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ABSTRACT

The State Department of Highways and Public Transportation (SDHPT) conducted archaeological testing on Site 41DW260 in DeWitt County during January 1988. The site is located along FM 3402 about 2.5 miles west of Cuero, Texas and extends from the north side of the highway onto private property. Testing has shown that the area within the right-of-way is a 20-25 cm deep prehistoric campsite where the primary activities were the reduction of fist-sized flint cobbles into usable flakes and the collection of freshwater mussels as a food resource. A total of 16 one meter squares were excavated into the narrow right-of-way and a large quantity of lithic debitage and shell debris was recovered. No diagnostic artifacts or features were encountered. Further research within the right-of-way is not proposed due to the disturbed nature of the area and the low potential for locating intact features or temporally sensitive artifacts. About 7% of the site within the right-of-way was excavated and sufficient data gathered to discuss some of the lithic strategies. The portion of Site 41DW260 within the right-of-way does not appear worthy of nomination as a State Archaeological Landmark. The area outside the project limits could not be examined but is less disturbed and located on more desirable landforms and may merit inclusion as a State Archaeological Landmark.

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INTRODUCTION

The State Department of Highways and Public Transportation (SDHPT) became involved with Site 41DW260 through plans by the Department to widen FM 3402 from Cuero to SH 87. Project limits were set from west of the Guadalupe River to the junction with SH 87. A routine archaeological survey was performed in May 1987 with negative results. The project was endorsed by the Texas Antiquities Committee, a construction contract was let in September 1987, and the project was cleared and grubbed in December 1987. Clearing and grubbing in this case involved the use of a road grader to remove the upper 10 cm of soil and to windrow the loosened material along the edges of the new right-of-way. The new right-of-way for this project is 6.5 meters wide along each side of the highway.

The grading activities exposed two previously unknown archaeological sites, 41DW259 and 41DW260 which were located by Scooter Cheatam. Cheatam informed Dan Prikryl of the Texas Historical Commission on December 28, 1987. Prikryl informed the SDHPT Environmental Section of the discovery and the sites were relocated and shovel tested by the writer on December 29. The writer obtained site survey numbers for the sites and recommended testing of 41DW260 due to the presence of subsurface cultural materials.

Initial testing was conducted by the writer with field assistance from four employees of the District 13 Cuero Maintenance Office from January 5-11, 1988 under adverse weather conditions and in very wet clay soils which made screening difficult. Testing was conducted through the Memorandum of Understanding between the Department and the Texas Antiquities Committee. During this phase

six one meter squares were excavated to determine the horizontal and vertical extent of the site.

Results of this fieldwork indicated that the eastern 20 meters of the site contained most of the cultural refuse consisting of large numbers of flakes and blocky shatter and mussel shell fragments. No temporally sensitive diagnostic artifacts or features were recovered. Additional fieldwork was needed but was postponed until coordination was initiated with the Texas Antiquities Committee.

The site was visited on January 18, 1988 by the writer and Mark Denton of the TAC and plans were made to expand the two most productive units into two meter squares and to excavate a third two meter square between them. It was hoped that these excavations would provide more information on the age of the site and the activities performed there.

A second testing stage was conducted between January 25 and January 29 with the same personnel. Fortunately, the soils had dried considerably during the hiatus and the weather was much kinder. Excavations were conducted in the areas discussed with Denton but no features or temporally sensitive artifacts were recovered. The following report provides a synopsis of the site description, archaeological background, testing techniques, artifact descriptions, and an analysis and conclusion.

ARCHAEOLOGICAL BACKGROUND

DeWitt County is a rural county located along the Texas Coastal Plain. There has been little "progress" involving large-scale federally funded projects and this has resulted in limited archaeological research within the county. The major archaeological projects have been the survey of Cuero I reservoir (Fox, et al 1974) and a survey of Ecleto Creek (Crawford 1971). Other research has included the work of Birmingham (1980), Briggs (1971), Hester (1975), McKinney (1981), Patterson (1936), and Schmedlin (1981).

Various authors have placed the county into differing archaeological regions. Hester (1976) places the county along the north boundary of the southern Texas archaeological region. Briggs (1971) included it in his study of the Texas coastal lowlands. Suhm and Krieger (1954) include it within their Central Texas region. Given the limited database for the county, the most prudent choice may be to describe the prehistoric cultures as a blend of all three regions.

The earliest cultural period recognized in DeWitt County is the Paleo-Indian period which is distinguished by fluted and/or lanceolate projectile point types frequently exhibiting ground lateral edges. Clovis, Folsom, Plainview, Angostura, and Scottsbluff types are the most common diagnostic artifacts of the Paleo-Indian period and are found throughout the state. The tenative Wilson type is a very early corner-notched dart point with ground edges found at the Wilson-Leonard Site in Williamson County. This type was found in association with and earlier than Plainview dart points at Wilson-Leonard and

in similar circumstances in Victoria County by E.H. Schmedlin. The Paleo-Indian period in DeWitt County resembles that of Coastal, South, and Central Texas.

The Archaic period follows the Paleo-Indian period and represents a long tradition of nomadic hunting and gathering technologies. This period ranges in time from 8,000 years B.P. to the introduction of the bow and arrow, around 1300 years B.P. The earlier date is rather arbitrary and is based largely on the extinction of several megafaunal species. The terminal date coincides with the introduction of the bow and arrow but does not indicate a change in subsistence strategies.

The Archaic period is best known from Central Texas where a plethora of stemmed dart point types occur in stratigraphic sequences. Both the South Texas and Coastal archaic is dominated by triangular dart point types with an occasional Central Texas stemmed type present. The Central Texas sequence is better known due to more research in the area and the number of temporally limited types. Weir (1976) and Prewitt (1981) provide phase designators for the Central Texas Archaic.

The Early Archaic period in DeWitt and adjacent counties shows a similarity in projectile point types to Central Texas. The most obvious type found in both areas is the Bell dart point. Bell points and similar long barbed dart points, such as Andice and Calf Creek, occur over the eastern 1/2 of Texas and Oklahoma and date around 6,000 years B.P. Other early Central Texas types, Uvalde and Martindale, are also expected in the DeWitt County area. At least some affiliation with Central Texas appears during the Early Archaic period.

During the Middle Archaic period DeWitt County seems more closely related to Coastal and South Texas. The Central Texas diagnostics, Pedernales and Bulverde, are less common than triangular dart point types. Guadalupe tools, another South Texas trademark, are also present.

Much of the Late Archaic period in DeWitt County is represented by triangular dart points with an occasional Central Texas type. Toward the end of this period, the Ensor type becomes fairly common as it does over much of the state.

The Late Prehistoric or Neo-American period represents nomadic hunting and gathering groups using the bow and arrow and eventually ceramics. Arrow points appear before ceramics in Central, Coastal, Southern, and Northeastern Texas and the same sequence might be expected for DeWitt County. Common arrowpoint types include Scallorn and Perdiz which occur throughout most of the state during this timeframe. Ceramics from the county include both Leon Plain from Central Texas and painted sherds from the coastal regions.

SITE DESCRIPTION

Archaeological Site 41DW260 is a prehistoric campsite located along the north side of FM 3402 about 2.5 miles west of Cuero, Texas and about 0.45 mile west of the Guadalupe River. The site is situated along a second terrace system of the river and is about 150 meters west of Lost Creek (Figure 1). Lost Creek is a small but permanent tributary of the Guadalupe River and probably served as the water source for the site inhabitants.

The landform housing Site 41DW260 represents the first major increase in elevation from the Guadalupe River floodplain. The area between the site and the river is frequently inundated by major rises in the Guadalupe River and the road in this area is often impassable due to high water. Figure 1 indicates a slough northeast of the site which allows excess water to traverse down Lost Creek and inundate the floodplain east of the site. The site itself is located about 20 feet above Lost Creek and according to local sources does not flood during periods of high water.

The second terrace system gradually rises to the west until a hill top is reached about 0.5 mile west of the site. This hilltop houses 41DW259, a shallow, prehistoric, lithic procurement site located in an area of abundant fist-sized flint cobbles. Lesser amounts of flint can be found between 41DW259 and 41DW260 and these were apparently used as the primary lithic resource on both sites.

The modern vegetation around 41DW260 shows the results of agricultural and ranching activities. The area immediately north of the site locale is planted

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in improved pasture grasses while the area southeast of the site is a pecan orchard. The area south of the site is in a more pristine condition and consists of an overgrazed prairie with scattered live oaks, elms, and hackberry. A gully near the right-of-way in this area contains numerous native shrubs and greenbriars growing along its banks. Most of the floodplain has been cleared of the expected galleria forest and is in native grasses.

The USDA Soil Survey of DeWitt County (Miller 1978) indicates that the soil in the site area, Miguel fine sandy loam, would support a tall to mid grass prairie with widely scattered trees or motts of oak, elm, or hackberry. This climax plant community may more accurately reflect the aboriginal setting. The soil description for the Miguel Series reflects the observed soils. The A soil is listed as 0-6 inches thick, fine sandy loam, dark brown moist; weak fine granular structure; very hard, friable; slightly acid;abrupt smooth boundary. The B21t is 6-15 inches thick, brown clay with distinct red and yellowish brown mottles; strong medium prismatic structure; extremely hard, firm, plastic, and sticky; clear smooth boundary. The B22t zone is 15 to 30 inches thick, brownish yellow clay with few fine distinct very pale brown and yellowish red mottles; moderate medium and fine angular blocky structure; very hard, very firm, plastic, and sticky; neutral; gradual smooth boundary (Miller 1978 21-22).

Test excavations encountered the B21t zone only in the westernmost test unit, Test 5. It was absent in the other units and is presumed to have eroded away. Both B soil zones were found to be culturally sterile while the A soil zone contained much cultural debitage. The base of the B22t zone was not reached

as it became apparent that the zone was culturally sterile and did not merit excavating.

Climatic data from Miller 1978 indicates that DeWitt County is humid subtropical with 270 frost free days annually. Freezing temperatures can be expected about 25 days annually. Record temperatures include a 2 degree record low in 1949 and a record high of 110 degrees in 1954. Precipitation averages 33.17 inches annually with a May and September maximum and a March minimum. Precipitation extremes range from 12.83 inches in 1917 to 59.13 inches in 1914. Rainfall may vary greatly from year to year. Massive rainfalls can also occur in very short periods as the 10.90 inches for a 24 hour period in September 1967 indicates.

TESTING PROCEDURES

Archaeological testing of Site 41DW260 began with a thorough surface survey within the 6.5 meter wide right-of-way to locate concentrations of exposed materials and to determine the horizontal extent of the site. Since the site had been recently graded by the contractor all vegetation was removed and visibility was excellent. Prior to discovery of the site, about 10 cm of soil had been bladed from the site and windrowed along the right-of-way fences. A visual examination of private property from the right-of-way showed almost no prehistoric cultural debitage and it is believed that cultural materials there are buried under postoccupational deposits. The blading activity may have exposed the site without excessive damage to its context.

The surface examination indicated that flint flakes and burned flint cobbles began on the eastern edge of the terrace and extended westward about 75 meters to a cattle guard. Most of the cultural debitage was located near the easternmost 30 meters of the terrace. Flakes and mussel shell fragments were located at the eastern edge eroding onto a basal yellow clay. No tools or features were located and plans were made to excavate a series of one meter squares along the long axis of the site (east to west) to determine both the horizontal and vertical extent and to examine the significance of the subsurface deposits.

One meter square Test Units were oriented magnetic north and located along the bladed strip in areas where the windrow would not have to be moved and north of the buried telephone cable. Test Units were numbered in the order in which they were dug. Vertical control was maintained in 10 cm deep levels and all

soil removed was forced through 1/4 inch mesh hardware cloth. All cultural material recovered were bagged by test unit and level coordinates and taken to the Department's archaeology lab for washing, cataloging, and processing.

Test Unit 1 was the first unit excavated and was located near the western edge of concentrated surface materials (Fig. 2). Three 10 cm deep levels were dug. Levels 1 and 2 were dug into a dark gray sandy clay and contained 99 and 46 flakes respectively. Level 3 encountered a basal yellow clay with caliche pebbles and was culturally sterile (Fig. 3). No mussel shell fragments were found in any level.

Test Unit 2 was placed near the eastern edge of the terrace and was situated 6 meters west of the exposed yellow clay zone (Fig. 2). Levels 1 and 2 were excavated into a dark gray sandy clay while level 3 was dug into the yellow clay with caliche gravels (Fig. 3). Level 1 contained 625 flakes, level 2 contained 78, and level 3 produced only 2 flakes. Many shell fragments were recovered from levels 1 and 2 also.

Test Unit 3 was located at the eastern edge of the terrace (Fig. 2) on the yellow clay soil and was slightly east of the exposed shell and flake concentration. This unit was dug to determine if the yellowish clay was culturally sterile. The excavation of 1 level proved that the yellow clay did not contain cultural materials and that the surface debris was eroding onto the yellowish clay zone.

Test Unit 4 was located 7 meters east of Test Unit 1 (Fig. 2) and was excavated to determine if the frequent shell in Test Unit 2 extended into this area

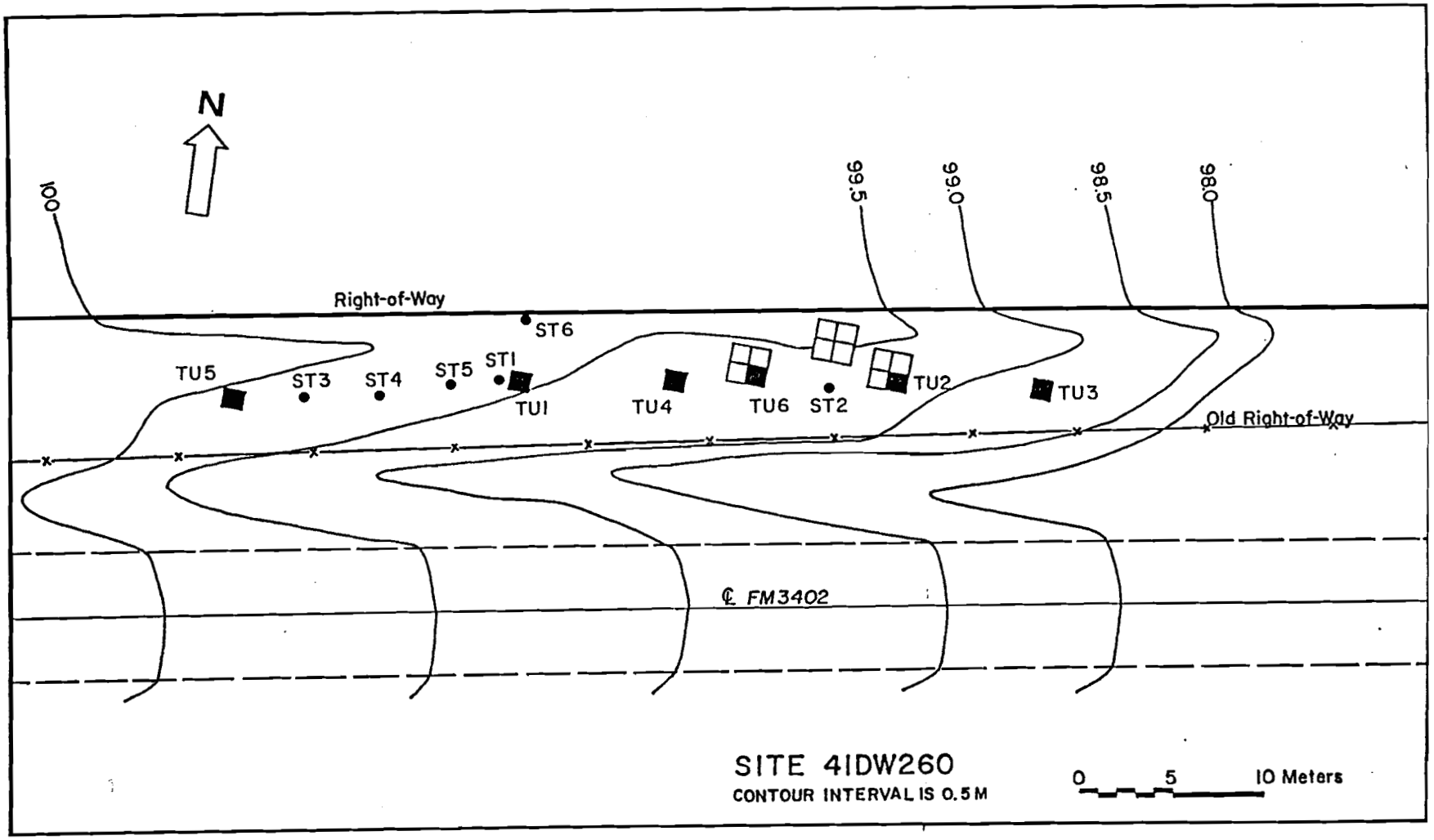

FIGURE 2. Grid map of 41DW260 showing excavation units.

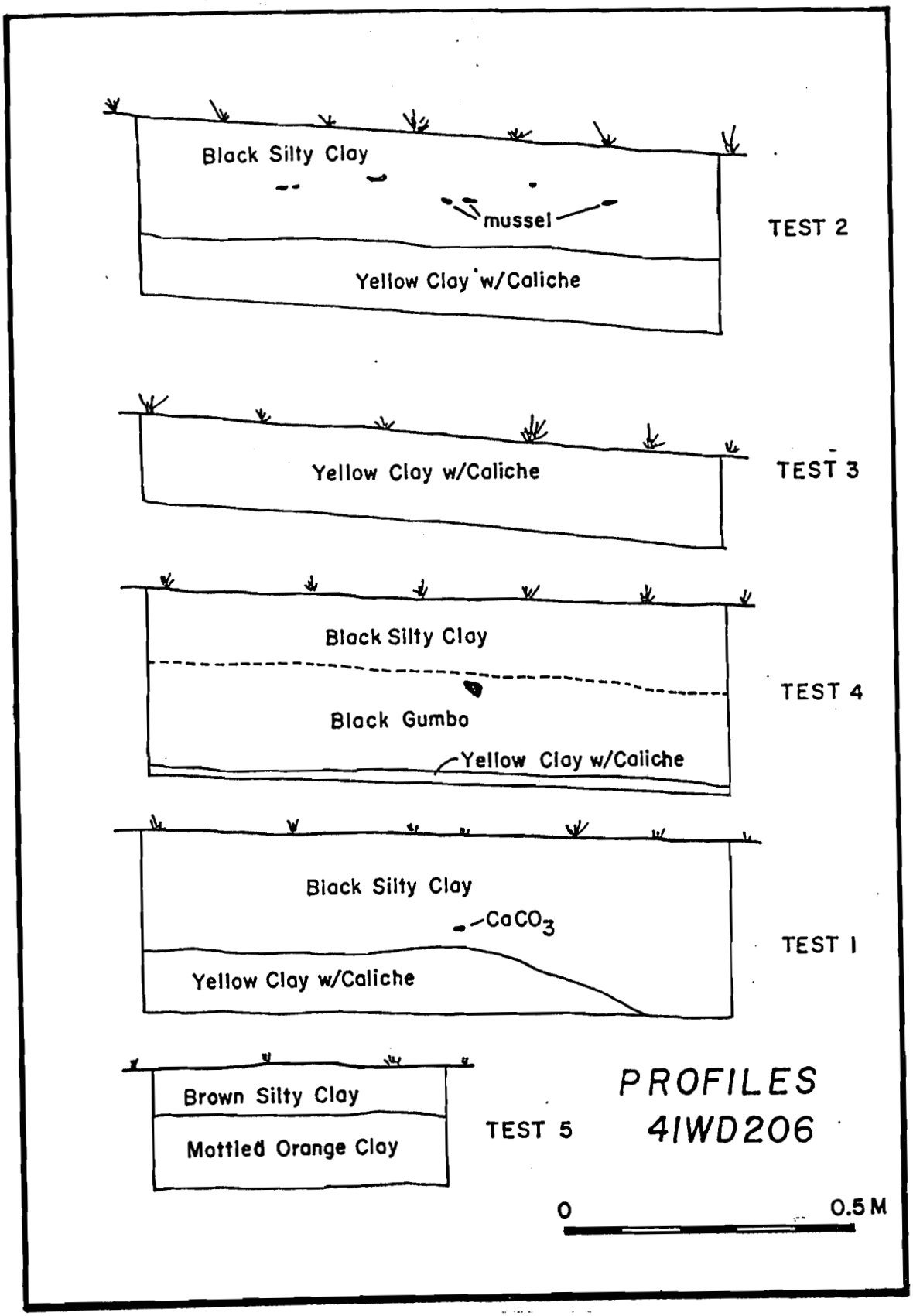

FIGURE 3. Selected soil profiles from 41DW260.

of the site. Only 2 mussel shell fragments were recovered from the 3 levels in this unit. The basal yellow clay appeared at 29 cm below the surface (Fig. 3). Level 1 contained 23 flakes, level 2 had 72, and level 3 yielded 127.

Test Unit 5 was located 50 meters west of Test Unit 4 at the western edge of the site (Fig. 2). Level 1 contained 5 cm of brown sandy clay overlying a reddish gummy clay. This material proved virtually impossible to screen due to it saturated nature and the unit was reduced to 1 meter x 0.5 meters. Level 1 contained 23 flakes while level 2 in the reddish gumbo was culturally sterile.

Test Unit 6, the final unit of the preliminary testing, was located 4 meters east of Test Unit 4 and 7 meters west of Test Unit 2 (Fig. 2). Like Test Unit 4, this unit was dug to locate the western limits of the mussel shell concentration observed in Test Unit 2. Excavations of the 3 levels in this unit indicated a very high flake and shell count similar to Test Unit 2. Basal yellow clays were encountered at 26 cm below the present surface. Level 1 yielded 584 flakes, level 2 contained 346, and level 3 had 82.

At this stage, testing was temporarily halted to allow the soils to dry and to coordinate further research with the Texas Antiquities Committee. A large number of flakes and mussel shell fragments had been found in cultural deposits extending about 25 cm below the present surface and further work was necessary to evaluate the site. No temporally sensitive artifacts or features were recovered.

Before coordinating additional research on the site, a week was spent processing the recovered materials and tabulating the flakes and mussel shell totals. The results of this tabulation are shown below in Tables 1-2. Test Units are listed from west to east to provide a more useful preliminary analysis of the site limits.

Table 1: Recovered flake debitage from Tests 1-6.

Level	Test 5	Test 1	Test 4	Test 6	Test 2	Test 3
1	23	99	23	584	625	1
2	0	46	72	346	78	
3		0	127	82	2	

Table 2: Recovered mussel shell from Tests 1-6 in grams

Level	Test 5	Test 1	Test 4	Test 6	Test 2	Test 3
1	0	0	0	0	222.0	5.0
2	0	0	0	27.5	43.5	
3		0	1.5	10.5	1.5	

Tables 1 and 2 readily indicate that the densest occupational area centers around Test Units 2 and 6. During an on-site meeting with Mark Denton of the Texas Antiquities Committee it was agreed that Test Units 2 and 6 should be expanded into 2 meter squares and that an additional 2 meter square would be excavated between these units and under the windrow to determine more accurately how much soil had been removed by the grading activities.

Test Unit 6 was expanded into a 2 meter unit through the excavation of Test Units 7, 8, and 9 (Fig. 2). These were grouped so that Test Unit 6 formed the southeastern quad, Test Unit 7 was the northeastern quad, Test Unit 8 the northwestern, and Test Unit 9 became the southwestern quarter of this block. Each Test Unit was excavated in three 10 cm thick levels. Recovery rates were lower than in Test Unit 6 and this is thought to be caused by drier soils which allowed smaller flakes to fall through the screen. When Test Unit 6 was excavated, the clays were very wet and rapidly clogged the screen allowing recovery of many small flakes which would normally fall through a dry screen.

Test Unit 2 was expanded by the excavation of Test Units 10, 11, and 12 around Test Unit 2 (Fig. 2). In this block, Test Unit 2 was the southeastern corner, Test Unit 10 was the northeastern, Test Unit 11 was the northwestern, and Test Unit 12 became the southwestern quad. Two 10 cm levels were removed from Units 10, 11, and 12 as the sterile yellow clay began to appear at 20 cm. Once again, the newer test units produced less debitage than Test Unit 2 and differing soil conditions are thought to be the cause.

The third 2 meter square block was composed of Test Units 13, 14, 15, and 16 (Fig. 2). This block was arranged with Test Unit 13 as the southwest quad, Test Unit 14 as the southeast, Test Unit 15 as the northwest, and Test Unit 16 as the northeast quarter. Four 10 cm deep levels were removed from each test unit with basal clays being encountered at 30-32 cm.

Testing was halted at this point. Sixteen one meter squares had been dug through the cultural deposits and no diagnostic artifacts or features had been located. About 10% of the densest occupational area in the right-of-way had

been tested but produced only an occasional chipped stone tool or modified flake. A preliminary lithic analysis suggested that the site was used primarily as a lithic procurement site.

ARTIFACTS RECOVERED

HISTORIC ARTIFACTS

Historic artifacts recovered from the excavations include 13 small fragments of amber glass and 5 thin rusty metal scraps are thought to be from tin cans. The glass is presumed to be from beer bottles. These represent materials commonly found along highway rights-of-way and were limited to level 1. Glass fragments were found in Test Units 3, 6, 7, 10, 11, 13, 14, and 15. Metal fragments were found in Test Units 4, 7, and 8.

THIN BIFACE FRAGMENTS

Three fragments of thin, well made bifaces were recovered. This grouping consists of 2 midsections and a distal tip (Fig. 4:A-C). Specimen A has only 1 shaped edge and a series of hinge fractures along a surface where an area of cortex-like material could not be removed. This item is unfinished although it was thinned to 7 mm. It was found in level 2 of Test Unit 1. Specimen B, another midsection, is from level 1 of Test Unit 11 and is from a thin, well made completed tool. This artifact is only 4 mm thick. Specimen C is a heat treated distal tip. This tool appears to have been broken in manufacture from an end shock fracture caused by striking the basal area with too much force. It is 4 mm thick and was found in level 1 of Test Unit 14.

THICK BIFACE FRAGMENTS

Eight fragments of thick bifaces were also recovered. Only one of these (Fig. 4:D) is shaped. This item is a 9 mm thick distal fragment from level 1 of Test Unit 16 and was broken by end shock during manufacture. This grouping

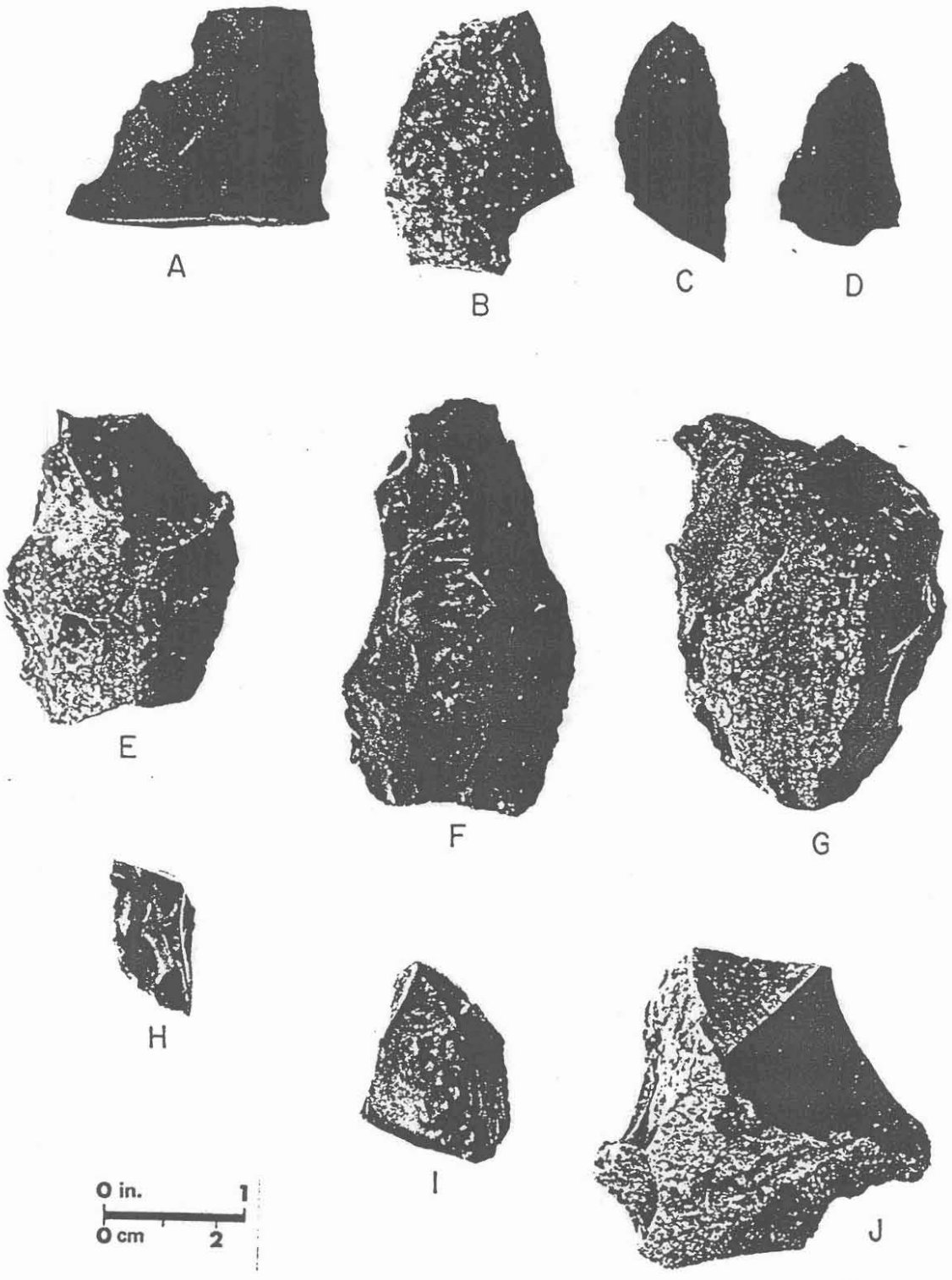

FIGURE 4. A-C, thin bifaces; D-F, thick bifaces; G-H, scrapers; I-J core fragments.

also includes 2 complete but unshaped specimens (Fig. 4:E-F) from level 1 of Test Unit 11 and level 1 of Test Unit 13. The lack of shaping and areas of cortex would suggest that both specimens were abandoned early in the lithic reduction sequence. Specimen E is 14 mm thick while F is 15 mm thick. The remaining 5 specimens are unshaped edge fragments. They were recovered in level 2 of Test Unit 6, level 2 of Test Unit 12, level 1 of Test Unit 2, level 1 of Test Unit 2, and level 3 of Test Unit 15.

SCRAPERS

One complete scraper and one scraper fragment were also found at 41DW260. The complete item (Fig. 4:G) is made from a 19 mm thick split flint cobble with minimal modification to the ventral surface and no modification to the bulb of percussion. Scraping edges have been flaked into both edges while the distal end has not been altered. The beak appears to have been prepared by flaking the ventral surface. It was found in level 1 of Test Unit 2. The broken specimen (Fig. 4:H) is from level 1 of Test Unit 13 and is a portion of a well made thin (9mm) tool. Overall tool shape cannot be determined but it appears that this specimen may have been from a side and end scraper.

CORES AND CORE FRAGMENTS

Five cores and 3 large flakes from cores constitute this grouping. All specimens are local flint. The core fragments are blocky flakes but are included with cores since they provide some idea of the reduction technologies. Fig. 4:I-J illustrates 2 of the three core fragments. Both specimens indicate flake scars struck from one margin towards the end of the stone. Four of the 5 cores (Fig. 5:A-D) reveal the same technology. The flake scars

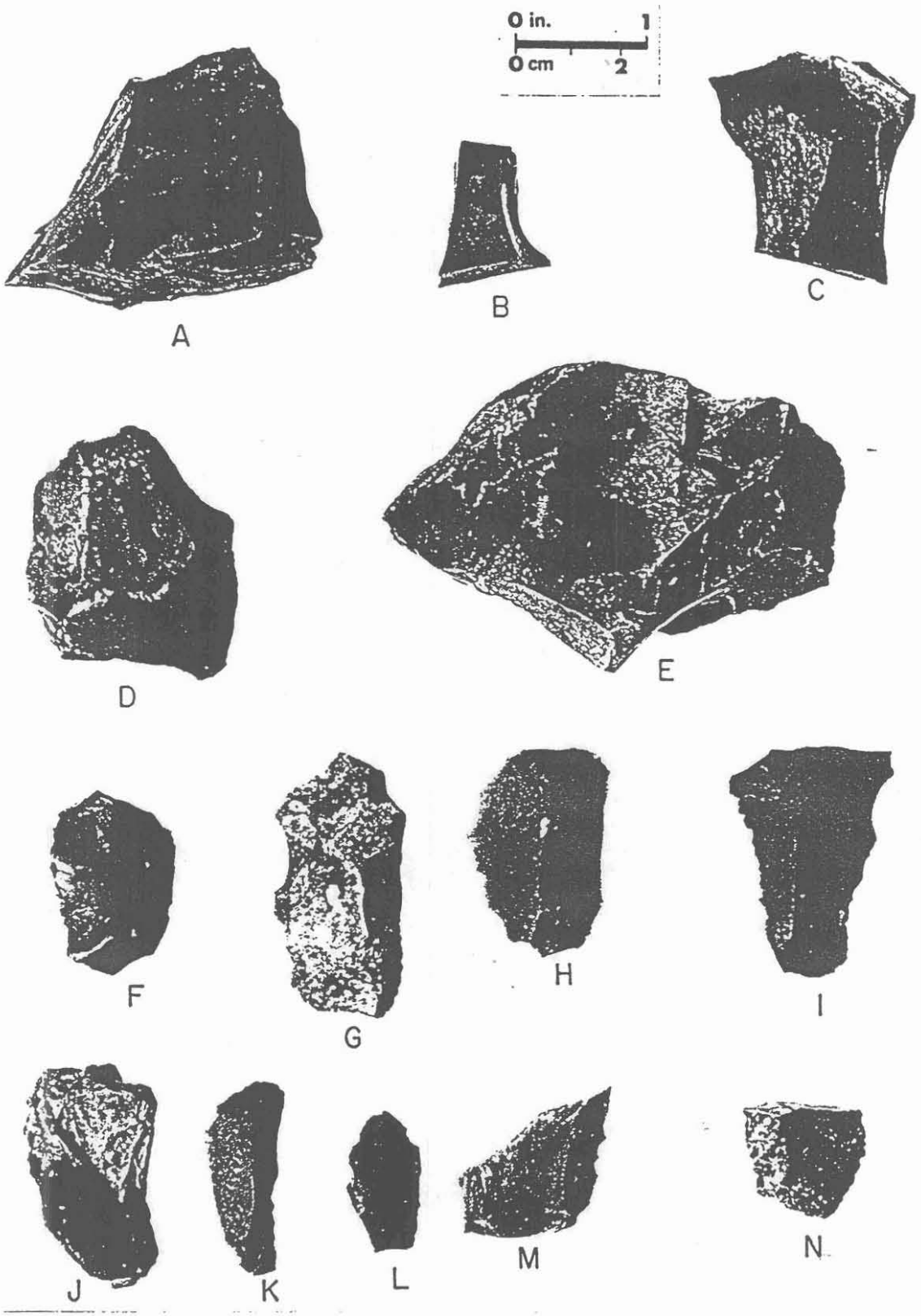

Figure 5. A-E, cores; F-N, modified flakes.

on these specimens also suggest that blade-like flakes were being removed, but this is not substantiated by the flake debitage. The final core (Fig. E) shows a different technology with flakes being struck from several margins without an obvious reduction strategy. The core fragments were located in level 1 of Test Unit 6, level 1 of Test Unit 11, and level 3 of Test Unit 7. The cores are from level 3 of Test Unit 6, level 1 of Test Unit 6, level 2 of Test Unit 14, level 3 of Test Unit 5, and level 1 of Test Unit 6.

MODIFIED FLAKES

Only 12 modified flakes were recovered from 41DW260. These represent many of the larger flakes found and are characterized by nibbling-like flake scars on at least one edge. Nine examples are shown in Fig. 5:F-N). The remaining 3 specimens are small fragments which provide no information on preferred shapes or area of modification. The illustrated specimens indicate a preference for blade-like flakes and for altering one long lateral edge. Modified flakes were found in level 3 of Test Unit 8, level 2 of Test Unit 5, level 2 of Test Unit 13, level 1 of Test Unit 6, level 2 of Test Unit 6, level 2 of Test Unit 4, level 1 of Test Unit 13, level 1 of Test Unit 6, level 1 of Test Unit 2, level 1 of Test Unit 15, level 1 of Test Unit 10, and level 1 of Test Unit 10.

UNMODIFIED FLAKES

A total of 6064 unmodified flakes were recovered from the excavations and are provenienced in Table 3. Most are small and broken; complete flakes were a rarity. There were 507 (8.3%) primary decortication flakes and 1093 (18.0%) secondary decortication flakes recovered. Combining these groups indicates that 26.4% of the sample are flakes removed early in the lithic reduction process. Bifacial thinning flakes are very rare and were represented by only

58 specimens or less than 1% of the sample. This data would suggest that much of the lithic reduction was concerned with the early reduction stages and that very few bifacial tools were manufactured within the right-of-way portion of the site.

MUSSEL SHELL

Many small mussel shell fragments were recovered and weights were taken instead of actual counts. Weight is thought to more adequately express the amount of shell present since this measure is less easily skewed when many small fragments are present. A total of 1838 grams of shell were recovered. This is a substantial volume considering that most complete shells are about 4.0 cm in diameter. Most of the shell occurred near the contact of the upper dark clay zone with the yellow basal clays. This was especially true in the Test Unit 2 block and in Test Units 13-16. Provenience data is provided in Table 3.

Table 3: Provenience of lithic debitage and mussel shell from 41DW260

Test	Level	Primary	Secondary	Interior	Total	Lipped Flakes	Mussel (gms)
1	1	11	11	77	99	0	0
	2	4	12	30	46	1	0
	3	0	0	0	0	0	0
2	1	43	80	502	625	10	222.0
	2	8	20	50	78	3	43.5
	3	0	0	2	2	0	1.5
3	1	0	1	0	1	0	5.0
4	1	4	6	13	23	0	0
	2	4	21	47	72	0	0
	3	12	25	90	127	2	1.5
5	1	2	4	17	23	2	0
	2	0	0	0	0	0	0
6	1	39	106	439	584	2	0
	2	38	51	257	346	2	27.5
	3	11	19	52	82	1	10.5
7	1	5	6	50	61	1	0
	2	20	42	219	281	0	11.0
	3	20	35	111	166	2	40.5
8	1	4	7	28	39	0	0
	2	2	12	31	45	0	2.5
	3	0	7	27	34	0	10.0

9	1	1	5	8	14	0	0
	2	19	39	106	164	0	10.0
	3	12	13	71	96	1	19.5
10	1	29	75	318	422	3	176.5
	2	13	32	68	113	3	141.5
11	1	11	37	110	158	1	157.0
	2	6	14	53	73	0	60.5
12	1	15	37	98	150	4	176.0
	2	0	6	14	20	0	32.0
13	1	6	19	65	90	1	1.5
	2	31	58	240	329	1	44.0
	3	16	34	104	154	0	100.0
14	1	8	21	83	112	0	8.5
	2	42	63	296	401	4	46.0
	3	11	18	117	146	2	89.0
15	1	4	12	40	56	3	6.5
	2	13	39	194	246	2	18.0
	3	16	31	149	196	2	154.5
16	1	4	14	49	65	0	4.0
	2	16	43	156	215	3	88.0
	3	7	18	83	108	2	127.0
TOTAL		507	1093	4464	6064	58	1838.0

ANALYSIS AND CONCLUSIONS

Archaeological testing of Site 41DW260 recovered some valid data along with an artifact inventory of 3 thin biface fragments, 8 thick biface fragments, 2 scrapers, 8 cores and core fragments, 12 modified flakes, 6064 unmodified flakes and flake fragments, and 1838 grams of mussel shell. Unfortunately no features or temporally sensitive artifacts were located thus eliminating the chances of determining the age of the occupations.

Some information was learned of the horizontal extent of the site through a surface examination and the use of spaced one meter test pits dug to locate the limits of the site within the right-of-way. All research was conducted within the highway right-of-way since (1) this is the limit of the SDHPT jurisdiction and (2) the person owning much of the site would not allow access to his property for a surface survey. As a result what is known of the site dimensions is limited to the project right-of-way.

Surface reconnaissance indicated that the site is limited to the north side of FM 3402. Both the north and south right-of-way areas had been recently bladed allowing good surface visibility. A quantity of prehistoric cultural debitage was visible on the north side of the road but not on the south side. The south side is considerably lower in elevation and is located adjacent to a 2-3 meter deep gully. It appears to be a less desirable habitation area than the higher portions of the terrace system farther north.

The maximum east-west dimensions were established at 75 meters which encompasses the total area containing flint chips, flakes, and/or burned flint

cobbles. The eastern 25 meters contain most of the observed surface debitage and most likely represent the site limits. Testing within the narrow right-of-way supports this view and suggests that the primary occupational area is less than 20 meters long and near the eastern edge of the terrace.

Testing also indicated that occupational debitage was limited to the uppermost soil zone, a dark brown sandy loam. Both the reddish gumbo clay located only in Test Unit 5 and the yellowish clay with caliche found in all other units were culturally sterile. The maximum depth of cultural materials averaged about 25 cm. Actual soil depths range from 5 cm in Test Unit 5 to 30 cm in Test Units 13-16.

It should be mentioned that the observed soil depths in the test units may be due to both erosional and depositional sequences and to the blading of the site. There is a 2 meter drop in elevation between Test Unit 5 and Test Unit 3 and some soil erosion might be expected. There is a less pronounced north-south drop from the highest point on the terrace about 30 meters north of the right-of-way to the gully south of the right-of-way.

Perhaps the major cause of differing soil depth was the blading of the site before it was discovered. As the area was bladed, attempts were made to roughly prepare the new right-of-way for the highway backslopes. The area nearest the highway was bladed somewhat deeper than those areas adjacent to the right-of-way. This can be observed in the differing depths between Block 3 (Tests Units 13-16) within a meter of the right-of-way and Block 2 (Test Units 2, 10-12) located nearby but closer to the roadway. Basal clays were reached at 30 cm in Block 3 but at only 20 cm in Block 2. There are also

differences along the east-west axis of the site which most likely relate to construction activities and the amount of soil removed. As an example, basal clays are deeper in Test Unit 4 than in Test 1 to the west and Test 6 to the east. Since the area was not seen before it was bladed, it is difficult to determine how much soil was removed from various areas.

A large quantity of mussel shell was recovered from the site with an interesting horizontal and vertical distribution. Mussel shell fragments were definitely concentrated on the eastern edge of the terrace as Table 2 indicates. Virtually all of the recovered shell was found between Test Units 2 and 6 within a 10 meter area. Shell could also be seen atop the yellow basal clays 6 meters east of Test Unit 2. This suggests that it may have covered an area about 20 meters in length along the right-of-way and at least across the 6.5 meter right-of-way width.

The second stage of testing involved expanding those units with high shell counts into two meter squares. A total of three 2 meter squares were excavated and are labeled as Blocks 1-3 for this stage of analysis. Block 1 consisted of Test Units 6-9 and was near the western edge of the shell concentration. Block 2 consisted of Test Units 2, 10, 11, and 12 and was located in the densest shell concentration. This was also the eastern edge as soil depths east of this block were insufficient for controlled excavations. Block 3 consisted of Test Units 13-16 and was located near the right-of-way between Blocks 1 and 2.

Shell weights for each block were totalled and averaged by the number of test units within the block. This procedure yielded some interesting data. Block

2 at the eastern edge averaged 250.5 grams of shell per test unit. Block 3 located 1 meter west and 1 meter north of Block 2 averaged 171.7 grams per test unit. Block 1 located 4 meters west of Block 2 averaged only 32.7 grams. This shows a very rapid decrease in density with only 8 meters seperating the western wall of Block 1 from the eastern edge of Block 2. From this data, it may be assumed that the western edge of the shell concentration occurs between Test Unit 4 and Block 6. Only 2 meters seperate the eastern wall of Test Unit 4 from the western wall of Block 1. Test Unit 4 contained only 1.5 grams of shell and is obviously outside the shell concentration.

The quantity of shell in Block 3 strongly suggests that the shell concentration extends outside the right-of-way onto private property. This concentration is expected to follow the eastern edge of the terrace system. The data suggests that it extends along the terrace edge onto property less disturbed than the highway right-of-way.

As excavations were being conducted in Blocks 1-3, efforts were made to trowel the floors and walls to determine if the shell concentrations represented a feature. Observations in all three blocks indicated that the shell tended to concentrate at the contact of the upper soil zone with the basal yellow clays. No obvious feature concentrations were observed in any of the block excavations, rather shell fragments were found evenly scattered across the floors of levels with no indications of heaping shells within a limited portion of the 2 meter squares.

Vertical distribution of shell and flake debitage were also totalled for Blocks 1-3. This data is presented below in Table 4 and indicates that the

maximum shell debitage occurs 10 cm deeper than the maximum flake frequencies in 2 of the 3 blocks. Block 2 shows both flakes and shell peaking in level 1 but this may be result of blading activities removing more of the cultural deposits here than from the other blocks.

Table 4: Vertical distribution of flakes and shell in Blocks 1-3.

	Block 1			Block 2		Block 3		
	Level 1	Level 2	Level 3	Level 1	Level 2	Level 1	Level 2	Level 3
Flakes	701	836	378	1355	278	323	1191	604
Shell	0	51.0	80.5	731.5	277.5	20.5	196.0	470.5

These vertical differences are thought to indicate that there may be multiple components present on 41DW260 with the earlier component emphasizing the collection of freshwater mussels while the later components appear to be more oriented towards lithic procurement and reduction. Unfortunately there are no diagnostic artifacts to confirm this.

The recovered artifacts consist primarily of lithic debitage and tools which were broken and abandoned during the lithic reduction process. This includes unmodified flakes, cores and core fragments, thick unshaped biface fragments, and two of the 3 thin bifaces. Completed chipped stone tools appear to be limited to the 2 scrapers and one thin biface fragment. If modified flakes are considered as expediency implements rather than deliberately fashioned tools, the recovered lithic assemblage includes an extremely low ratio of shaped tools to flakes and early lithic failures.

The primary lithic activity on 41DW260 is believed to be oriented towards reduction of locally available, poor quality fist-sized flint cobbles. The observed cobbles at the site have a thin layer of cortex completely covering the cobble. Beneath this cortex is a much thicker layer of fair to poor quality flint or chert. In a normal bifacial reduction process one would expect to cortex to be removed with a few initial flakes and then many interior flakes to be produced as the objective piece is thinned, shaped, and eventually resharpened. Decortication flakes would be expected to account for 10% or less of the flakes produced in bifacial reduction.

The percentage of decortication flakes from 41DW260 is slightly over 26% which seems abnormally high if a bifacial reduction process were completed on site. Also the percentage of bifacial thinning flakes amounts to less than 1%. Such flakes would be expected to have a curved cross section and a distinct lip where a portion of the bifacial edge was removed when the flake was driven from the objective piece. Thirdly, only 3 bifaces which had reached the shaping stage were recovered.

This data suggests that few bifaces were produced at the site and that most of the lithic activities were involved with the preliminary stages of reduction. Such a situation would be expected at a lithic procurement site where only early reduction is done before the material is moved to another location for eventual completion. This scenario appears to apply to 41DW260 and suggests that the site functioned primarily as a lithic procurement and early reduction center.

In conclusion, testing has shown that the site probably represents a lithic procurement center where few tools were completed. A greater emphasis on gathering fresh water mussels for food has also been suggested. Multiple occupations are thought to have occurred but no age can be placed on them. Testing has also shown that the site is most concentrated along the eastern edge of the terrace and that it extends onto private property north of the right-of-way. The right-of-way area contains relatively intact deposits although construction activities have removed an unknown amount of cultural materials from the top of the deposits.

Additional research is not proposed since 10% of the site within the right-of-way was tested with minimal returns. Given the low recovery of diagnostic materials, completed tools, bone, or features from 16 one meter squares, the chances of recovering sufficient data to deal with additional meaningful questions about the site seem very low. The part of the site on private property will not be disturbed by the highway project and has the potential for providing useful data. This area might qualify for inclusion as a State Archaeological Landmark. The area within the right-of-way is not thought to be worthy for inclusion due to damages by construction activities.

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