texas Department of Transportation, during an archeological survey of the proposed FM 677 right-of-way. At that time a side-notched dart point with a ground base and ground/polished notches was found on a steep bulldozed slope. Also found on the slope were a biface core fragment and a possible mano. At the top of the slope, a concentration of sandstone fragments was observed eroding from the cut edge of the bulldozed area. The concentration of sandstone, resting on a B-horizon soil, appeared to have been at least partially broken in place and some appeared to be arranged in a hearth-like manner. Two backhoe trenches, three 100-x-100-cm hand-excavated units and four 30-x-30-cm shovel tests failed to locate any additional cultural materials, other than a single chert flake (Texas Department of Transportation 1991).

Following a review of site data, the Texas Historical Commission recommended additional testing, consisting of at least five 1-x-1-meter hand-excavated units, at the site.

TESTING METHODOLOGY

Testing at this site was undertaken on December 16 and 17, 1991. The work consisted of the excavation of five 1-x-1-meter hand-excavated units, Test Units A-E (Figure 2-1). Test Units A and D were located adjacent to Shovel Tests A and B, excavated over the sandstone rock concentration during previous investigations, and the remainder of the test units were located to investigate the general undisturbed area of the right-of-way.

Each unit was excavated in 10-cm horizontal levels, the vertical datum for each unit being the ground surface at the highest corner. Elevations of the ground surface and the base of each level were recorded at each corner of the unit using a level and stadia rod. Absolute elevations were determined from

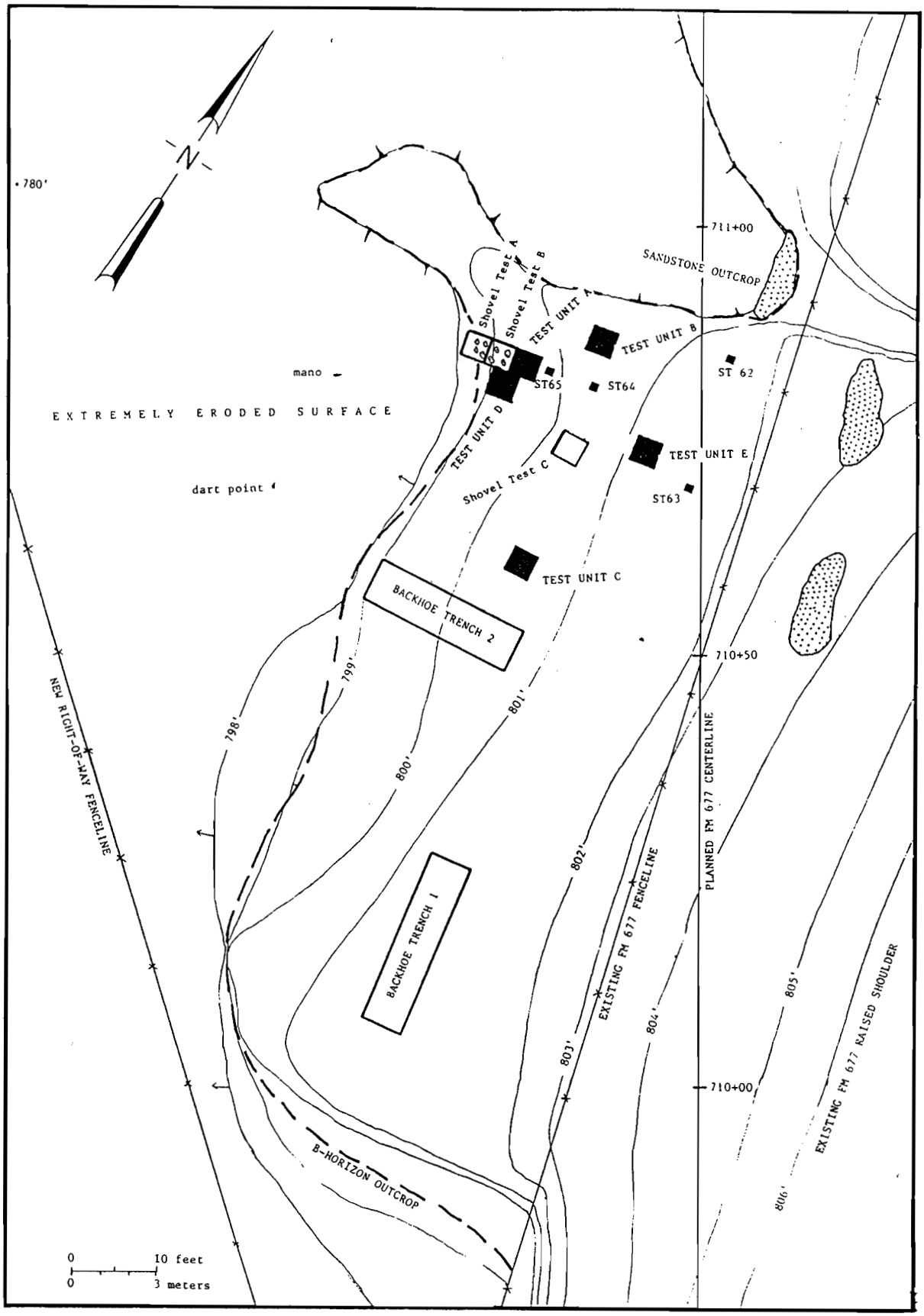

Figure 2-1. Site 41MU54, site sketch map.

existing datum points established during the right-of-way survey of the proposed highway. Fill from each level was screened through 1/4-inch hardware cloth.

The base of each level was inspected for evidence of cultural features, and once bedrock was reached walls were also cleaned and inspected for evidence of features. At least one wall was then photographed and drawn to record observed stratigraphy.

FEATURES

The concentration of sandstone rock observed in Shovel Tests A and B of the initial survey phase and Test Units A and D of this testing phase was observed to cover an area approximately 2.5 meters east-west by about 1 meter north-south. Although several of the rocks had been broken in situ, the breaks were clean, apparently the result of mechanical breakage, with no evidence that breakage had been caused as the result of heating, as in a hearth. Further, although a few of the rocks were slightly reddish orange in color, there was no strong evidence of the kind of reddish discoloration that would be anticipated as the result of the rocks having been used in a hearth. As sandstone bedrock was observed in existing exposures adjacent to the present road and at the base of Test Units B, C, and E, at slightly higher elevations than the rock scatter, and as none of the Test Units yielded any artifacts, it was concluded that the rock scatter was probably of natural origin, though it may represent rock disturbed by the construction of the present FM 677.

STRATIGRAPHY

East-west profiles from the Test Units are depicted in Figure 2-2. Those for Test Units C, D, and E, have been reversed, so that all appear to be viewed as though looking to the north.

The profiles contain similar stratigraphic elements, though not all elements are present in each of the profiles. The surface layer, Stratum I, was composed primarily of vegetal materials, mainly oak leaves, with small amounts of friable sand, frequently as individual grains. The next layer, Stratum II, consisted of light-colored (10YR 6/4, 7/4), friable sand that was interpreted as recent wash which had probably accumulated as a result of construction of the existing FM 677. The third layer, Stratum III, consisted of a dark-colored (10YR 3/2, 4/2), friable loamy sand with numerous rootlets that was interpreted as the ground surface, or A1 soil horizon that existed prior to construction of the existing FM 677. The underlying layer, Stratum IV, consisted of a lighter-colored (10YR 5/4, 6/4) loamy sand that was interpreted as an A2 soil horizon. The next layer, Stratum V, consisted of clay, somewhat sandy and yellowish red (5YR 4/6, 4/8) in the upper part, becoming plastic and redder (2.5YR 4/6, 4/8) with pea-sized quartzite gravels in the lower part, that was interpreted as a B soil horizon. The final layer encountered, Stratum VI, consisted of extremely hard, solidly cemented, sandstone bedrock.

ARTIFACTS

No cultural materials were recovered from any of the test units.

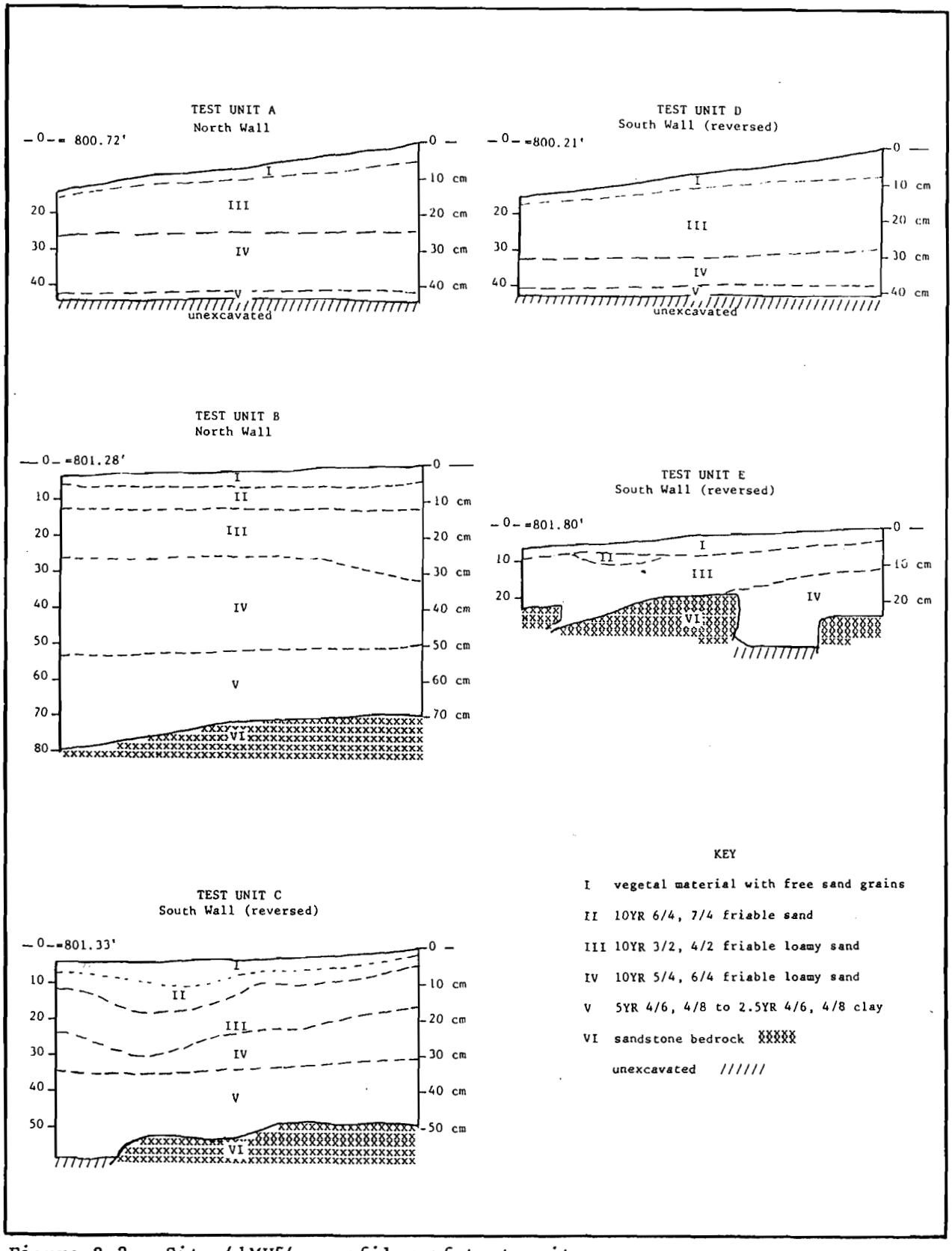

Figure 2-2. Site 41MU54, profiles of test units.

DISCUSSION

As noted above, further examination of the sandstone rock concentration indicated a natural origin, and that there was no apparent association between it and the isolated artifacts collected from the eroded surface of the slope during the survey phase of the project.

SECTION 3 - SITE 41MU55

SITE SETTING

This site is located between project survey stations 722+00 and 725+00 (Figures 1-1, 3-1), on a north-trending ridge between Valley Branch to the west and an unnamed tributary of Valley Branch to the east. Elevations range between approximately 790 and 780 feet NGVD. Surface geologic deposits have been identified as Lower Cretaceous Antler Formation sands (Bureau of Economic Geology 1967). Soils have been identified as Cona association, hilly, by the Soil Conservation Service (1978:map sheet 7). Vegetation consisted of short pasture grasses with occasional clumps of brush and briars. Margins of the right-of-way had been cleared and lightly bulldozed in places to allow for construction of the right-of-way fence; additionally, part of the central ridge had been cleared or brush-hogged in the very recent past.

PREVIOUS INVESTIGATIONS

This site was located in November 1991 by Glenn Goode, of the Texas Department of Transportation, during an archeological survey of the proposed FM 677 right-of-way. At that time, three shovel tests (each approximately 100 x 100 cm in plan), eleven shovel tests (each approximately 30 x 30 cm in plan), and seven backhoe trenches were excavated in the site area (Figure 3-1). Artifacts recovered consisted mainly of lithic debitage (with approximately equal amounts of chert and a material that appeared to be either a fairly coarse-grained silica-cemented-sandstone or quartzite) one non-diagnostic biface fragment, and a few historic items. Red, burned sandstone rocks in one of the larger shovel tests (ST. F) were tentatively identified as being part of a hearth.

Following a review of site data, the Texas Historical Commission recommended additional testing, consisting of at least seven 1-x-1 meter hand-excavated units, at the site.

TESTING METHODOLOGY

Testing at this site consisted of the excavation of seven 1-x-1-meter hand-excavated units, Test Units A-G (Figure 3-1), with minor extension of Test Unit A and an existing shovel test, Shovel Test F. Test Unit A was located close to, but offset slightly from existing Shovel Test F, in an attempt to better define the possible hearth identified in Shovel Test F during the initial survey phase of the project. However, once Test Unit A had been completed, it was found expedient to remove the balk between the two units, and to extend both units slightly in order to define two apparent hearths, Features 1 and 2. Test Units B-E were then excavated to generally explore the slight promontory ridge extending to the north. Following these excavations Test Units F and G were located in a checkerboard pattern adjacent to the southwest corner of Test Unit A in an attempt to identify limits of a possible living area, or even structure. Following completion of Test Unit G, bad weather forced abandonment of plans to excavate one or two more test units, but by then it was believed that sufficient data had been obtained in order to make a determination of site significance.

Each unit, with the exception of the extension around Test Unit A and Shovel Test F, was excavated in 10-cm horizontal levels, the vertical datum for each unit being the ground surface at the highest corner. Elevations of the ground

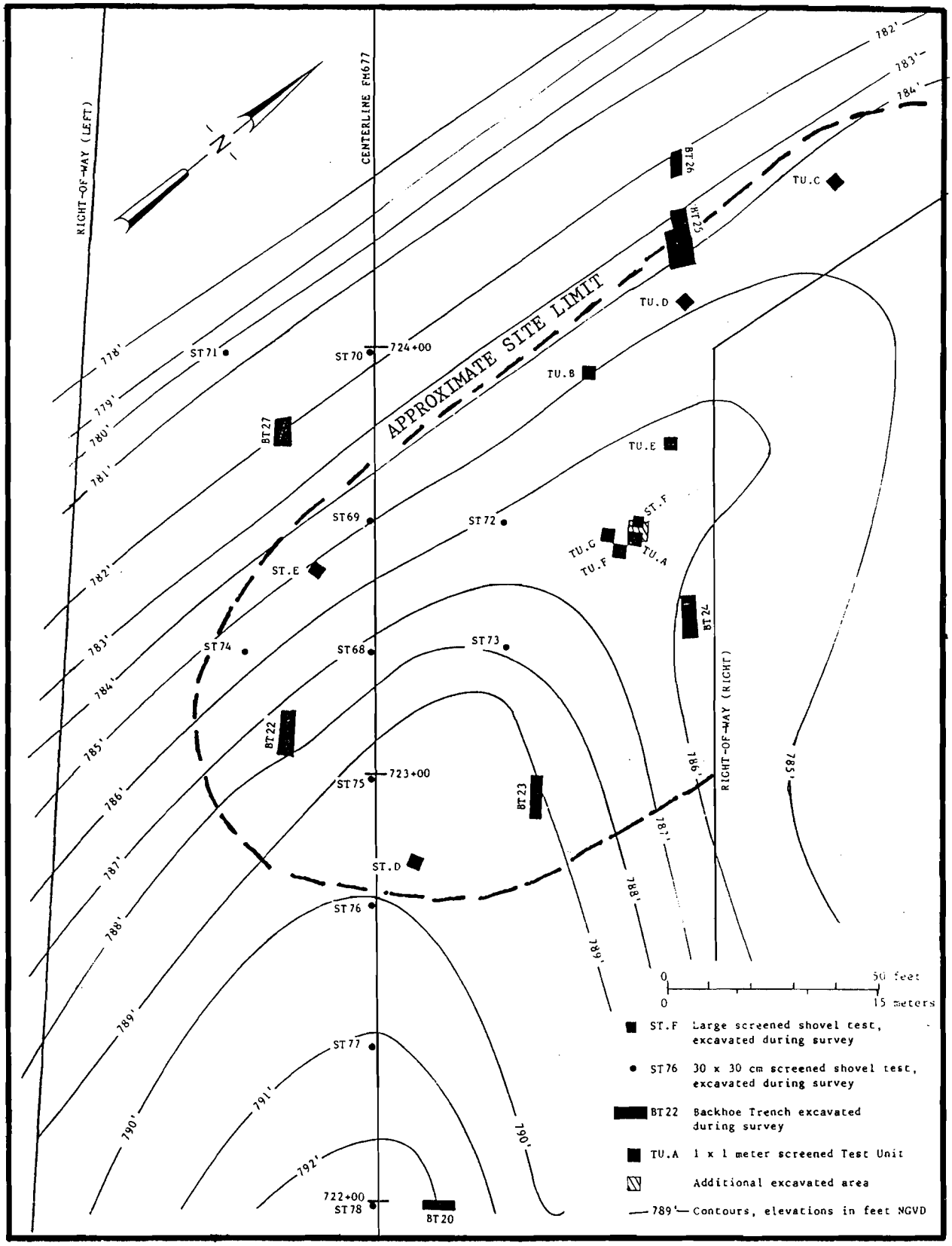

Figure 3-1. Site 41MU55, site sketch map.

surface and the base of each level were recorded at each corner of the unit using a level and stadia rod. Absolute elevations were determined from existing datum points established during the right-of-way survey of the proposed highway. Fill from each level was screened through 1/4-inch hardware cloth.

The base of each level was inspected for evidence of cultural features. When rock features were encountered, they were cleaned, photographed, drawn, and left in situ, excavation in that unit halting at the base of the rock feature. Where non-rock features were tentatively identified (only in Test Unit B), half of the feature was left in a temporary balk to provide a good cross section, while the remainder was excavated in the normal 10-cm levels. In those units in which features were not encountered, excavation continued until a clear B soil horizon had been encountered; walls were then cleaned and inspected for evidence of features. Two walls of each unit were then photographed and drawn to record observed stratigraphy. A stake with the unit designation was left at the southwest corner of each test unit for future identification.

FEATURES

Four cultural features (Features 1-4) consisting of fairly closely spaced, burned, sandstone rock were observed and interpreted as hearths. The rocks used in the hearths appeared to be considerably less siliceous than many of the rocks observed at the site, and several had the consistency of conglomerate. The four hearths are located fairly close together, and apparently in pairs (Figure 3-2). One pair, Features 1 and 2, are located in the enlarged area including Test Unit A and Shovel Test F. The other pair, Features 3 and 4, are located in Test Unit F, with Feature 4 apparently extending to the the east of the unit.

A large rock encountered at the interface of the A and B soil horizons in Test Unit G (Figure 3-2) appeared to be natural. However, it was much larger than other rocks observed at the site and, thus, may have some cultural significance.

A tentatively identified feature in Test Unit B was later proven to be a rotted out tree root. Two layers of scattered rock observed in this test unit were also interpreted as being of natural occurrence.

Feature 1

Feature 1 consists of a very tight cluster, 45 to 55 cm in diameter, of apparently burned sandstone rocks (Figure 3-3). Not cross-sectioned, the feature appears to consist of a rock-lined, slight depression to which other rocks have been placed to give an overall slightly domed appearance. No evidence was observed to indicate that the rocks had been placed in a deep pit. The rocks are generally 10 to 15 cm in diameter, or smaller. None appear to have been used as manos or metates. However, as the hearth was not dismantled it is possible that some of the unobserved rock surfaces may exhibit evidence of grinding. No charcoal, ash, or burned bone fragments were observed in the fill removed from rock interstices.

The highest point of the feature, close to the center, is at a depth of approximately 23 cm below ground surface, while the bases of rocks on the northern and southern perimeter of the feature are at a depth of approximately 32 cm below the ground surface.

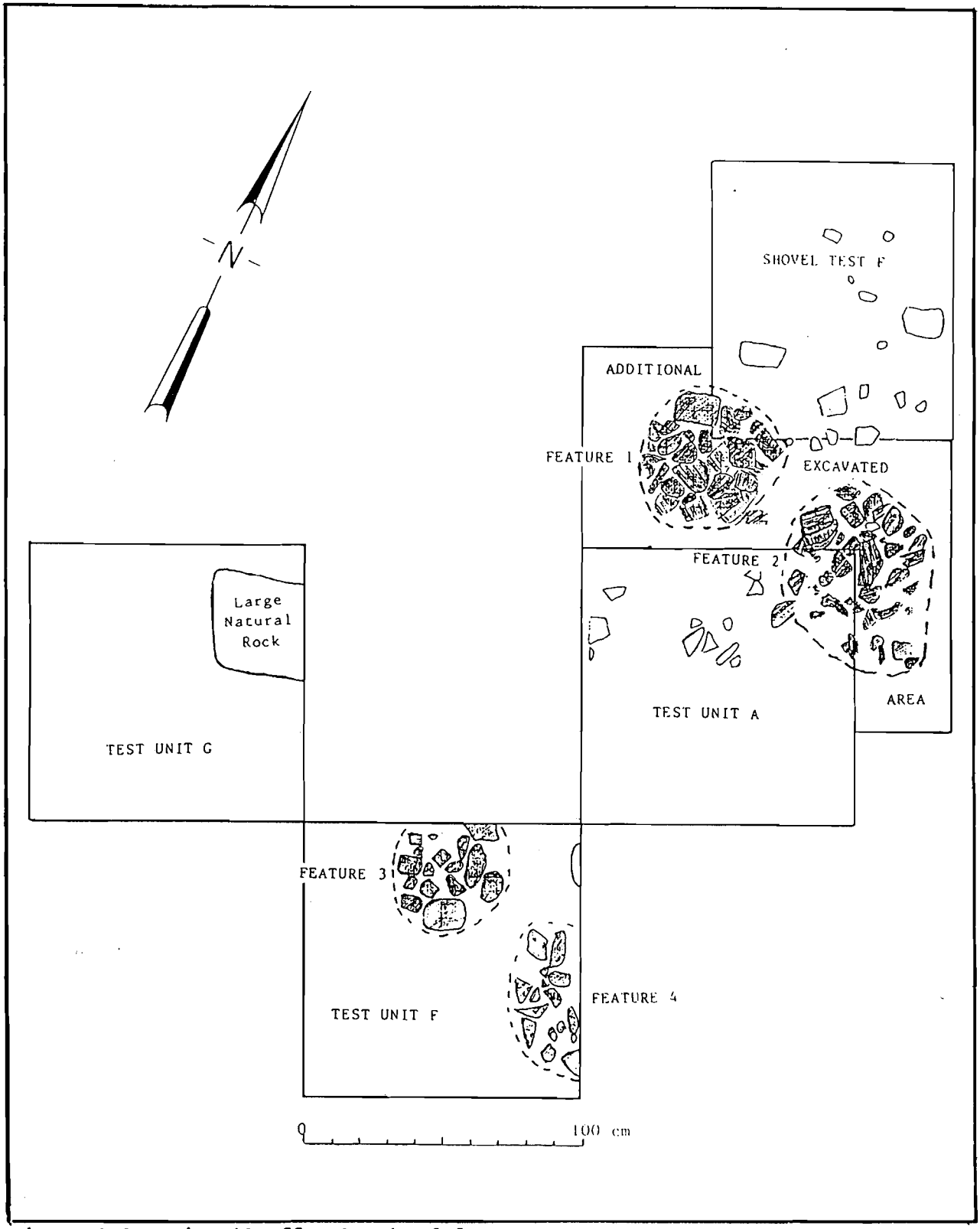

Figure 3-2. Site 41MU55, sketch of features.

Figure 3-3. Site 41MU55, Feature 1, looking north.

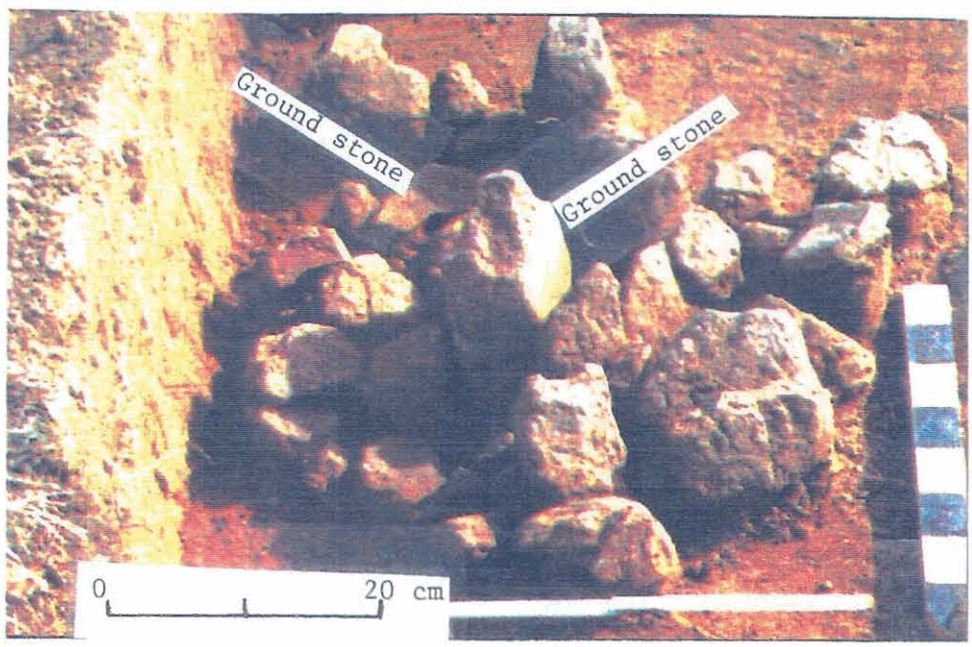

Figure 3-4. Site 41MU55, Feature 2, looking south.

Feature 2

Feature 2 consists of a more open cluster of apparently burned sandstone rocks (Figure 3-4), with a fairly dense core, approximately 50 cm in diameter, but with a few outlying rocks, which can be interpreted as post-use scattering, increasing diameter to about 60 cm. Not cross-sectioned, the feature appears to consist of a rock-lined, slight depression to which additional rocks have been placed in the center. The overall impression is that it was originally dome-shaped. No evidence was observed to indicate that the rocks had been placed in a deep pit. The rocks are generally 10 to 15 cm in diameter, or smaller. One rock, almost 20 cm across, is a metate fragment standing on edge. Another apparent metate fragment is also present in the feature. No charcoal, ash, or burned bone fragments were observed in the fill removed from rock interstices.

The highest point of the feature, in the approximate center, is at a depth of approximately 17 cm below present ground surface, while the bases of the rocks at the perimeter of the feature are at a depth of about 32 cm below the ground surface.

Feature 3

Feature 3 consists of a fairly tight cluster, approximately 40 cm in diameter, of apparently burned sandstone rocks (Figure 3-5). The feature, which was not cross-sectioned, appears to consist of a single layer of rocks lining a slight depression. No evidence was observed to indicate that the rocks had been placed in a deep pit. The rocks are generally 10 to 15 cm in diameter. None of the rocks appeared to have been used as manos or metates. However, as the hearth was not dismantled it is possible that some of the unobserved rock surfaces may exhibit evidence of grinding. No charcoal, ash, or burned bone fragments were observed in the fill removed from rock interstices.

The high points of individual rocks in the feature are at depths of between 21 and 27 cm below present ground surface, while the bases of the rocks are at a depth of approximately 30 cm below ground surface.

Feature 4

Feature 4, which appears to extend beyond the area excavated, consists of a fairly tight cluster, approximately 50 cm in diameter, of apparently burned sandstone rocks (Figure 3-5). The rocks appear to be canted at fairly steep angles, and the limited portion excavated does not enable a more precise assessment to be made of the overall configuration. However, the feature is cut across by a test unit wall, and no outline of a possible pit, into which the rocks were placed, is visible in the profile. The rocks are generally 10 cm or less in diameter. None of the rocks appeared to have been used for grinding purposes prior to use as hearthstones. However, as the hearth was not taken apart, it is possible that some of the unobserved rock surfaces may exhibit evidence of grinding. No charcoal, ash, or burned bone fragments were observed in fill removed from the rock interstices.

The high points of individual rocks in the feature are at depths of between 18 and 25 cm below present ground surface, and the bases of the rocks appear to be at a depth of about 30 cm below the ground surface.

Figure 3-5. Site 41MU55, Features 3 and 4, looking north.

Non-Cultural Features

A circular dark stain, about 35 cm in diameter, was observed initially at a depth of about 20 cm below ground surface in the western edge of Test Unit B. Fill from this included charcoaly-looking material and fragments of rotting wood. The feature was cross-sectioned, with excavation continuing to a depth of 110 cm below ground surface. The profile of the cross section clearly revealed evidence of a tree root.

Two thin scatters of rocks were also observed in Test Unit B (Figure 3-6). The first was observed in Level 3, with the upper surfaces of the rocks at a depth of about 30 cm below surface, and the second was observed in Level 4, with the upper surfaces of the rocks at a depth of about 36 cm below surface. Both layers were in an apparent A2 soil horizon. Both scatters were strewn across the entire unit, with no apparent patterning to them. Both scatters had a higher density of rock than was observed in other units and levels. The rocks were white in color, consisting of quartzites and silica-cemented-sandstone. Generally they had diameters of 10 cm or less, and thicknesses of 2 to 3 cm. All were lying flat. The rocks were interpreted as part of the natural soil column.

The large rock in Test Unit G has a width (north-south) of approximately 35 cm. The observed length (east-west) is also approximately 35 cm, but the rock extends eastward beyond the limit of the unit. The highest point of the rock is at a depth of approximately 34 cm below ground surface, and extends into unexcavated soil at a depth of approximately 44 cm. The upper part of the rock is within an apparent A2 soil horizon, whereas the lower part is within a B horizon. The rock appears to be natural, but is considerably larger than other rocks observed at the site, and thus may have some cultural significance.

STRATIGRAPHY

Composite profiles have been prepared from Test Units A, F, and G (Figure 3-7). An approximately north-south profile utilizes data from the west wall of Test Unit A, and the area excavated to the north of it, and the east wall of Test Unit F. The profile is presented as if it was all being viewed looking to the west. An approximately east-west profile has been constructed from individual profiles of the south walls of Test Units A and G, and the north wall of Test Unit F. This profile appears as though viewed looking to the north.

Both profiles reveal similar, relatively simple stratigraphy. The surface layer, Stratum I, 25 to 30 cm in thickness, consists of a friable, fine sandy loam, with a Munsell color in the dark brown (10YR 3/3, 10YR 4/3, moist) range. In Test Unit G, which was excavated and drawn in drizzly conditions, the surface layer was tentatively divided into an upper part, with a color in the 10YR 3/3, 10YR 4/3 range, and a slightly darker lower part, with a color in the 10YR 3/3, 10YR 3/2 range. This upper layer was interpreted as an A1 soil horizon. The underlying layer, Stratum II, approximately 20 cm in thickness, consisted of a similar friable, fine sandy loam, but with a lighter color, in the 10YR 5/4, moist, range, which was interpreted as an A2 soil horizon. Both Features 3 and 4 appear to be within this A2 soil horizon. The final layer excavated, Stratum III, consisted of a clayey sand or sandy clay that passed through the screen quite easily. Color was in the 5YR 4/6, 2.5YR 4/6, 2.5YR 4/8, moist, range. This layer was interpreted as a B soil horizon.

Figure 3-6. Site 41MU55, rock scatters in Test Unit B.

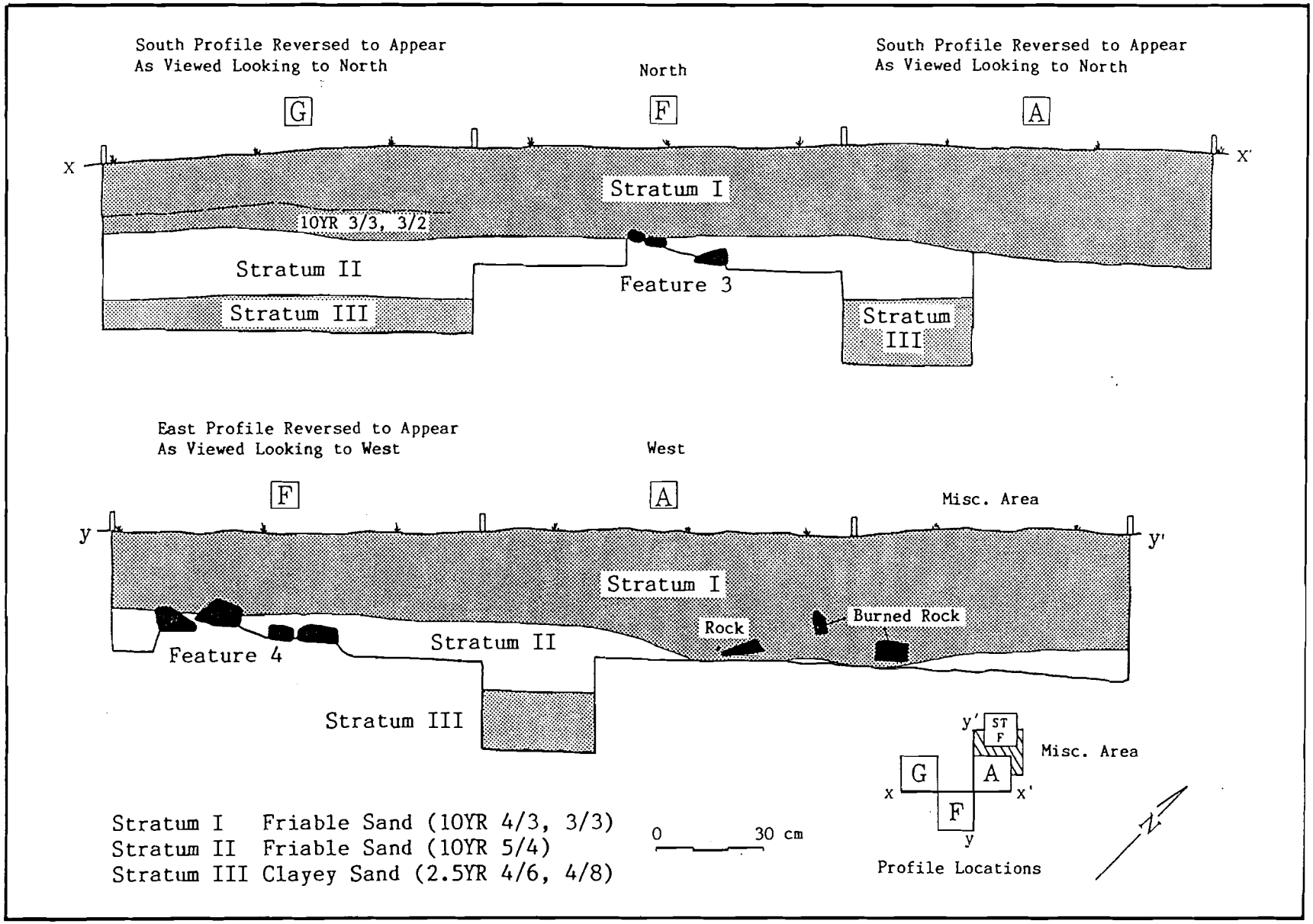

Figure 3-7. Site 41MU55, profiles, Test Units A, F, and G.

Profiles from Test Units B-E are presented in Figure 3-8. The profiles are generally similar to those encountered in Test Units A, F, and G; i.e.: Stratum I, a 10YR 4/2, 4/3, friable sandy loam layer; Stratum II, a lighter-colored (10YR 5/4, 6/4), friable sandy loam layer; and Stratum III, a friable clayey sand or sandy clay layer with color in the 2.5YR 4/6, 4/8 range. In Test Unit B, which was excavated deeper than other units, a fourth layer, Stratum IV, was exposed which consisted of very friable, fine sandy loam with a color of 7.5YR 6/6. In Test Unit E, Stratum I was divisible into an upper and a lower part, similar to that in Test Unit G, where the lower part is slightly darker (10YR 4/3, 4/2) than the upper part.

ARTIFACTS

Prehistoric

Prehistoric artifacts recovered from the test units are listed in Table 3-1. They have been divided into the usual lithic categories, with subdivision into two material categories, chert and silica-cemented-sandstone/quartzite (scs). The latter category of material is very hard, almost white in color, and with a granular texture visible to the naked eye. Additional information on material color, possibility of heat treatment, and size of each lithic piece is presented in Appendix A.

Biface Fragments

Two biface fragments were recovered, and both are made of silica-cemented-sandstone/quartzite. The fragment from Test Unit D, Level 1, consists of a medial fragment (Figure 3-9:a). It is roughly bi-convex in cross section, with a width of 30 mm and a thickness of 8.6 mm. Length is 24 mm. A slight pinkish tinge may be an indication that the material was heat-treated. The fragment recovered from the extended area in the vicinity of Test Unit A consists of a rounded end fragment, probably proximal (Figure 3-9:b). It is bi-convex in cross section, with a width of 21 mm, a thickness of 5.8 mm, and a length of 18 mm. The material also has a slight pinkish tinge. Neither fragment can be identified with a previously defined type, though the rounded end is suggestive of a Gary dart point base.

Utilized Flakes

Only two utilized flakes, both chert, were found. That from Test Unit C, Level 3, is a blade-like chip of brown chert, with cortex still remaining on the distal end (Figure 3-9:c). Edge modification is present along both dorsal edges of the flake. Dimensions are: length, 30 mm; width, 20 mm; thickness, 5 mm. The flake from Test Unit E, Level 2, is a small flake of pinkish white, very fine grained chert or chalcedony, possibly heat-treated. Fine edge modification is present along the right dorsal edge, and the distal end exhibits three small concave notches with striations in them (Figure 3-9:d). Dimensions are: length, 15 mm; width, 18 mm; thickness, 5.8 mm.

Debitage

Primary flakes. Primary flakes were identified by the presence of a bulb of percussion or a striking platform, and cortex remaining over at least

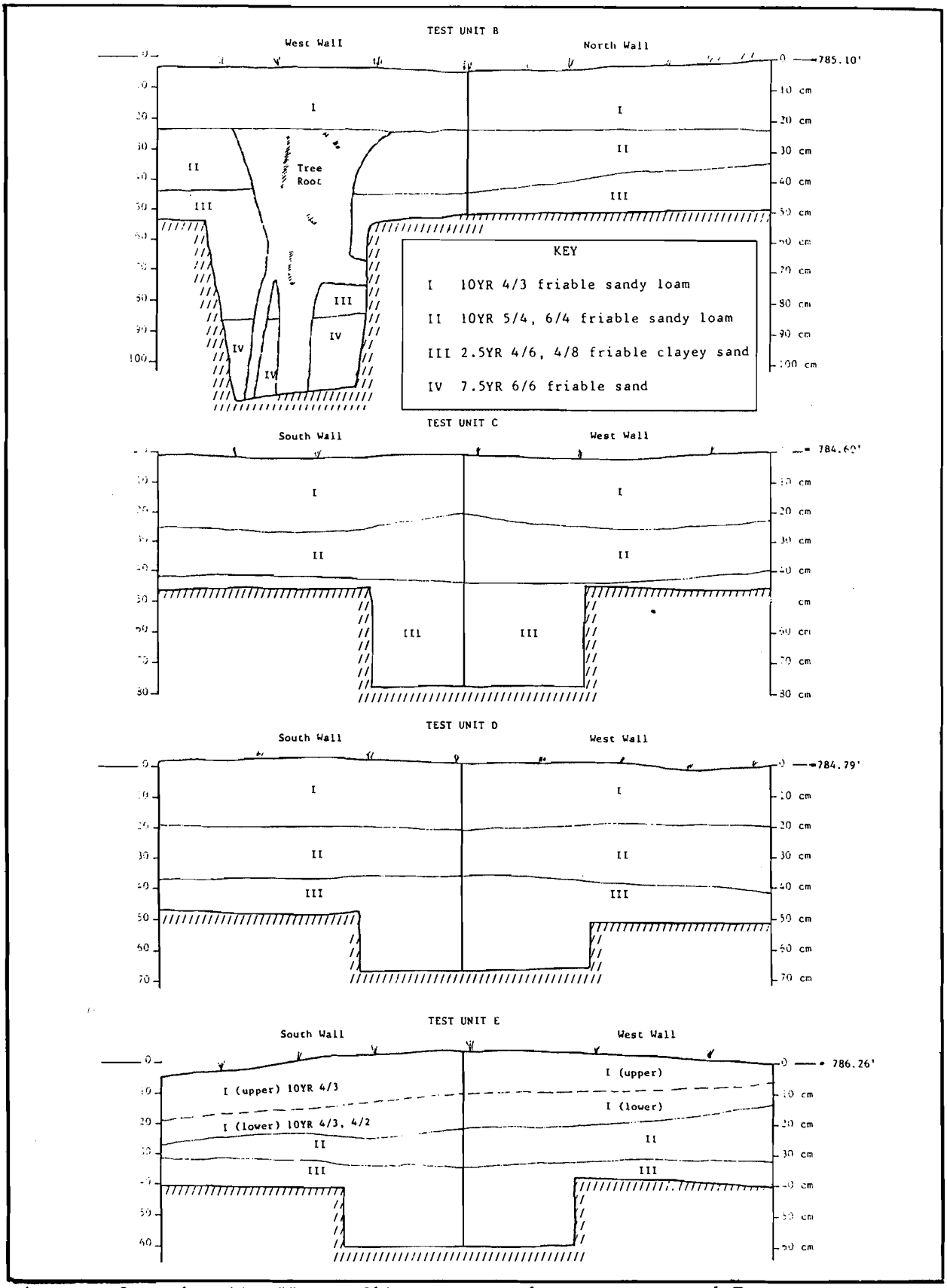

Figure 3-8. Site 41MU55, profiles, Test Units B, C, D, and E.

Table 3-1
Site 41MU55, Prehistoric Artifacts

TEST UNIT	LEVEL	BIFACES	FLAKES						CHIPS			THERMAL SPALLS
			Utilized	Primary	Secondary		Interior		Secondary	Interior		
		scs	chert	chert	chert	scs	chert	scs	chert	chert	scs	chert
A	1	-	-	-	1	-	2	2	-	1	1	-
A	2	-	-	-	-	-	1	3	1	-	-	-
A	3	-	-	1	2	-	6	2	-	4	3	-
B	1	-	-	-	3	1	2	-	-	6	5	-
B	2	-	-	-	2	-	4	2	-	3	3	-
B	3	-	-	-	1	-	4	4	-	-	-	-
B	4	-	-	-	-	-	2	-	-	1	2	-
B	5	-	-	-	1	-	1	-	-	-	-	-
C	1	-	-	-	1	-	1	-	-	2	2	-
C	2	-	-	-	1	-	3	-	-	1	1	-
C	3	-	1	-	3	-	4	4	2	2	8	-
C	4	-	-	-	1	-	4	3	-	3	8	-
C	5	-	-	-	-	-	1	1	-	-	-	-
D	1	1	-	-	-	-	-	-	2	-	3	-
D	2	-	-	-	3	-	5	1	-	1	-	-
D	3	-	-	-	-	-	2	4	-	2	1	-
D	4	-	-	-	-	-	4	1	-	-	-	-
D	5	-	-	-	-	-	-	-	-	-	1	-
E	1	-	-	-	-	-	1	1	-	1	1	-
E	2	-	1	-	-	-	1	2	-	4	2	2
E	3	-	-	-	-	-	3	2	-	2	4	-
E	4	-	-	-	-	-	1	-	-	-	-	-
F	1	-	-	-	1	-	2	-	-	3	8	-
F	2	-	-	-	2	-	1	1	-	4	7	-
F	3	-	-	-	3	-	2	3	1	4	6	-
G	1	-	-	-	-	-	1	3	-	-	1	-
G	2	-	-	-	1	-	-	5	-	-	2	-
G	3	-	-	-	3	-	6	8	2	3	2	-
G	4	-	-	-	2	1	3	2	-	2	-	1
G	5	-	-	-	-	-	1	1	-	2	1	-
MISC AREA	1-3	1	-	-	1	-	6	4	-	4	6	1
TOTALS		2	2	1	32	2	74	59	8	55	78	4

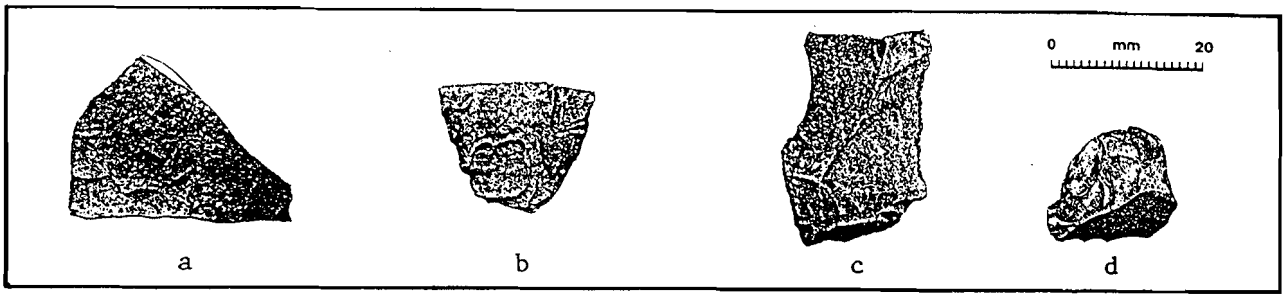

Figure 3-9. Site 41MU55, artifacts.

90% of the dorsal surface. Only one such flake was identified. Material was chert.

Secondary flakes. Secondary flakes were identified by the presence of a bulb of percussion or a striking surface, and retaining less than 90% of cortex. Thirty-four such flakes were identified, thirty-two chert and two silica- cemented-sandstone/quartzite. Nine of the chert flakes were tentatively identified as having been heat-treated, and two were identified as having been burned.

Interior flakes. Interior flakes were identified by the presence of a bulb of percussion or a striking surface, and with no remaining cortex. One hundred thirty-three such flakes were identified, 74 chert and 59 silica-cemented sandstone/quartzite. Seven of the chert flakes were tentatively identified as having been heat-treated.

Chips. Chips are flake-like fragments, but which do not exhibit a bulb of percussion or a striking platform. Definitions of secondary and interior are as for flakes. Eight secondary chips (all chert) and 133 interior chips (55 chert and 78 silica-cemented-sandstone/quartzite) were identified. One of the secondary chert chips and six of the interior chert chips were tentatively identified as having been heat-treated.

Thermal spalls. Thermal spalls include all fragments of rock that could have been used for artifact manufacture that were apparently broken as a result of being heated in a fire. Four such fragments of chert were identified. The category does not include fragments of rock that may have been used as hearth stones.

Historic

Historic artifacts recovered during the testing are listed in Table 3-2, and are briefly described below.

Ceramic

Porcelain. Two fragments of porcelain were recovered. Both fragments appear to be from the same cup, which is decal-decorated around the rim with a horizontal, 7-mm-wide green line, bounded by 1-mm-wide brown lines on both edges. A fragment of a pink floral motif, also outlined in brown is also present. The fragments probably date to the 1920s or 1930s (Clark 1992, personal communication).

Table 3-2
Site 41MU55, Historic Artifacts

TEST UNIT	LEVEL	CERAMICS		GLASS				METAL	
		Porcelain	Whiteware	aqua	clear	violet	white	copper	iron
A	1	-	8	-	3	-	-	-	-
A	2	-	1	-	-	-	-	-	1
A	3	-	-	-	1	-	-	-	-
B	1	-	-	-	1	-	-	-	-
B	2	-	-	-	-	-	-	-	-
B	3	-	-	-	-	-	-	-	-
B	4	-	-	-	-	-	-	-	-
B	5	-	-	-	-	-	-	-	-
C	1	-	-	1	8	6	1	2	2
C	2	1	-	-	-	18	1	1	4
C	3	1	-	-	-	1	-	-	-
C	4	-	-	-	-	-	-	-	-
C	5	-	-	-	-	-	-	-	-
D	1	-	-	-	-	1	-	-	1
D	2	-	1	-	1	1	-	-	1
D	3	-	-	-	-	-	-	-	-
D	4	-	-	-	-	-	-	-	-
D	5	-	-	-	-	-	-	-	-
E	1	-	-	-	-	-	-	-	-
E	2	-	1	-	-	-	-	-	1
E	3	-	-	-	-	-	-	-	-
E	4	-	-	-	-	-	-	-	-
F	1	-	1	-	-	-	-	-	1
F	2	-	-	-	-	-	-	-	-
F	3	-	-	-	-	-	-	-	-
G	1	-	-	-	-	-	-	-	-
G	2	-	1	-	-	-	-	1	2
G	3	-	-	-	-	-	-	-	-
G	4	-	-	-	-	-	-	-	-
G	5	-	-	-	-	-	-	-	-
MISC AREA	1-3	-	-	-	-	-	-	-	-
TOTALS		2	13	1	14	27	2	4	13

Whiteware. Thirteen fragments of whiteware were recovered. The nine from Test Unit A are all from a single plate, which had a footring diameter of 4.5 inches. The fragment from Test Unit D is a small rim fragment from a plate; it is too small to calculate diameter. The fragment from Test Unit E is a small non-diagnostic piece. The fragment from Test Unit F appears to be from a cup or bowl. The fragment from Test Unit G is a rim fragment from a bowl or plate. None of the fragments are decorated, and none contains a maker's mark. They could date to the late-nineteenth century or the twentieth century.

Glass

Glass, aqua. The single aqua glass sherd is green-tinged and is a bottle body fragment. The partial legend "TEX" is embossed on it. It is almost certainly from a twentieth century soda bottle.

Glass, clear. Fourteen clear glass sherds were found. The four fragments from Test Unit A were all from a lamp chimney. The fragment from Test Unit B is a body fragment from a jar or bottle. It includes the embossed partial legend "M", and it is likely that it is from a Mason jar. The sherds from Test Unit C are all flat fragments, possibly from window glass. The fragment from Test Unit D is a non-diagnostic bottle or jar body fragment.

Glass, violet. Twenty-seven sherds of glass with a slight violet discoloration were found. Such discoloration is typical of glass that was originally decolored with manganese, a technique that was most prevalent between 1880 and 1916 (Munsey 1970:55). The fragments from Test Unit C are from a screw-top canning jar. One fragment includes an embossed "B" in script, and another fragment also includes a portion of an embossed letter, possibly L, in script. It is thus likely that the fragments are from a Ball canning jar, with the script embossing indicating a twentieth-century date (Toulouse 1971:66,67). The two fragments from Test Unit D are non-diagnostic curved bottle or jar body fragments.

Glass, white. The two fragments of white glass are extremely small. As they were found in the same level with canning jar fragments, it is not unreasonable to suggest that they may have been from a lid for a canning jar.

Metal

Copper. Four copper, or copper alloy, artifacts were recovered. The two from Test Unit C, Level 1 are small (7.5 mm diameter) eyelets, possibly from a shoe. The item from Test Unit C, Level 2, is a .22 shell case, with an impressed diamond in the base. The other artifact, from Test Unit G, consists of a flat strip with dimensions of: length, 37 mm; width, 15 mm; and thickness, 0.3 mm.

Iron. Thirteen iron or steel artifacts or fragments were recovered. They consist of five can fragments (two each from Test Unit C, Levels 1 and 2, and one from Test Unit D, Level 2), one 3-inch wire nail (Test Unit A, Level 2), one 2.5-inch wire nail (Test Unit G, Level 3), two 2-inch wire nails (Test Unit C, Level 2, and Test Unit G, Level 3), a chrome plated safety pin (Test Unit C, Level 2), a small strap buckle (Test Unit F. Level 1), a small flat strip (Test Unit E, Level 2), and a small, cast, decorative fragment (Test Unit D, Level 1).

DISCUSSION

Historic

Historic artifacts, apparently representing casual disposal of household refuse, are largely confined to the upper two levels (within approximately 20 cm of the surface), and are probably within a plow zone, even though a plow zone was not clearly identifiable in profiles from the test units. The slightly lighter color of the upper part of the surface layer, Stratum I, in Test Units E and G, may be indicative of such a plow zone. The thickness of the upper part of this layer, approximately 15 cm, would be appropriate for a plow zone.

Although none of the historic artifacts could be positively dated with any great degree of accuracy, all are typical of the first half of the twentieth-century. No structural remains were observed in the immediate vicinity.

Prehistoric

Stratigraphy

Prehistoric artifacts were found throughout all excavated levels (Table 3-3). Five of the Test Units (B, C, D, E, and G) were excavated into apparently culturally sterile B-horizon soils. Examination of artifact counts from these units reveals the following artifact counts by level:

Level	1	2	3	4	5
chert	20	32	40	24	6
scs	18	18	37	17	4
Total	38	50	77	41	10

Artifact density is clearly greatest in Level 3, 20 to 30 cm below surface. Artifacts are noticeably less frequent in Level 4, and are virtually absent in Level 5. Artifact counts from Test Units A and F, which were excavated only to the approximate base of the features, reveal a similar greatest frequency in Level 3:

Level	1	2	3
chert	10	9	23
scs	11	11	14
Total	21	20	37

The concentration of prehistoric artifacts within the upper three levels, generally corresponds with the surface soil layer, Stratum I, observed in the profiles. The upper part of this stratum, which includes historic artifacts, is apparently within a plow zone, while the lower part, which includes the features, appears to be undisturbed.

Features

The four features, all interpreted as hearths, are similar in appearance and appear to be relatively intact. Thus, it can be interpreted that they represent a single cultural event or episode. Comparison with features reported from other sites in the general north-central Texas area (see the Cultural Background section) indicates the greatest similarity with slab-lined hearths, 40 x 45 cm,

Table 3-3
Site 41MU55, all prehistoric artifacts by material and level

TEST UNIT	MATERIAL	LEVEL 1		2		3		4		5		TOTALS		
		c*	s§	c	s	c	s	c	s	c	s	c	s	both
A	chert	4	–	2	–	13	–	x	–	x	–	19	–	
	scs	–	3	–	3	–	5	–	x	–	x	–	11	30
B	chert	11	–	9	–	5	–	3	–	2	–	30	–	
	scs	–	6	–	5	–	4	–	2	–	0	–	17	47
C	chert	4	–	5	–	12	–	8	–	1	–	30	–	
	scs	–	2	–	1	–	12	–	11	–	1	–	27	57
D	chert	2	–	9	–	4	–	4	–	0	–	19	–	
	scs	–	4	–	1	–	5	–	1	–	1	–	12	31
E	chert	2	–	8	–	5	–	1	–	x	–	16	–	
	scs	–	2	–	4	–	6	–	0	–	x	–	12	28
F	chert	6	–	7	–	10	–	x	–	x	–	23	–	
	scs	–	8	–	8	–	9	–	x	–	x	–	25	48
G	chert	1	–	1	–	14	–	8	–	3	–	27	–	
	scs	–	4	–	7	–	10	–	3	–	2	–	26	53
Sub-total	chert	30	–	41	–	63	–	24	–	6	–	164	–	
	scs	–	29	–	29	–	51	–	17	–	4	–	130	294
	both	59		70		114		41		10		294		
Misc Area	chert	12	–		–		–		–		–	12	–	
	scs	–	11	–		–		–		–		–	11	23
	both	23										23		
TOTAL	chert	42	–	41	–	63	–	24	–	6	–	176	–	
	scs	–	40	–	29	–	51	–	17	–	4	–	141	317
	both	82		70		114		41		10		317		

c* = chert
s§ = scs (silica-cemented-sandstone/quartzite)

40 x 75 cm, and 40 x 50 cm, reported from Sites 41DN85 and 41DN102 (Skinner and Baird 1985). Those hearths were dated to the Late Archaic period; thus, the hearths from 41MU55 may date to the same period.

The proximity of the hearths to one another may be compared with hearths and living areas identified at Sites X41HD26 and X41HD24 in the De Cordova Bend Reservoir (Lake Granbury), on the Brazos River in Hood County (Skinner 1971). Although the central hearths associated with the living areas at Sites X41HD24 and X41HD26 were considerably larger than the hearths at 41MU55, it is possible that the hearths at Site 41MU55 also may be part of a defineable living area.

Artifacts

The artifacts, consisting mainly of debitage, are not good indicators of site activities. The generally small size of the debitage, and the generally small amount of cortex observed on the flakes, suggests that lithic artifacts were only finished or maintained at the site, with initial reduction taking place elsewhere. The ground stone in Feature 2 indicates the use or processing of vegetal foodstuffs, probably acorns. The apparent absence of projectile points may further stress reliance on vegetal foodstuffs.

None of the prehistoric artifacts can be associated with a discrete temporal period or cultural group. However, the biface fragment (Figure 3-9:b) recovered from the vicinity of Test Unit A could be a stem fragment from a Gary dart point, which would indicate a Late Archaic time period. Further evidence of a Late Archaic occupation may be found in the relatively high frequency of silica-cemented-sandstone/quartzite (scs) in the artifact inventory, 141 out of 317 lithic fragments, or 44% (Table 3-3).

Analysis of material by level (Table 3-4) shows a fairly consistent ratio of chert to silica-cemented-sandstone/quartzite (scs). This fairly consistent ratio may be interpreted as evidence of a single cultural episode, supporting the conclusion reached from the features/hearths.

Table 3-4
Site 41MU55, lithics by material and level

	chert		scs	
	#	%	#	%
Level 1	30	51	29	49
Level 2	41	59	29	41
Level 3	63	55	51	45
Level 4	24	59	17	41
Level 5	6	60	4	40

A brief analysis of the horizontal artifact distribution in the vicinity of the features shows a considerably greater density of lithic pieces in Test Units F and G (48 and 53 pieces respectively) than in Test Unit A and the miscellaneous area excavated around it (30 and 23 pieces respectively). This may be an indication that specific use areas may be discernible within the vicinity of the features. Artifact counts from the other test units indicate high artfifact densities in Test Units B and C, and low densities in Test Units D and E.

When frequency of artifact material is compared between individual test units, chert is noticeably more frequent in Test Units A, B, D, and E; chert and silica-cemented-sandstone/quartzite (scs) are more evenly distributed in Test Units C, G, and the miscellaneous area around Test Unit A; and in Test Unit F, chert is slightly in the minority:

Test Unit:	A	B	C	D	E	F	G	Misc
chert, # of pieces:	19	30	30	19	16	23	27	12
scs, # of pieces:	11	17	27	12	12	25	26	11

Summary

In summary, the prehistoric occupation appears to represent a single occupation or event, probably dating to the Late Archaic time period. The upper part of the prehistoric deposit has been disturbed, probably by plowing, and is mixed with historic artifacts. However, the lower part of the prehistoric deposit, perhaps 15 to 20 cm thick, appears to be intact, at least in the vicinity of Test Units A, F, and G. Furthermore, intact features are present, and it is possible that a discrete living area may be identifiable. However, artifacts recovered to date have been neither temporally nor functionally diagnostic, and it appears unlikely that the site will contain preserved floral or faunal remains. Further, there is an absence of charcoal with which to radiocarbon date the features.

SECTION 4 - SITE 41MU57

SITE SETTING

This site is located in the vicinity of survey station 10848+50. It is located at the end of a promontory extending slightly north of the general line of the bluff forming the south wall of the Red River alluvial floodplain (Figure 1-1, 4-1). Steep slopes descend to the north, east, and west. Elevation on the site area is between 800 and 810 feet NGVD. The site is located at, or near, the geologic interface of the Lower Cretaceous Antlers Formation (consisting of sands, clays, and conglomerates) and the underlying Permian rocks above the Graham Formation (mudstones and sandstones) (Bureau of Economic Geology 1967). Numerous hard sandstone blocks were present on the surface along the eastern margin of the site area. Both poorly cemented sandstone and mudstone were observed eroding from the northern slope, which extended down to the Red River floodplain. Soils have been identified as belonging to the Cona association, hilly (Soil Conservation Service 1978:map sheet 7). Vegetation on the site includes scattered oaks and other hardwoods, with a generally grassy understory with occasional patches of briars.

PREVIOUS INVESTIGATIONS

This site was located in November 1991 by Glenn Goode, of the Texas Department of Transportation, during an archeological survey of the proposed FM 677 right-of-way. At that time, a non-diagnostic biface fragment and two flakes were found on the surface along the east right-of-way margin, and several flakes and flaked pebbles were found along the centerline. Two shovel tests (GG1 and GG2) were dug during this initial survey. No cultural remains were recovered from them.

Additional survey was conducted, which included excavation of 10 shovel tests, ST1 through ST10 (Figure 4-1). Each of the shovel tests was approximately 30 x 30 cm in plan, and extended in depth to either bedrock or a good B-horizon, with bedrock generally being encountered at a depth of about 30 cm. No buried cultural stratigraphy or cultural features were observed. Fill from the shovel tests was screened through 1/4-inch hardware cloth, but no cultural materials were recovered.

Following a review of site data, the Texas Historical Commission recommended additional testing, consisting of three backhoe trenches and at least five 1-x-1-meter hand-excavated units.

TESTING METHODOLOGY

Initial testing consisted of the excavation of the three backhoe trenches, Backhoe Trenches I-III, in the locations requested by the Texas Historical Commission (Figure 4-1). Each trench was approximately 14 meters in length, and excavated into a somewhat friable "sandrock" bedrock. Excavation was monitored in an attempt to identify cultural features and artifacts. Walls of the trenches were cleaned and examined in an attempt to identify cultural features or buried cultural deposits. Finally, soil profiles were recorded at 2-meter intervals along each of the trenches.

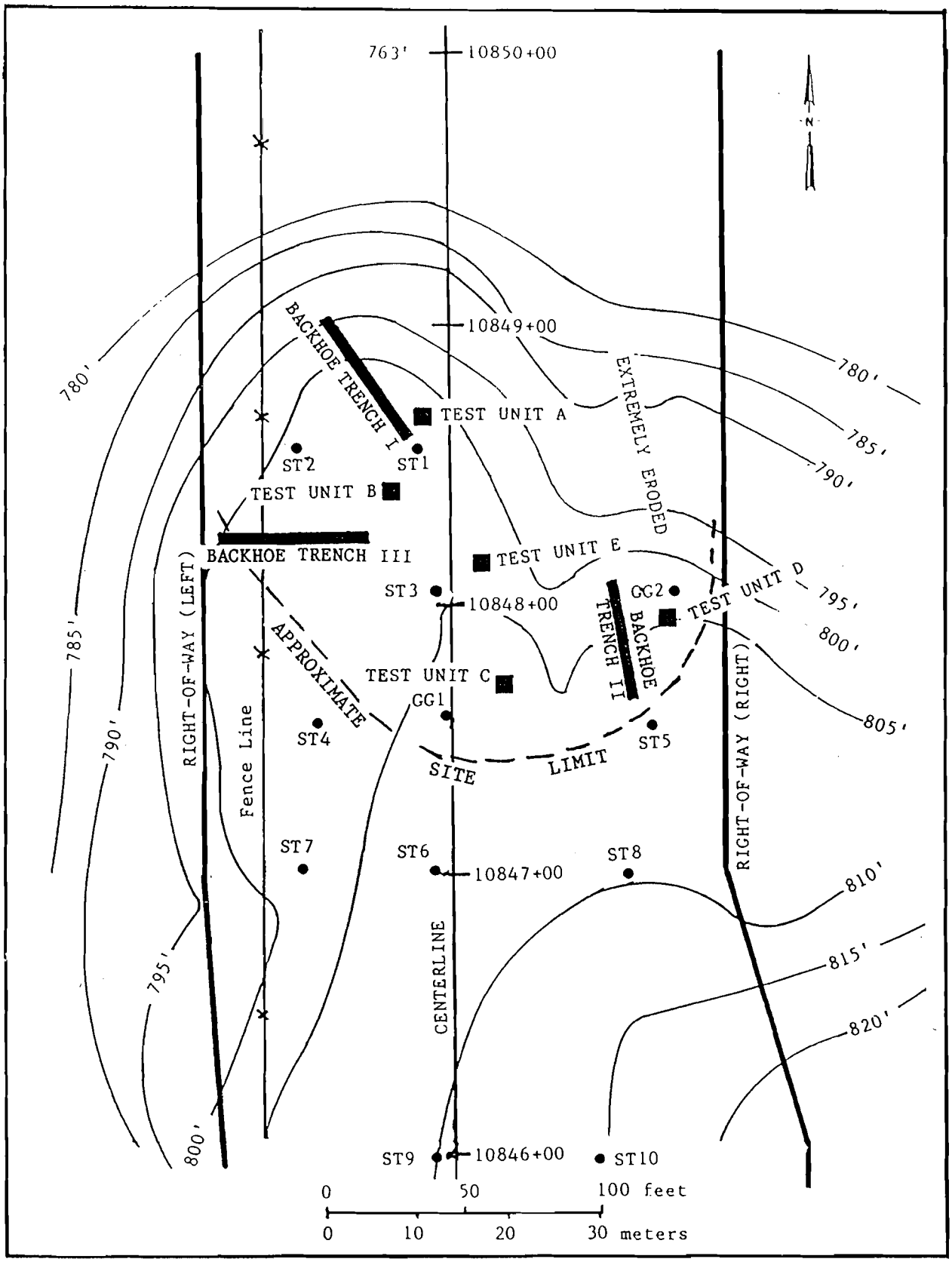

Figure 4-1. Site 41MU57, site sketch map.

The five 1-x-1-meter test units (Test Units A-E) were located so as to test the entire general site area (Figure 4-1). Each of the test units was excavated with an initial 15-cm horizontal level, with the depth being measured from the ground surface at the highest corner. Subsequent levels were each 10 cm in depth. Elevations of the ground surface and the base of each level were recorded at each corner of the unit using a level and stadia rod. Absolute elevations were determined from existing datum points established during the right-of-way survey of the proposed highway. Fill from each level was screened through 1/4-inch hardware cloth.

The base of each level was inspected for evidence of cultural features, and excavation was continued until a clear B soil horizon or bedrock was reached. Walls were then cleaned and inspected for evidence of features. Two walls of each unit were then photographed and drawn to record observed stratigraphy.

FEATURES

No cultural features were observed in the walls or floors of either the backhoe trenches or the test units.

STRATIGRAPHY

Profiles of the backhoe trenches are depicted in Figure 4-2. Backhoe Trenches I and II, both located on the edge of the uplands, revealed similar stratigraphy. Surface layers, Stratum I, consisted of humus and humus-stained friable sand, 10YR 3/2 to 10YR 4/3 in color. The underlying layer, Stratum II, consisted of lighter colored, generally about 10YR 6/3, friable sand. The next layer, Stratum III, consisted of a sandy clay or mixed sand and clay. Sand ranged in color between 5Y 7/4 and 10YR 6/3, while clay ranged in color from 5YR 4/4 to 10YR 4/4. The final layer encountered, Stratum IV, consisted of a somewhat friable "sandrock" bedrock, the upper part of which was penetrated by veins of clay in old root fissures, and the lower part being fairly solid. Color of the "sandrock" ranged between 2.5Y 6/3 and 5Y 7/4.

The soil profile from Backhoe Trench III, located on the relatively level upland ridge top, differs slightly from the other profiles, in having a fairly well developed clay subsoil. The surface layer, Stratum I, consists of humus and humus stained friable sand, approximately 10YR 3/3 in color. The underlying layer, Stratum II, consists of friable sand, somewhat lighter in color, approximately 7.5YR 5/4 to 10YR 5/4. The next layer, Stratum III, consists of a clay with a color between 2.5YR 4/6 and 5YR 4/6. At the western end of the trench, a lighter-colored clay, 5Y 7/2 with 5YR 4/6 mottles was present. The final layer, Stratum IV, consisted of the somewhat friable "sandrock" bedrock observed in the other trenches.

Profiles from the test units are depicted in Figure 4-3. They reveal stratigraphy consistent with that revealed in the backhoe trenches.

ARTIFACTS

The only cultural materials recovered during the testing consisted of lithic debitage. Material included both chert and silica-cemented-sandstone/quartzite. Artifacts are summarized in Table 4-1, and additional information regarding color and size is presented in Appendix B.

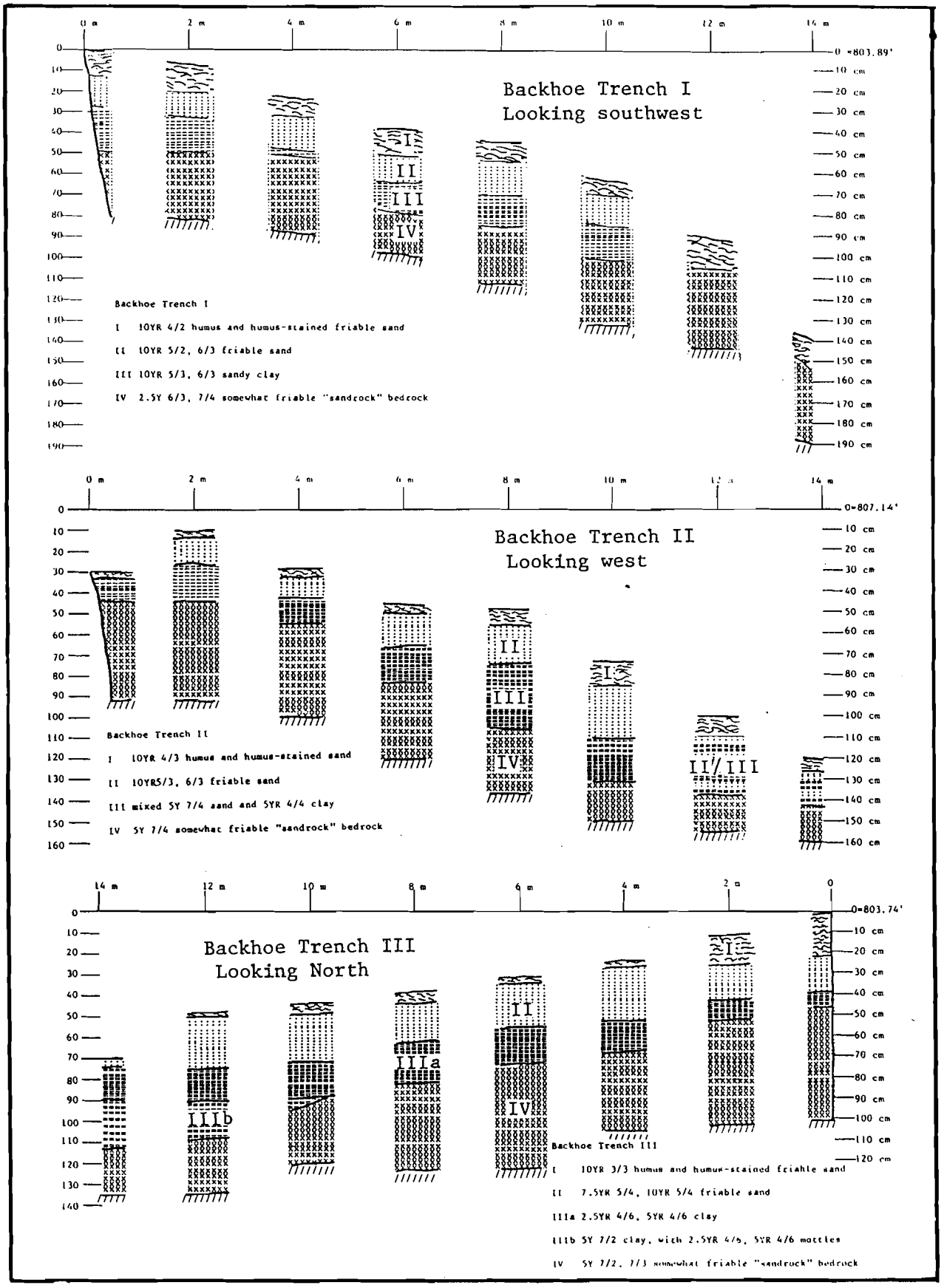

Figure 4-2. Site 41MU57, Backhoe Trench profiles.

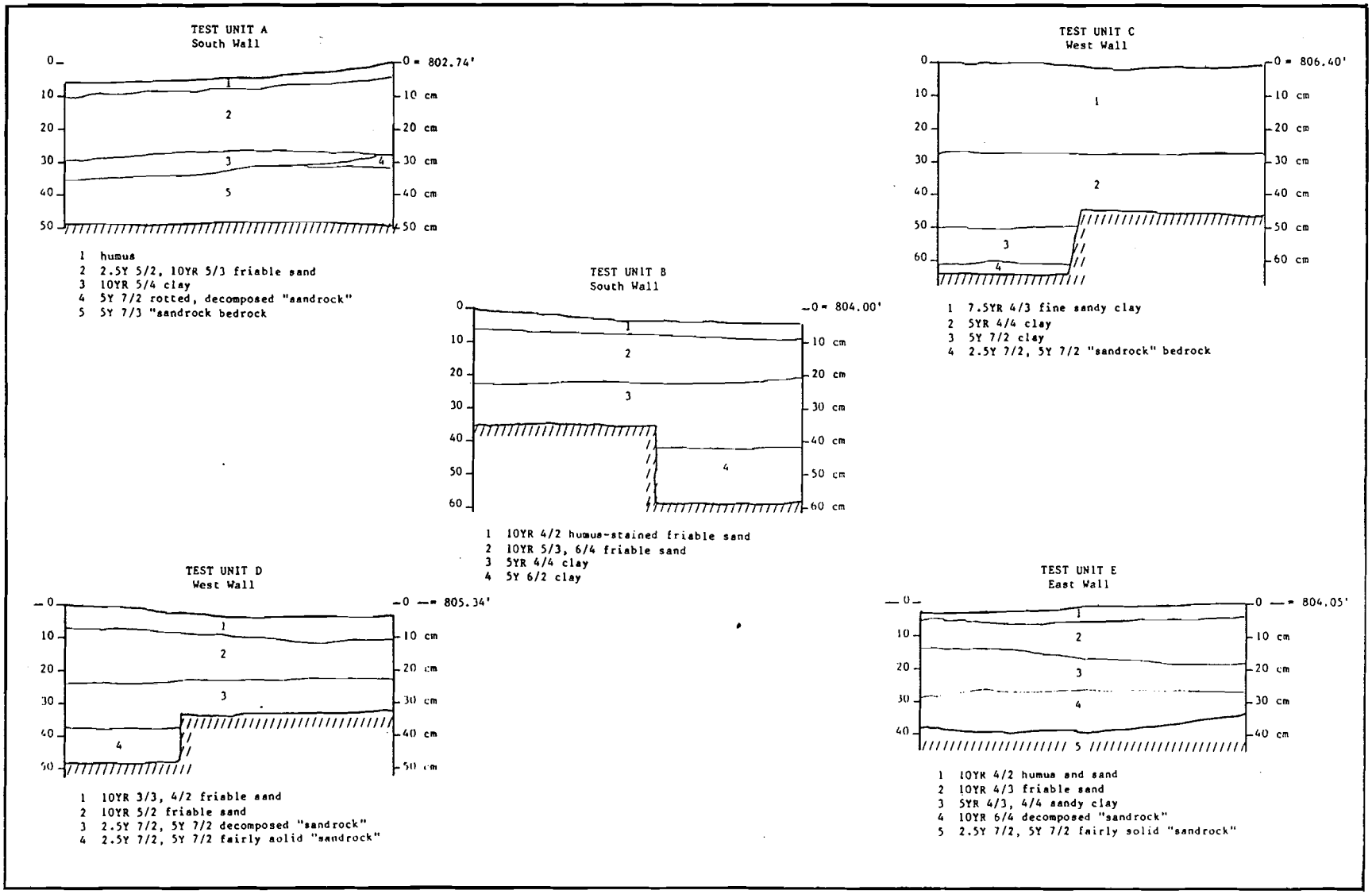

Figure 4-3. Site 41MU57, test unit profiles.

Table 4-1
Site 41MU57, Artifacts

Unit	Level	Flakes				Chips				TOTAL
		Secondary		Interior		Secondary		Interior		
		chert	scs	chert	scs	chert	scs	chert	scs	
A	1	-	-	-	1	-	-	-	-	1
	2	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-
B	1	-	-	3	-	-	-	-	1	4
	2	1	-	-	-	-	-	1	-	2
	3	-	-	-	-	-	-	-	-	-
C	1	1	-	-	1	-	-	-	-	2
	2	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-
D	1	-	-	-	-	-	-	-	-	-
	2	-	-	-	1	-	-	1	1	3
	3	-	-	-	-	-	-	-	-	-
E	1	2	-	4	1	-	-	3	2	12
	2	-	-	2	-	-	-	2	5	9
	3	-	-	-	-	-	-	-	1	1
TOTALS		4	-	9	4	-	-	7	10	34

Definitions of the debitage classes are as those described for Site 41MU55. None of the debitage is either temporally or culturally diagnostic, although the number of silica-cemented-sandstone/quartzite flakes may be indicative of a Late Archaic or Late Prehistoric I temporal period.

DISCUSSION

The site consists of a very sparse lithic scatter, probably representing the remains of a small hunting camp which provided a good vantage point over the adjacent Red River floodplain. The cultural remains were confined almost entirely to the upper 25 cm of deposits, and, because of erosion, are almost certainly in a deflated or disturbed context. The cultural remains cannot be assigned to any cultural period or cultural affiliation with any degree of certainty, though the proportion of silica-cemented-sandstone/quartzite in the debitage may indicate a Late Archaic or Late Prehistoric I temporal association.

SECTION 5 - SIGNIFICANCE

CRITERIA OF SIGNIFICANCE

The National Register of Historic Places criteria for evaluation of significance (36CFR, Part 60.4) are:

> The quality of significance in American history, architecture, archeology and culture is present in districts, sites, buildings, structures and objects of State and local importance that possess integrity of location, design, setting, materials, workmanship, feeling and association, and (a) that are associated with events that have made a significant contribution to the broad patterns of our history; or (b) that are associated with the lives of persons significant in our past; or (c) that embody the distinctive characteristics of a type, period or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or (d) that have yielded, or may be likely to yield information important in prehistory or history (36CFR, Part 60.4).

Thus, in general, a prehistoric archeological site must normally meet criterion (d) to be considered significant. That is, the site should be likely to yield information important in prehistory.

SITE 41MU54

Testing at this site failed to locate any cultural materials. Further, additional excavation of the rock feature that was tentatively identified as a prehistoric hearth during previous investigations led to the conclusion that it was probably natural in origin, but may have resulted from construction of the existing FM 677.

As no cultural remains were located during the testing, it is unlikely that other cultural remains are present in quantity at the location. Thus, it is considered that the site is unlikely to yield any information important in prehistory; and the site is considered not significant.

SITE 41MU55

Testing at this site indicated the presence of both a historic and a prehistoric archeological component.

Historic Component

The historic component consists of a relatively thin artifact scatter, apparently representing casual disposal of household refuse, confined to the upper two levels (within approximately 20 cm of the surface), and probably within a plow zone. Although none of the historic artifacts could be dated with any great degree of accuracy, all are typical of sites dating to the first half of the twentieth-century. No structural remains were observed in the immediate vicinity with which the artifact scatter could be associated.

Based on the low density and the relative recent age of the historic artifacts, and the lack of any associated structures or other historic features, it is believed that the historic component at the site is not likely to yield any important information regarding the history of the area. Thus, the historic component is considered to be not significant.

Prehistoric Component

The prehistoric component, though limited to relatively near-surface deposits with a maximum depth of 30 to 40 cm, does include deposits which appear to be undisturbed. These undisturbed deposits include intact features, four rock hearths having been identified during the testing. As yet no diagnostic artifacts have been found, though lithic materials and one biface fragment are suggestive of a Late Archaic or Late Prehistoric I temporal affiliation. The acidic and friable nature of the soil at the site is such that floral and faunal remains are unlikely to be present.

Despite the lack of diagnostic artifacts and the unlikely preservation of floral and faunal remains, the presence of undisturbed features suggests that the site has the potential to yield important information concerning the prehistory of the area. In particular, it is thought that additional excavation at the site may lead to the identification of an individual living area, in which discrete activity areas may be discernible.

As outlined under both the Previous Archeological Research and Cultural Background headings of the introductory section of this report, little archeological research has been undertaken in Montague County, and no Late Archaic or Late Prehistoric I period sites have been excavated in the county. Further, information on the two periods has had to be extrapolated from data obtained from sites at considerable distances from Montague County.

Thus, as the site is likely to yield information regarding a cultural period for which there is presently little data from the area, the prehistoric component of the site is considered to be significant.

SITE 41MU57

Testing at this site revealed an extremely sparse lithic scatter. None of the recovered lithics were temporally or culturally diagnostic. All of the artifacts were found in near-surface deposits, and because of erosion they may well be in a deflated or disturbed context. No features were identified during the testing, and the shallow depth of the surface of bedrock makes it unlikely that features are present.

Thus, it is believed that the site is not likely to yield any important information regarding the prehistory of the area, and the site is considered to be not significant.

SECTION 6 - RECOMMENDATIONS and DATA RECOVERY PLAN, SITE 41MU55

RECOMMENDATIONS

Site 41MU54

As this site is considered to be not significant, i.e., unlikely to yield any information important to prehistory, it is recommended that no further archeological research be conducted at the site, and that construction should be allowed to proceed.

Although there is little or no probability for the presence of significant areas of undisturbed buried cultural remains, there is a slight possibility that occasional artifacts and small, isolated cultural features may still be present within the area, and may be encountered during construction activities. Thus, machine operators and supervisors should be alerted to the possibility of such features. If features or large quantities of artifacts are encountered, construction should cease in the immediate area and the Advisory Council on Historic Preservation and the State Historic Preservation Officer (Texas Historical Commission) should be contacted in accordance with 36CFR800.11.b.2.

Site 41MU55

As this site is considered to be significant in that it is believed that the site has the ability to yield important information regarding the prehistory of the area, it is recommended that data recovery be undertaken at the site prior to road construction. A proposed data recovery plan for the site is presented below.

Site 41MU57

As this site is considered to be not significant, i.e., unlikely to yield any information important to prehistory, it is recommended that no further archeological research be conducted at the site, and that construction should be allowed to proceed.

Although there is little or no probability for the presence of significant areas of undisturbed buried cultural remains, there is a slight possibility that small, isolated cultural features may still be present within the area, and may be encountered during highway construction. Machine operators and supervisors should be alerted to the possibility of such features. If features or large quantities of artifacts are encountered, construction should cease in the immediate area and the Advisory Council on Historic Preservation and the State Historic Preservation Office (Texas Historical Commission) should be contacted in accordance with 36CFR800.11.b.2.

DATA RECOVERY PLAN - SITE 41MU55

Research Framework

As previously discussed, based on the high proportion of silica-cemented-sandstone/quartzite debitage in the artifact collection, and the single biface fragment that resembles a Gary point basal fragment, it is believed that Site 41MU55 dates to the Late Archaic or Late Prehistoric I temporal period.

Within the area which includes Montague County, it has been postulated that there was little cultural difference in the two periods (Lynott 1977).

Data obtained from previous investigations into the Late Archaic period of north-central Texas has been summarized in the introductory section of this report and therefore is reviewed only briefly here.

Diagnostic dart point types include: Gary, Dallas, Godley, Ellis, Trinity, Elam, Edgewood, Yarbrough, Marcos, and Ensor. The presence of grinding stones supports the premise of reliance on vegetal resources, assumed to consist in large part of nuts and acorns. Features associated with Late Archaic occupations include: two rock-lined hearths (one 40 x 75 cm and the other 40 x 45 cm) at 41DN85, and a buried hearth located in a backhoe trench at 41DN103 (Skinner and Baird 1985); and an arcuate hearth (some 70 cm in diameter with burned rocks forming two arcs, possibly indicative of two uses), two circular concentrations of burned clay lumps and charcoal identified as hearths, and a tightly flexed skeleton at Site 41CO141, (Prikryl and Yates 1987).

Living areas, between 5 and 10 meters in diameter and consisting of central hearths (larger than those at 41MU55 and 41DN85) surrounded by smaller concentrations of rocks, identified at X41HD24 and X41HD26 in the De Cordova Bend Reservoir (Lake Granbury), on the Brazos River in Hood County (Skinner 1971) may also date to the Late Archaic. However, both of these sites are in a different environmental zone, with subsistence apparently based on mussels and faunal resources rather than on vegetal resources.

Thus, in summary, very little is presently known of the Late Archaic period in north-central Texas.

Research Questions

Obviously the kinds of research questions that can be addressed by data recovery at 41MU55 depend on the kinds of materials preserved at the site, and their degree of integrity within the site. As previously described, the upper part of the prehistoric deposit has been disturbed, probably by plowing, and is mixed with historic artifacts. However, the lower part of the prehistoric deposit, perhaps 15 to 20 cm thick, appears to be intact, at least in the vicinity of Test Units A, F, and G. Intact features are present; however, artifacts recovered to date have been neither temporally nor functionally diagnostic. Although grinding stones are present, indicating the use of vegetal resources, the soil conditions at the site make it unlikely that vegetal remains or faunal remains will be preserved. Further, there is an apparent absence of charcoal with which to radiocarbon date the features. Based on these observations, several potential areas of research are discussed below.

Identification of a Discrete Living Area

Based on the above, the major research potential of the site would appear to lie in the identification of a discrete living area around the features already identified. Such a living area is likely to be recognizable by the presence of additional rock features, and the possible absence of naturally occurring scattered rock fragments. Below-surface features, such as storage or trash pits and possibly even structural features such as post holes, should be identifiable, if present, in the red sandy clay underlying the yellowish

brown sand in which the cultural remains have been found. If the living areas at X41HD24 and X41HD26 can be taken as a guide, any such area at 41MU55 would be expected to be between 5 and 10 meters in diameter.

Within the living area, specialized activity areas (such as lithic chipping areas or vegetal processing areas) may be identifiable by the presence, absence, or density of individual artifact types (such as lithic debitage or grinding stones) or features.

Site Dating

Previous investigations at the site did not yield any good temporal or cultural indicators, thus dating the site should be a major research consideration during data recovery. As hearths have been identified at the site, the most obvious method of site dating would appear to be the radiocarbon dating of charcoal. Unfortunately, charcoal was not observed in the excavated portions of the features, and alternate dating techniques should be considered. Thermoluminescence dating might have been considered appropriate; however, there appear to be problems with the technique. Differing minerals give differing dates, and at present no laboratory in the U.S. is offering thermoluminescence dating services. Another technique, that of remnant archeomagnetic dating, also appears to be inappropriate as the hearths consist of rocks within a sand matrix; such a combination allows for movement of the rocks, thus leading to incorrect dating. However, the technique should be considered if burned clay features are identified. Thus, despite the marvels of modern science, dating of the site may be dependent on the recovery of temporally diagnostic artifacts.

Subsistence

The presence of grinding stones and the absence of projectile points may be interpreted as evidence that subsistence was based on vegetal resources, probably acorns, rather than on hunting faunal resources. If subsistence was based on acorns, it may imply that the site was occupied during the fall. However, the evidence may be distorted by previous collecting of projectile points from the site or because specific activity areas associated with hunting have not yet been identified. Soil conditions at the site, consisting of acidic, friable sands, are not conducive to the preservation of floral or faunal remains. However, attempts should be made to identify such remains, the greatest potential probably being in the form of carbonized remains associated with the hearths, or in possible storage or trash pits.

Site Activities

Lithics recovered from the site consist primarily of debitage, apparently reflecting tool finishing or maintenance activities, which do not provide much insight to the kinds of tasks and activities that were undertaken at the site. Recovery of additional lithics may enable the identification of other site activities.

Burial Practices

Although there is presently no indication of the presence of burials, the possibility always exists that they may be encountered.

Research Methodology

In order to address the research topics discussed above, the following data recovery is proposed. All field work will be confined within the FM 677 right-of-way.

Field Research

Block Excavation. Initial field work will expand the presently excavated area around the features in an attempt to identify additional features and a discrete living area. The exact extent of this block will be determined in the field, based on excavation results. However, the area will be not less than 5 x 5 meters, and no more than 10 x 10 meters. The minimal size is based on the living areas associated with Hearth 3 at the Bluebonnet Site, X41HD26, (Skinner 1971:Figure 14) and Hearth 1 at the Aiken Site, X41HD24, (ibid:Figure 25), while the larger area would encompass that of a possible living area east of the trash dump at the Aiken Site (ibid:Figure 26).

Because of the present lack of diagnostic artifacts and uncertainty surrounding the applicability of scientific dating methods at the site, the excavation will have to be undertaken with the intent of recovering diagnostic artifacts. This will entail the screening of fill through 1/4-inch hardware cloth. Further, in an attempt to recognize specific activity areas, artifact density across the area will need to be recorded. It is recommended, therefore, that excavation be undertaken by hand in 1-meter-square units and 10-cm levels, with artifacts being bagged and labelled by individual unit and level.

When rock features are encountered, they will be cleaned to the point of recognition but left in situ until the entire block has been excavated in order to better define the possible living area. In units where features are not encountered, excavation will continue to the red sandy clay subsoil, the surface of which will be carefully cleaned in an attempt to locate features extending into the subsoil. Profiles of units will be recorded in a manner which will ensure continuous profiles at two-meter or shorter intervals, both north-south and east-west across the block.

Following completion of the block excavation, it will be photographed and drawn as a single unit, and then excavation and recording of individual features will be undertaken. If there is a possibility that features are conducive to archeomagnetic dating, a specialist will be hired to acquire needed samples. Fill from features should be retained for specialist analysis.

Additional Excavation. Additional excavation will consist of a series of 1-x-1-meter hand-excavated units arranged in a grid pattern, which for convenience will be aligned with the highway centerline. Intervals between units will be approximately 10 meters, and placement will be approximately as indicated in Figure 6-1. Thus, an additional approximately 14 units will be excavated, though field results may increase or decrease this number slightly. The units will be excavated in an attempt to locate additional features and areas of high artifact density. If results indicate the presence of other areas with undisturbed features, or exceptionally heavy artifact densities, one or two additional block excavations, each 5 x 5 meters in area, may be hand-excavated in 1-meter units.

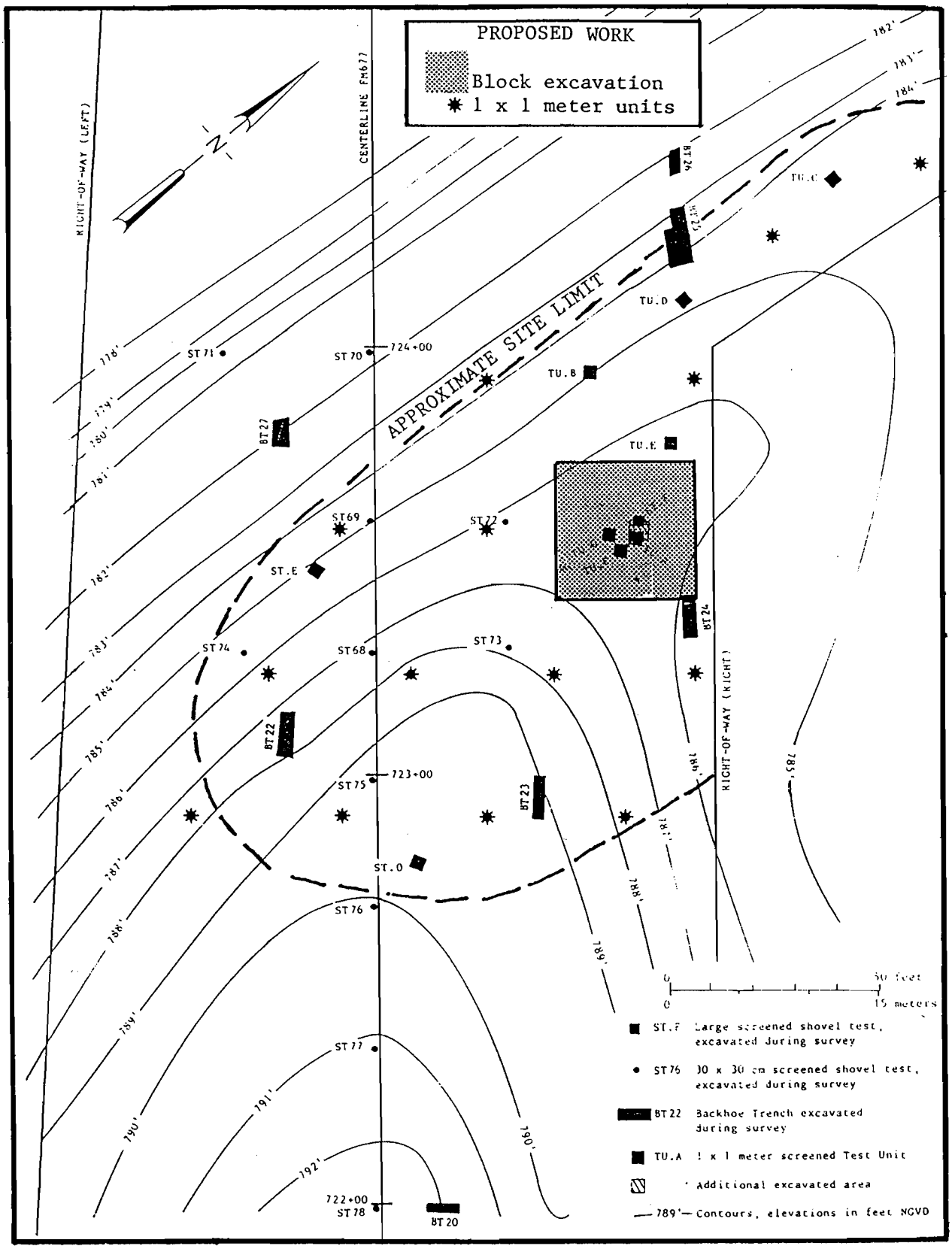

Figure 6-1. Site 41MU55, proposed block excavation and test units.

Following completion of the hand-excavation, remaining surface deposits will be stripped by machine down to the red sandy clay subsoil in a final attempt to identify features. Any features will be plotted and excavated using standard archeological techniques.

Burials. If burials are encountered, work will cease in the immediate area and contact will be made with local Native American leaders prior to any burial excavation.

Analysis

Standard archeological analysis of artifacts and other cultural remains will be undertaken.

Specialized analysis will be undertaken where appropriate. In particular, fill from features will be fine-screened for evidence of floral and faunal remains. Samples will also be subjected to pollen analysis, though it is thought unlikely that pollen contemporary with prehistoric site occupation will be preserved. Additional samples will be submitted for radiocarbon dating, where considered appropriate.

Report

A final report will be prepared which will detail the field methodology, describe features, describe artifacts, and analyze and synthesize the results of the data recovery. The report will adhere to normal archeological report writing standards and be acceptable to the State Historical Preservation Officer (Texas Historical Commission).

SECTION 7 - REFERENCES CITED

REFERENCES CITED

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APPENDIX A

41MU55 - LITHIC DESCRIPTIONS

APPENDIX A

41MU55 - LITHIC DESCRIPTIONS

TEST UNIT	LEVEL	MATERIAL	DESCRIPTION	COLOR	LENGTH (mm)
A	1	Chert	flake, interior	2.5Y 7/3	09
			flake, interior	10YR 6/2	12
			flake, secondary (burned?)	5YR 6/2	21
			chip, interior	10R 5/3	09
		SCS/Qtzite	flake, interior	10YR 8/3	15
			flake, interior	10YR 7/2	10
			chip, interior	5YR 8/1	14
A	2	Chert	flake, interior, thick	N 7	30
			chip, secondary	10R 3/2	15
		SCS/Qtzite	flake, interior	N 4	24
			flake, interior	N 9	13
			flake, interior	N 9	14
A	3	Chert	flake, primary, thick	10YR 5/1	47
			flake, secondary	10R 3/2	35
			flake, secondary	10YR 5/2	23
			flake, interior	10YR 7/1	12
			flake, interior	10YR 6/2	18
			flake, interior	10YR 6/4	15
			flake, interior	10R 5/6	15
			flake, interior	N 9	09
			flake, interior	10R 5/4	12
			chip, interior	10YR 5/3	19
			chip, interior	10YR 5/2	12
			chip, interior	10R 4/4, 6/6	11
			chip, interior	10R 4/2	08
		SCS/Qtzite	flake, interior	10YR 8/3	52
			flake, interior	10YR 5/2	13
			chip, interior	10YR 8/1	27
			chip, interior	7.5YR 7/2	13
			chip, interior	5YR 7/2	13
B	1	Chert	flake, interior	5Y 8/1	08
			flake, interior	10YR 7/2	10
			flake, secondary	10YR 6/1	10
			flake, secondary	10YR 8/1, 8/2	28
			flake, secondary	10YR 7/2	14
			chip, interior	10YR 8/2	08
			chip, interior	5YR 8/3	12
			chip, interior	10YR 7/1,7/2	15
			chip, interior	10YR 5/3	08
			chip, interior	10R 4/6	09
			chip, interior	5R 4/6	17
		SCS/Qtzite	flake, secondary	10YR 8/4	22
			chip, interior	5YR 8/1	19
			chip, interior	N 9	13

TEST UNIT	LEVEL	MATERIAL	DESCRIPTION	COLOR	LENGTH (mm)
B	1	SCS/Qtzite	chip, interior	5YR 8/1	09
			chip, interior	10YR 6/1	12
			chip, interior	10YR 6/1	12
B	2	Chert	flake, interior	5YR 7/2	17
			flake, interior	10YR 8/1	11
			flake, interior	7.5YR 8/2	10
			flake, interior	5YR 6/3	21
			flake, secondary	10YR 6/3	19
			flake, secondary	N 9	13
			chip, interior	10YR 5/1	17
			chip, interior	10YR 7/1	11
			chip, interior	10YR 7/1	09
		SCS/Qtzite	flake, interior	10YR 8/2	44
			flake, interior	10YR 8/2	10
			chip, interior	5YR 7/1	12
			chip, interior	10YR 8/1	15
			chip, interior	2.5YR 6/3	06
B	3	Chert	flake, interior	10YR 7/1, 7/3	20
			flake, interior	10YR 8/3	15
			flake, interior	10YR 8/1	17
			flake, interior	10YR 8/2	14
			flake, secondary	7.5YR 6/3, 10R5/3	29
		SCS/Qtzite	flake, interior	10YR 8/1	17
			flake, interior	10YR 8/1	14
			flake, interior	5YR 6/2	12
			flake, interior	7.5YR 7/2	24
B	4	Chert	flake, interior	10YR 8/2, 10R 4/3	30
			flake, interior	10YR 8/1, 3/1	31
			chip, interior	10YR 7/2	13
		SCS/Qtzite	chip, interior	10YR 8/1	13
			chip, interior	10YR 8/1	11
B	5	Chert	flake, interior	10R 6/3	12
			flake, secondary	10YR 8/1	19
C	1	Chert	flake, interior	N 8	14
			flake, secondary	10R 4/2	28
			chip, interior	10YR 5/3	16
			chip, interior	10YR 7/2	12
		SCS/Qtzite	chip, interior	5YR 8/1	26
			chip, interior	7.5YR 8/2	13
C	2	Chert	flake, interior	10YR 7/2, 6/3	15
			flake, interior	10YR 5/2,	09
			flake, interior	10R 3/1	10
			flake, secondary	10R 6/1	08
			chip, interior	10YR 8/1	15
		SCS/Qtzite	chip, interior	5YR 8/1	14

TEST UNIT	LEVEL	MATERIAL	DESCRIPTION	COLOR	LENGTH (mm)
C	3	Chert	utilized chip, secondary	10YR 6/3	30
			flake, interior	10YR 6/2	09
			flake, interior	10YR 8/1, 7/2	15
			flake, interior	10R 5/2	13
			flake, interior	10YR 5/2	14
			flake, secondary	10R 4/2	23
			flake, secondary, heated	10R 6/3	22
			flake, secondary, heated	10R 6/1, 6/2	11
			chip, interior	5YR 6/1	11
			chip, interior	2.5YR 5/3	10
			chip, secondary, heated	10R 6/3	21
			chip, secondary, heat-spalled	5YR 7/2, 7/2	17
		SCS/Qtzite	flake, interior	10YR 8/1, 6/2	22
			flake, interior	5YR 8/2, 6/2	23
			flake, interior	5YR 8/2	15
			flake, interior	7.5YR 8/2	19
			chip, interior	2.5YR 5/2	19
			chip, interior	5YR 5/2	14
			chip, interior	7.5YR 5/2	15
			chip, interior	7.5YR 5/2	23
			chip, interior	7.5YR 5/2	15
			chip, interior	10YR 8/2	14
			chip, interior	10YR 8/2	13
			chip, interior	N 9	10
C	4	Chert	flake, interior	5YR 6/1	22
			flake, interior	10R 4/2	15
			flake, interior	10YR 6/3	17
			flake, interior	2.5Y 7/2	12
			flake, secondary	10YR 6/4, 6/6	22
			chip, interior	10YR 5/2	10
			chip, interior	10YR 5/1	09
			chip, interior	10YR 5/2	10
		SCS/Qtzite	flake, interior	10YR 7/2	19
			flake, interior	7.5YR 8/3	21
			flake, interior	7.5YR 6/2	10
			chip, interior	5YR 7/1	17
			chip, interior	7.5YR 6/2	09
			chip, interior	7.5YR 6/2	13
			chip, interior	5YR 8/1	13
			chip, interior	5YR 8/1	14
			chip, interior	5YR 8/1	09
			chip, interior	5YR 8/1	13
			chunk, interior	7.5YR 6/2	35
C	5	Chert	flake, interior, heat-treated	10R 8/2	14
		SCS/Qtzite	flake, interior	5YR 8/1	20

TEST UNIT	LEVEL	MATERIAL	DESCRIPTION	COLOR	LENGTH (mm)
D	1	Chert	chip, secondary	5YR 5/2	13
			chip, secondary	10YR 8/1	08
		SCS/Qtzite	biface fragment, medial	5YR 6/2	22
			chip, interior	10YR 8/2	27
			chip, interior	10YR 8/2	25
			chip/chunk, interior	5YR 8/1	30
D	2	Chert	flake, interior	10YR 5/2	25
			flake, interior	10R 4/3	14
			flake, interior	10YR 7/2	11
			flake, interior	10YR 5/2	12
			flake, interior	10YR 8/2	10
			flake, secondary, heat-treated	10R 5/3, 3/3	34
			flake, secondary, heat-treated	10R 5/3, 3/3	30
			flake, secondary, heat-treated	10R 3/4	17
			chip, interior, heat-spalled	10R 5/2	17
		SCS/Qtzite	flake, interior	7.5YR 6/2	14
D	3	Chert	flake, interior	2.5Y 6/3	12
			flake, interior	10YR 7/2	10
			chip, interior, heat-treated	5YR 8/1, 7/2	16
			chip, interior, heat-treated	10YR 8/2,10 R4/3	12
		SCS/Qtzite	flake, interior	5YR 7/2	25
			flake, interior	5YR 7/2	26
			flake, interior	7.5YR 8/2	16
			flake, interior	10YR 8/2	20
			chip, interior	7.5YR 7/2	24
D	4	Chert	flake, interior	10YR 7/1, 7/2	13
			flake, interior	10YR 7/3, 5/2	09
			flake, interior	10YR 7/4	10
			flake, interior	10YR 7/1	13
		SCS/Qtzite	flake, interior	10YR 8/2	23
D	5	SCS/Qtzite	chip, interior	10YR 6/1	27
E	1	Chert	flake, interior	10YR 7/1, 5/2	16
			chip, interior	10YR 7/1	11
		SCS/Qtzite	flake, interior	5YR 7/2	11
			chip, interior	7.5YR 8/2	11
E	2	Chert	utilized flake, heat-treated	N 9, 5YR 8/2	15
			flake, interior, heat-treated	10YR 8/1, 7/1	16
			chip, interior, heat-treated	5YR 7/1	15
			chip, interior	10YR 6/3	13
			chip, interior	10YR 6/2	19
			chip, interior, looks burned	10YR 7/1, 6/1	14
			thermal chunk	10YR 8/1-10R 3/3	20
			thermal chunk	10R 6/3-10R 5/1	20

TEST UNIT	LEVEL	MATERIAL	DSECRIPTION	COLOR	LENGTH (mm)
E	2	SCS/Qtzite	flake, interior	5YR 8/1	27
			flake, interior	5YR 8/1	23
			chip, interior	5YR 8/1	23
			chip, interior	5YR 8/1	21
E	3	Chert	flake, interior, heat-treated	7.5YR 5/3-10R 3/6	11
			flake, interior	10YR 8/1	13
			flake, interior	10YR 8/3	13
			chip, interior	10YR 7/2	09
			chip, interior	10YR 6/2-10R 3/3	14
		SCS/Qtzite	flake, interior	10YR 8/1	11
			flake, interior	10YR 8/1	22
			chip, interior	10YR 8/1	16
			chip, interior	10YR 8/1	19
			chip, interior	10YR 8/1	18
			chip, interior	10YR 8/1	10
E	4	Chert	flake, interior	10YR 5/2	10
F	1	Chert	flake, interior	10YR 6/4	21
			flake, interior	5YR 8/3-2.5YR 6/4	18
			flake, secondary	10YR 6/3, 6/4	20
			chip, interior	N 9	09
			chip, interior	10YR 6/2	15
			chip, interior, heat-treated	10R 3/4	16
		SCS/Qtzite	chip, interior	5YR 8/1	21
			chip, interior	5YR 8/1	15
			chip, interior	5YR 8/1	14
			chip, interior	5YR 8/1	13
			chip, interior	2.5YR 6/4	13
			chip, interior	5YR 7/3	17
			chip, interior	10YR 5/3	15
			chip, interior	10YR 5/3-10YR 8/1	17
F	2	Chert	flake, interior	10YR 8/1-10YR 5/2	20
			flake, secondary	10YR 5/3-10YR 8/1	08
			flake, secondary	10YR 8/1-10YR 6/2	11
			chip, interior	10YR 8/1-10YR 7/1	16
			chip, interior	10YR 8/1	10
			chip, interior	10YR 6/1	19
			chip, interior	2.5YR 5/4, 4/4	22
		SCS/Qtzite	flake, interior	5YR 8/1	21
			chip, interior	5YR 8/1	22
			chip, interior	5YR 8/1	16
			chip, interior	5YR 8/1	09
			chip, interior	5YR 8/1	07
			chip, interior	5YR 7/1	08
			chip, interior	10YR 7/2	16
			chip, interior	10YR 6/6	20

TEST UNIT	LEVEL	MATERIAL	DESCRIPTION	COLOR	LENGTH (mm)
F	3	Chert	flake, interior, heat-treated	10R 4/2	14
			flake, interior	10YR 8/3	10
			flake, secondary, heat-treated	10R 4/3	22
			flake, secondary, heat-treated	10R 4/3	22
			flake, secondary	10YR 7/2	10
			chip, interior, heat-treated	5YR 6/2	08
			chip, interior	10YR 7/3	19
			chip, interior, heat-treated	10R 8/2	16
			chip, interior	10YR 8/1, 8/2	19
			chip, secondary	10YR 6/2	16
		SCS/Qtzite	flake, interior	5YR 8/1	13
			flake, interior	5YR 8/1	11
			flake, interior	5YR 8/1	12
			chip, interior	5YR 8/1	19
			chip, interior	5YR 8/1	19
			chip, interior	5YR 8/1	14
			chip, interior	5YR 8/1	08
			chip, interior	10YR 6/2	14
			chip/chunk, interior	10YR 6/1, 10R 4/4	29
G	1	Chert	flake, interior	10YR 8/1, 10R 4/3	13
		SCS/Qtzite	flake, interior	10R 8/2	19
			flake, interior	5YR 6/2	17
			flake, interior	5YR 8/1	19
			chip, interior	5YR 8/1	10
G	2	Chert	flake, secondary, heat-treated	10YR 8/1	18
		SCS/Qtzite	flake, interior	5YR 8/1	17
			flake, interior	5YR 8/1	15
			flake, interior	5YR 8/1	18
			flake, interior	5YR 7/1	17
			flake, interior	5YR 6/2	25
			chip, interior	5YR 8/1	20
			chip, interior	5YR 7/1	12
G	3	Chert	flake, interior	10R 5/4	18
			flake, interior	5YR 8/2	13
			flake, interior, heat-treated	5YR 7/1	14
			flake, interior	5YR 5/4	21
			flake, interior	10YR 5/1	16
			flake, interior	N 9	11
			flake, secondary	10YR 5/1, 8/1	30
			flake, secondary	10YR 7/4, 6/4	21
			flake, secondary, burned	2.5R 5/2	12
			chip, interior	10YR 6/6	17
			chip, interior	10YR 7/2	10
			chip, interior	10YR 8/1	11
			chip, secondary	10YR 8/1	13
			chip, secondary	10R 5/4	13

TEST UNIT	LEVEL	MATERIAL	DESCRIPTION	COLOR	LENGTH (mm)
G	3	SCS/Qtzite	flake, interior	10YR 6/2	11
			flake, interior	10YR 6/3	13
			flake, interior	10YR 6/2	15
			flake, interior	10YR 8/3	19
			flake, interior	7.5YR 8/2	24
			flake, interior	7.5YR 8/2	18
			flake, interior	5YR 8/1, 10R 3/6	09
			flake, interior	5YR 8/1, 10R 3/6	16
			chip, interior	7.5YR 8/2	19
			chip, interior	7.5YR 8/2	12
G	4	Chert	flake, interior, heat-treated	10YR 8/1	19
			flake, interior, heat-treated	10YR 7/4-10R 4/4	17
			flake, interior	10YR 8/1	10
			flake, secondary,heat-treated	10YR 6/3-10R 5/3	24
			flake, secondary	10YR 7/2	19
			chip, interior	10YR 8/1	08
			chip, interior	10YR 7/2	08
			thermal shatter	10YR 8/1, 10R 4/1	19
		SCS/Qtzite	flake, interior	10YR 5/1	18
			flake, interior	5YR 8/1	23
			flake, secondary	10YR 6/2	27
G	5	Chert	flake, interior	5YR 8/2	17
			chip, interior	10YR 8/1	11
			chip, interior	10YR 8/3	10
		SCS/Qtzite	flake, interior	10YR 8/2	15
			chip, interior	10YR 8/1	09
MISC AREA		Chert	flake, interior	10YR 8/1	36
			flake, interior	N 9	17
			flake, interior	10YR 6/3	16
			flake, interior	10YR 6/4	16
			flake, interior	10YR 6/3	12
			flake, interior	10YR 8/1, 10R 4/3	10
			flake/chunk, secondary	10R 2.5/2	30
			chip, interior	10YR 5/3	16
			chip, interior	10YR 8/1	09
			chip, interior	10YR 6/2	12
			chip, interior	10R 4/4	15
			thermal shatter	10R 6/1-4/4	15
		SCS/Qtzite	biface fragment	10YR 8/3	17
			flake, interior	5YR 8/1	09
			flake, interior	5YR 8/1	08
			flake, interior	5YR 8/1	11
			flake, interior	10YR 8/3	20
			chip, interior	5YR 8/1	21
			chip, interior	5YR 8/1	16
			chip, interior	5YR 8/1	33
			chip, interior	5YR 8/1	18
			chip, interior	5YR 8/1	14
			chip, interior	7.5YR 6/2	19

APPENDIX B

41MU57 - LITHIC DESCRIPTIONS

APPENDIX B

41MU57 - LITHIC DESCRIPTIONS

TEST UNIT	LEVEL	MATERIAL	DESCRIPTION	COLOR	LENGTH (mm)
A	1	SCS/Qtzite	flake, interior	5YR 7/2	17
B	1	Chert	flake, interior	5YR 4/3	08
			flake, interior	5YR 6/3	15
			flake, interior	10R 5/6	11
		SCS/Qtzite	chip, interior	5YR 8/1	11
B	2	Chert	flake, secondary	7.5YR 5/3	42
			chip, interior	N 9	07
C	1	Chert	flake, secondary	10YR 5/3,10R 3/4	42
		SCS/Qtzite	flake, interior	5YR 7/2	18
D	2	Chert	chip, interior	10YR 6/2	09
		SCS/Qtzite	flake, interior	5YR 8/1	12
			chip, interior	10YR 7/1, 8/1	14
E	1	Chert	flake, interior	2.5YR 5/3	10
			flake, interior	5YR 5/3	14
			flake, interior	10R 4/3	12
			flake, interior	10YR 8/3	08
			flake, secondary	2.5YR 3/2	10
			flake, secondary	5YR 5/1	15
			chip, interior	10YR 8/2	08
			chip, interior	10YR 5/2	12
			chip, interior	10YR 5/1	13
		SCS/Qtzite	flake, interior	5YR 6/2	08
			chip, interior	5YR 8/2	08
			chip, interior	5YR 8/1	06
E	2	Chert	flake, interior	5YR 5/2	23
			flake, interior	5YR 5/2	12
			chip, interior	10YR 6/1	09
			chip, interior	10YR 8/2	06
		SCS/Qtzite	chip, interior	10R 8/2	09
			chip, interior	10R 8/2	08
			chip, interior	10R 8/2	09
			chip, interior	10R 8/2	09
			chip, interior	7.5YR 6/2	10
E	3	SCS/Qtzite	chip, interior	10R 8/2	17