Cultural Resources Survey
City of Round Rock
Creek Bend Boulevard Extension
Williamson County, Texas
CSJ No. 0914-05-150

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Document No. 070210
Job No. 441200.01

CULTURAL RESOURCES SURVEY
CITY OF ROUND ROCK
CREEK BEND BOULEVARD EXTENSION
WILLIAMSON COUNTY, TEXAS

CSJ No. 0914-05-150
TEXAS ANTIQUITIES PERMIT No. 4606

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October 2012

Abstract

This report documents the results of a cultural resources survey conducted by Atkins North America, Inc. (Atkins, then PBS&J) within the proposed area of new right of way (ROW) for the Creek Bend Boulevard extension project in southwestern Williamson County, Texas. The new ROW area surveyed consists of an approximate 200-foot (ft) (60-meter [m]) wide by 2,500-ft (760-m) long area of potential effect (APE) between Pecan Cove to the north and Wyoming Springs Drive to the south and an additional 60-ft (18-m) wide by 900-ft (275-m) long APE for a proposed realignment of Hairy Man Road, which has since been eliminated from the design plan. The vertical APE is assumed to be 6 ft (1.8 m), based on typical highway design. The total survey area is approximately 11.8 acres (4.8 hectares).

One previously recorded cultural resource site (41WM768) and one newly recorded cultural resource site (41WM1183) were located during this cultural resource survey. Site 41WM768 is not considered eligible for the National Register of Historic Places (NRHP). Based on auger tests, trench, and hand excavations performed during Phase I cultural resources survey investigations, site 41WM1183 is considered unevaluated with regard to the NRHP. As currently planned, the proposed construction will no longer impact the site. However, if any impacts are anticipated, further investigation is recommended to determine its NRHP eligibility status.

Texas Historical Commission's survey standards for numbers of shovel tests were not met because of the low potential for buried cultural resources and the high degree of ground surface visibility that most of the project area exhibited. In other words, based on field inspection and review of soil data, the shovel tests were deemed unnecessary.

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I. INTRODUCTION

The following report presents the results of a Phase I intensive cultural resource survey of the area of potential effect (APE) from the Creek Bend Boulevard extension project in southwestern Williamson County, Texas (Figure 1). The proposed improvements would extend the existing four-lane divided roadway from the terminus at Creek Bend Circle across Brushy Creek to connect with Wyoming Springs Drive. The proposed new location facility would include raised medians, sidewalks, and bicycle accommodations. Formerly, a two-lane Hairy Man Road realignment was planned to tee off of the proposed Creek Bend Boulevard extension just west of the Brushy Creek bridge and reconnect with the existing Hairy Man Road approximately 900 feet (ft) (274 meters [m]) to the west, but this realignment has been taken out of the project plans. Hairy Man Road will now remain in service in its current location.

The area surveyed includes an approximate 200-ft (60-m) wide by 2,300-ft (700-m) long APE between Creek Bend Circle to the north and Wyoming Springs Drive to the south that would be used for a new road alignment and bridge spanning Brushy Creek and Hairy Man Road. An additional 600-ft (18-m) wide by 900-ft (275-m) long surveyed APE was formerly planned for a proposed realignment of Hairy Man Road (see Figure 1). The vertical APE is 6 ft (1.8 m) in depth, based on typical highway design. The land on which the survey was conducted is privately owned. The total survey area is approximately 11.8 acres (4.8 hectares).

The investigation is required by the Antiquities Code of Texas (Texas Natural Resource Code of 1977, Title 9, Chapter 191) and was conducted according to the Texas Historical Commission (THC) Rules of Practice and Procedure for the Antiquities Code (Chapter 26).

The fieldwork was directed by Michael Nash, who also served as Principal Investigator. The field crew included Atkins archeologists Haley Rush, Christopher Heiligenstein, Andrea Stahman, Candace Wallace, and Brian Farabough. Geoarcheological investigations were conducted by Robert Rogers. The fieldwork was done on July 18–24, 2007, March 26 through April 6, 2010, and September 7, 2012, under Texas Antiquities Permit No. 4604.

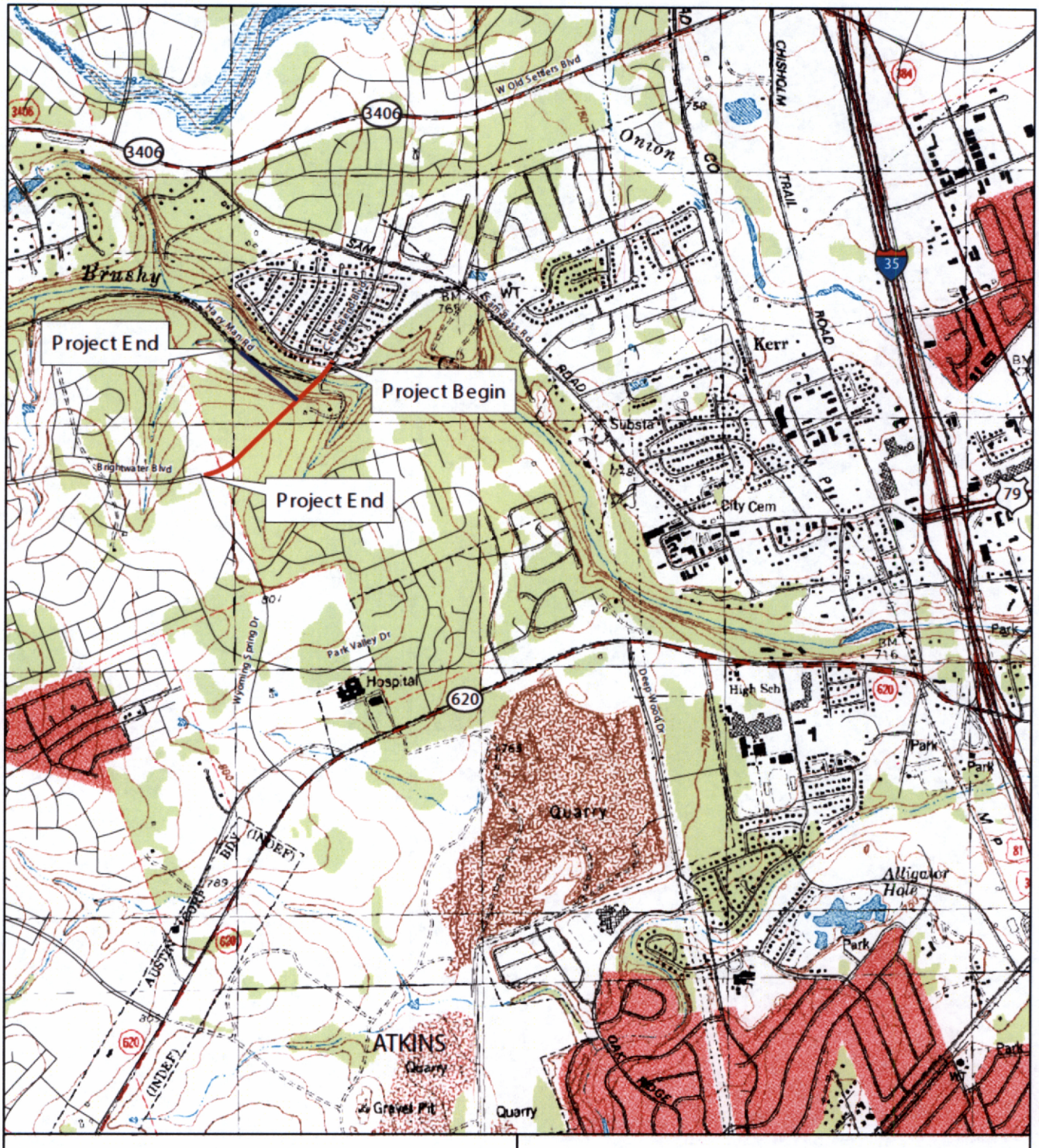

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Figure 1
Creek Bend Boulevard Extension
Project Location Map

Creek Bend Cir. to Wyoming Springs Dr. (0.44 miles)
Round Rock, Williamson County, Texas

: Surveyed ROW in APE

: Surveyed ROW no longer in APE

N

0 750 1,500 3,000 4,500 6,000 Feet

CSJ: 0914-05-150	Scale: 1 inch equals 2,000 feet	
Source(s): CORR GIS	Date: 12 June 2007	State Plane, Texas Central, NAD83, Feet

II. RESEARCH DESIGN

RESEARCH GOALS

The primary goals of this investigation were to (1) locate any archeological resources that may exist within the APE; (2) assess their potential for State Archeological Landmark (SAL) or National Register of Historic Places (NRHP) eligibility; (3) assess the effect of the proposed construction on the resources; and (4) provide site-specific recommendations for mitigation of adverse impact to any SAL- or NRHP-eligible or potentially eligible properties.

RESEARCH METHODOLOGY

The research methods undertaken to accomplish the research goals included a (1) search of archival records to locate previously recorded sites, SAL- or NRHP-listed or eligible sites, and possible site locations in the local area, and (2) survey of the APE to locate cultural resources. Prior to the fieldwork, Atkins North America, Inc. (Atkins, then PBS&J) conducted records/literature searches with the Texas Archeological Research Laboratory (TARL) and the THC. Reports of previous archeological investigations and previously recorded cultural resource sites in the project area or vicinity and sources concerning the prehistoric and historic background of the area were reviewed. Atkins then conducted an investigation of the APE to locate cultural resources.

The Phase I investigation followed THC survey guidelines and initially consisted of a pedestrian surface inspection performed by Atkins archeologists, supplemented by six judgmentally placed auger tests in areas along the approximate right of way (ROW) that exhibit a potential for buried cultural deposits conducted in 2007. Six backhoe trenches and a 50-x-100-centimeter (cm) controlled, hand-excavated test unit were later used in 2010 to better evaluate the special extent and subsurface integrity of site 41WM1183.

BACKGROUND RESEARCH

Atkins conducted a records search to locate recorded cultural resource properties within the proposed project area and vicinity. The files at TARL and the Texas Archeological Site Atlas were examined for locations of previously recorded cultural resource sites. The site files and maps of the THC were reviewed for locations of properties listed on the NRHP, sites designated as SALs, and records of previously conducted cultural resource surveys. The THC's list of Official Texas Historical Markers was also reviewed.

Three past cultural resource investigations have been conducted within, or in the immediate vicinity of the present project. In 1986, Espey Huston & Associates (now Atkins) conducted a pedestrian survey of the Brushy Creek Wastewater Interceptor line along the south side of Brushy Creek, bisecting the current project's extension ROW near its intersection with Brushy Creek (Voellinger and Smyth 1987). In 1999, PBS&J (now Atkins) excavated backhoe trenches along the same Brushy Creek Wastewater Interceptor

line (Rogers 2001). The trench excavated during the 1999 investigation that is nearest to the present project was about 50 m west of the western terminus of the present Hairy Man Road realignment. In 2002, PBS&J (now Atkins) conducted a cultural resources survey of a proposed wastewater facility area immediately west of the proposed ROW near its intersection with Brushy Creek (Hales 2003). None of these three surveys located any cultural resources within the present project area.

A review of the Texas Archeological Sites Atlas in May 2007 revealed that no archeological properties had been recorded within the proposed project APE. Five sites are located within 1 kilometer of the project APE. They include 41WM1055, 41WM720, and 41WM721, located northwest of the Hairy Man Road reroute terminus about 200, 700, and 750 m, respectively; 41WM731, located about 150 m east-southeast of the northern terminus; and 41WM768, located about 150 m southwest of the southern terminus. Site 41WM731 is a prehistoric occupation site with at least two burned rock midden features and buried cultural deposits. Sites 41WM720, 41WM721, 41WM768, and 41WM1055 are surficial prehistoric lithic scatters.

PBS&J (now Atkins) reviewed the Williamson County Soil Survey (Werchan and Coker 1983), the *Geologic Atlas of Texas, Austin Sheet* (Bureau of Economic Geology [BEG] 1981), and U.S. Geologic Survey 7.5-minute Round Rock, Texas, topographic map to determine the general landscape characteristics of the project area with regard to the possible occurrence and preservation of archeological remains.

Over most of its area, the project area is currently in relatively level to gently sloping undeveloped rangeland with sparse to dense brush and small trees. However, near its northern terminus, the project area includes the channel of Brushy Creek and its associated floodplain, terraces, and valley margins. A more varied riverine vegetation regime with bottomland hardwood timber characterized this portion of the project area. The proposed project is located within an area mapped by the *Geologic Atlas of Texas* (BEG 1981) as Edwards Limestone, a very fine-grained, hard, thinly bedded limestone of the Fredericksburg Group with commonly occurring chert nodules and plates. It underlies the majority of western Williamson County between Interstate Highway 35 and U.S. Highway 183. The Williamson County Soil Survey (Werchan and Coker 1983) maps the proposed project location as Georgetown stony clay loam (1–3 percent slopes), Eckrant extremely stony clay (0–3 percent slopes), Eckrant-Rock outcrop complex (rolling), and Oakalla soils (channeled). Georgetown and Eckrant soils are upland residual soils derived from indurated fractured limestone with very limited potential for substantive recent soil development or intact cultural deposits. Oakalla soils are typically moderately deep (65–180 cm) bottomland soils occurring in narrow stream valleys, which may have the potential to contain intact cultural deposits.

Based on background information, the potential for identifying prehistoric and historic sites within the APE was considered to be high.

FIELD METHODS

The survey area, as then identified, was subjected to a 100 percent pedestrian survey in 2007. It was planned that shovel tests approximately 30 cm in diameter would be judgmentally placed along the surveyed ROWs in areas where a potential existed for buried cultural resources less than 3 ft (90 cm) in depth, or that exhibited a low degree of ground surface visibility. In areas of deep depositional potential (deeper than 3 ft [90 cm]), auger tests were utilized. Because of restrictions by the landowner, only six auger tests, bored to a maximum depth of 6 ft (180 cm), were allowed during this portion of the Phase I investigation. No areas of subsurface potential or low surface visibility were observed during the survey except for the upper fluvial terrace south of Brushy Creek where the six auger tests were placed. All soils that were excavated from auger tests were broken up and visually inspected because the clay loam matrix was not screenable. All auger tests were backfilled upon completion. No artifacts were collected during the 2007 investigation.

In 2010, landowner permission was obtained to conducted additional investigations including backhoe trenches in proximity to a location where a previously excavated auger test had encountered deeply buried cultural remains. Six backhoe trenches were conducted in the vicinity of the positive auger test.

The methods employed during the trenching investigation were as follows. Trench locations were selected by the Principal Investigator based on the microtopography of the site location, the results of augering testing conducted during the pedestrian survey, and the relationship to the project ROW. Trenches were oriented approximately north-northeast to south-southwest and averaged between 6 and 8 m in length. During the course of individual trench excavation, a sample of about two to four shovel loads from each backhoe bucket was sieved through ¼-inch hardware cloth. All cultural material recovered was collected, bagged, and provenience recorded. The remainder of each bucket load of trench sediment was examined as it was gradually unloaded, and cultural materials observed during that time were also collected.

Each trench was initially excavated to a depth of approximately 4 ft (1.2 m). At this depth, the trench was examined and the trench walls were trowel- and/or shovel-scraped. The stratigraphy observed in the trench was then recorded using standard soil description nomenclature. Sediment samples from selected trenches were collected for further examination. Following completion of the trench profiling, excavation and sieving continued until culturally sterile strata or bedrock was reached. Trenches were then photographed. All of the trenches were backfilled upon completion. The location of each trench was recorded with a global positioning system capable of sub-meter accuracy. Sediment samples were later examined using a 40x binocular microscope, and observations made during this procedure were added to the profile descriptions complied during the field investigation.

Finally, in 2012, approximately 90 m (300 ft) of existing road ROW at the northern end of the project was added to APE and this area was subjected to a 100 percent pedestrian survey, which included two shovel tests. No additional cultural resources were discovered.

III. RESULTS

One previously recorded cultural resource site (41WM768) and one newly recorded cultural resource site (41WM1183) were located during this cultural resource survey and are described below.

SITE 41WM768

Site 41WM768 is a large surficial prehistoric lithic procurement and primary reduction site initially recorded in 1991 by Hicks & Company during a survey for a proposed elementary school (Anthony and Arthur 1991). The site is located on a large, relatively level to gently sloping bench along a ridge backslope at an elevation of approximately 790 ft above mean sea level. The site was described as a scatter of flakes, cores, sampled cobbles, and tool preforms that extended over Hicks & Company's entire 15-acre project area. During the present survey, artifacts of a similar nature were encountered along the southern portion of the Creek Bend Boulevard extension ROW on the same landform as and northeast of site 41WM768. To ascertain whether the scatter encountered during the present survey was an extension of site 41WM768, the interstitial area along Brightwater Boulevard was reconnoitered, and it was observed that the scatter was continuous (Figure 2, map pocket, not for public disclosure). Therefore, the surficial lithic scatter encountered within the ROW was considered to be an extension of site 41WM768.

Site 41WM768 extends along the bench to the front edge of the landform where the slope begins to increase. The portion of the proposed ROW through the site is characterized by a very gently sloping ground surface with excellent surface visibility and moderately sparse to dense junipers being the most common vegetation. The soil is mapped as Eckrant-Rock outcrop complex, rolling and Eckrant extremely stony clay, 0–3 percent slopes (Werchen and Coker 1983). Surface exposures of limestone bedrock were ubiquitous. Several karst features were observed within site 41WM768, but none were of sufficient size to be utilized by prehistoric occupants. No shovel tests were conducted within the site; surface visibility averaged about 60 percent, and based on shovel probes, the soil, when present, was typically less than 15 cm in thickness.

Observed artifacts consisted entirely of chert lithic material. Although bifacially or unifacially modified artifacts were rare, with only about five expedient tools observed, lithic debitage including large reduction flakes, shatter, sampled cobbles, and relatively common cores, occurring at an average density of about 0.5 artifact per square meter. No diagnostic artifacts, cultural features, or areas of artifact concentration were observed. No artifacts were collected.

The surveyed portion of site 41WM768 has been disturbed by past clearing of brushy vegetation as evidenced by recently cleared areas with no juniper revegetation and occasional push piles in brushy areas indicating older clearing episodes. Several unimproved roads also traverse the area.

Based on the paucity of tools observed at the site, it appears that the site served primarily as a lithic procurement and reduction locus. The absence of features or activity areas, buried cultural deposits,

datable remains, or other characteristics that might suggest significance indicate that the site has little potential to yield significant amounts of additional information with more-intensive investigation. No elements that could contribute to the site's potential eligibility were observed within the present project area. Therefore, no further investigation of this site is recommended in association with the proposed project.

SITE 41WM1183

Site 41WM1183 is a buried prehistoric site located at the southern margin of the valley of Brushy Creek, a small perennial stream. More specifically, the site is located at the back of a narrow, gently sloping fluviate terrace at the base of a prominent backslope (see Figure 2, map pocket, not for public disclosure). The terrace is about 70 m wide and appears to narrow to the east and broaden to the west of the location. The back of the terrace ends at a moderately steep backslope immediately south of the site, and the front edge of the terrace is about 20 m north of the site (Figure 3). Brushy Creek is located about 100 m to the north. The terrace where the site occurs is about 5 m above the present creek channel and is probably within the creek's 100-year floodplain. Beyond the terrace edge to the north, the terrain slopes more steeply down to a narrow floodplain associated with Brushy Creek. The ground surface visibility at the location was about 30 percent at the time of the survey. The vicinity can be characterized as relatively open woodland with vegetation in the vicinity including pecan, oak, and other hardwood trees, some very large; and eastern red cedar and juniper with sparse to moderately dense undergrowth of greenbrier, yaupon, and other shrubs. An unimproved road bisects the site. The soil at the location is mapped as Eckrant cobbly clay, 1–8 percent slopes (Werchan and Coker 1983).

Site 41WM1183 was initially identified by three lithic debitage fragments encountered between 125 and 145 cm below the surface in a single auger test conducted during the 2007 survey investigations for the project. Five additional auger tests were placed along the terrace, but all were culturally negative. However, none were in close proximity to the culturally positive auger test, with the nearest being about 35 m to the east.

Further investigation of the site was not possible until 2010 when an agreement was reached with the landowner to allow backhoe trenching investigations. In March and April 2010, six backhoe trenches and one 50-x-100-cm test unit were conducted at the site (see Figure 3).

BACKHOE TRENCHES

Trenching revealed that site 41WM1183 is primarily buried in Holocene alluvial deposits of Brushy Creek as shown in trenches 1, 2, 4, and 5 (Appendix A). Trench 3 was prehistorically sterile, establishing northern limits for the site. Trench 6 yielded prehistoric remains buried in mixed Holocene alluvial deposits of Brushy Creek mixed with colluvially transported sediments and limestone cobbles and gravels from the adjacent escarpment.

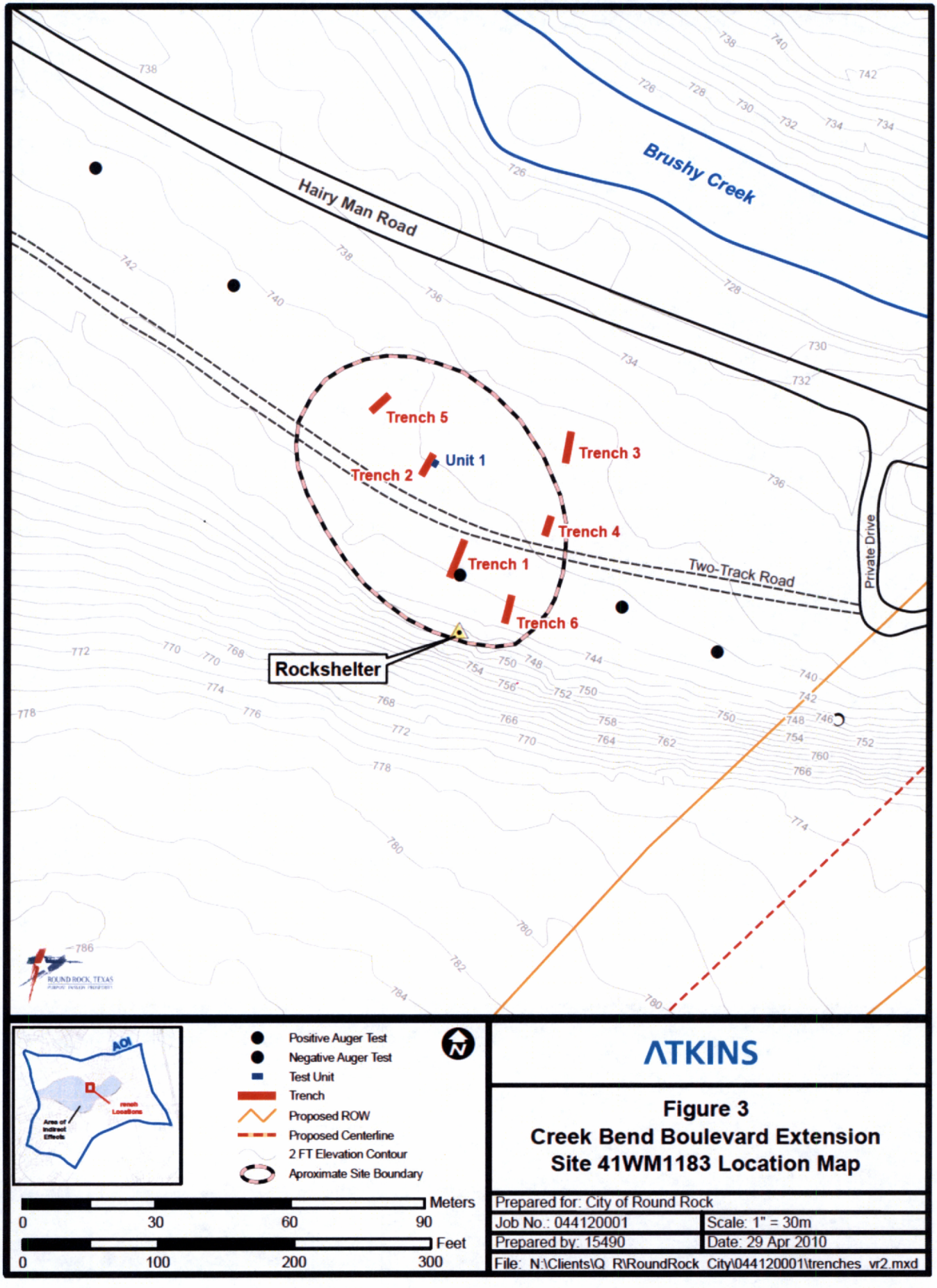

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Figure 3
Creek Bend Boulevard Extension
Site 41WM1183 Location Map

Prepared for: City of Round Rock	
Job No.: 044120001	Scale: 1" = 30m
Prepared by: 15490	Date: 29 Apr 2010
File: N:\Clients\Q_R\RoundRock_City\044120001\trenches_vr2.mxd	

Two typical profiles were recorded for the six trenches excavated at the site. The differences between them reflect the positions of the trenches on the landscape and the nature of the depositional forces responsible for the deposits there, with trenches 1–5 being in areas predominantly influenced by alluvial deposition, while Trench 6, placed nearer the escarpment, also contained material eroded, transported, and redeposited from upslope.

The typical soil horizon sequence observed in trenches 1–5 was Ak-Akb-Bk. The Ak horizon consisted of a very dark grayish brown clay and appears to postdate the prehistoric occupations at the site. It is underlain by one or more buried A horizons (Akb), which consisted of a very dark grayish brown or dark brown clay loam. The Abk horizon is underlain by a sequence of one or more Bkb horizons. In Trench 6, the Bk horizons were absent and the profile showed an Ak horizon and three Akb horizons overlying bedrock.

Vertically, cultural material was generally absent from the Ak horizon but was observed in the Akb horizons and Bk and Bkb horizons with the artifact density generally lighter in the Akb horizons than the underlying B horizons. Horizontally, the density of lithic artifacts decreased with distance from the base of the escarpment. Significantly higher density of lithic material was observed in Trench 6, closest to the escarpment. Sample screening of backhoe-excavated material yielded 172 lithic artifacts (Appendix B). These include 2 projectile points (Figure 4a and 4b), 1 projectile point preform (Figure 4c), 5 bifaces or fragments (Figure 4d and 4e), 3 utilized or modified flakes, and 161 debitage fragments including 5 cores and 1 hammerstone. All of the lithic artifacts were manufactured from local chert resources available at the escarpment summit above the site.

Two prehistoric stone-lined hearth features, designated features 1 and 2, were encountered in the Akb horizon in trenches 2 and 6, respectively. Feature 1 was partially excavated by a 50-x-100-cm test unit adjacent to Trench 2.

Two temporally diagnostic artifacts were located during the trenching, both from within Bkb horizons. They include an Angostura-like point (Figure 4a) from approximately 150 cmbs in Trench 1, and a Martindale point (Figure 4b) from about 115 cmbs in Trench 2. The stratigraphic position of the Angostura-like dart point suggests a cultural component dating to the late Paleoindian or Early Archaic periods. The Martindale point, found somewhat higher in the stratigraphic column, indicates an Early to Middle Archaic component. While no absolute age has yet been obtained from the two hearth features, their stratigraphic positions suggest they are younger, perhaps late Archaic or Late Prehistoric in age.

Unit 1

One 50-x-100-cm test unit was excavated at site 41WM1183. The unit was placed adjacent to the east wall of Trench 2 to investigate Feature 1, a hearth that was visible in the east wall profile of the trench between 30 and 40 cmbs. The unit yielded 141 debitage fragments from between 10 and 170 cmbs with the majority (n = 137) between levels 6 and 17 (see Appendix B). The stratigraphic profile of the unit

a) Lot 9
Chert
Angostura-like Dart Point

b) Lot 10
Chert
Martindale Dart Point

c) Lot 32
Chert
Dart Point Preform

d) Lot 32
Chert
Biface

e) Lot 33
Chert
Biface

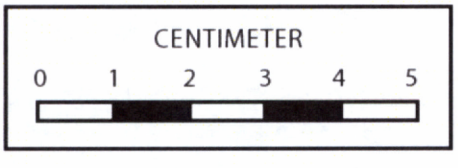

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Figure 4

41WM1183 FORMAL TOOLS

L:\Projects\He1\CLIENTS\City of Round Rock\441200.00 Creek Bend\Archaeology\cad\Figure 4_41WM1183 Formal Tools

Drafted by: C. Wallace

showed an A horizon of very dark gray (10YR 3/1) to dark brown (10YR 3/2) clay loam about 60 cm in thickness overlying a dark yellowish brown (10YR 4/6) to strong brown (10YR 5/6) clay loam B horizon that extended to the base of the unit at 180 cmbs.

Level 1 (0–10 cmbs) was culturally sterile. Levels 3–5 (20–50 cmbs) yielded sparse lithic debitage as well as 25.1 kilogram (kg) of fire-cracked rock (FCR), recovered from between about 30 and 43 cmbs, associated with Feature 1. Lithic artifacts increased in density below Feature 1, averaging 8 artifacts per 10-cm level between 50 and 100 cmbs. The heaviest density of material in the unit occurred between 100 and 160 cmbs, averaging 16 artifacts per 10-cm level (Table 1).

Table 1: Artifacts Recovered from Unit 1

Level	Depth (cmbs)	Debitage	Burned Rock Weight (kg)
3	20–30	1	0.9
4	30–40		12.42
5	40–50	3	11.78
6	50–60	10	
7	60–70	6	
8	70–80	2	
9	80–90	10	
10	90–100	10	
11	100–110	14	
12	110–120	21	
13	120–130	19	
14	130–140	16	
15	140–150	14	
16	150–160	12	
17	160–170	4	

Cultural Features

Two cultural features, interpreted as stone-lined prehistoric hearths, were identified during the trenching.

Feature 1, uncovered in the wall of Trench 2, was partially hand excavated by Unit 1. The original manifestation of the feature was a small cluster of burned rocks observed between 30 and 40 cmbs in the south wall profile of the trench. During excavation, two small FCR fragments were encountered in Level 2. In Level 3 most of the larger rocks were exposed. Two large FCRs were encountered at 24 cmbs and most of the other FCRs were exposed at about 28 to 30 cmbs. The level also yielded one debitage fragment. By the bottom of Level 4 at 40 cmbs, all of the FCRs were completely exposed, or nearly so (Figure 5). The largest excavated feature rock is between 10 and 15 cm in maximum measurement. The bottom of most of the feature rocks is about 42 to 43 cmbs. Only two FCRs were observed to be broken in

situ. A few of the FCRs partially overlap other rocks, but none completely overlap. The base of the feature is covered by a single layer of rocks. The feature appears to extend in all horizontal directions from the excavated unit. Darkened soil and charcoal flecks in interstitial areas between rocks became apparent at about 40 cmbs and continued to about 45 cmbs. These additional lithic debitage fragments were recovered from Level 5. All of the dark-stained and charcoal-flecked soil was collected for possible future analysis. One additional debitage fragment was recovered from between 40 and 45 cmbs associated with feature fill.

Feature 2 identified in the wall of Trench 6 at about 60 cmbs consisted of a small cluster of FCR with about five fragments exposed (see Appendix A, Figure 2).

Additional FCR and artifacts were observed in Trench 4, in the Bkb1 horizon (see Appendix A, Figure 3) but were not significantly clustered to determine that they were in association so they were not assigned a feature number.

Also associated with the site but about 25 m south of the proposed alignment is a rockshelter. It is inset into the escarpment about 2 m above the adjacent terrace. The rockshelter is about 8 to 10 m in length, about 1 m in maximum height, and 2 m in maximum depth. Talus about 2 m in thickness is deposited on the terrace in front of the shelter. The rockshelter was not closely examined as it was clearly outside of the proposed ROW. No artifacts were observed associated with it.

Because of the potential for significant deeply buried cultural deposits at the location, it is recommended that prior to any future impacts, testing investigations be conducted to determine NRHP and SAL eligibility.

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Figure 5

SITE 41WM1183
FEATURE 1, UNIT 1 AT 40 CMBS

L:\Projects\He1\CL ENTS\City of Round Rock\441200.00 Creek Bend\Archaeology\cad\Figure 5_41WM1183, Feature 1

Drafted by: C. Wallace

IV. CONCLUSIONS AND RECOMMENDATIONS

Because of the low potential for buried cultural resources and the high degree of ground surface visibility encountered over most of the surveyed area, shovel testing was not warranted and the THC's survey standards for number of shovel tests were not met.

One previously recorded cultural resource site (41WM768) and one newly recorded cultural resource site (41WM1183) were located during this cultural resource survey. The portion of site 41WM768 within the project area exhibited no elements that could contribute to a recommendation of eligibility. No further investigation is recommended for this site. Per completion of the Phase I investigation, it was determined that the NRHP eligibility of site 41WM1183 is unknown, and the site warrants a Phase II testing investigation to determine its NRHP eligibility prior to any impacts. However, project plans have changed so that no impact to the site are currently anticipated. It is recommended that no further investigation be required for the undertaking.

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Appendix A

Geoarcheological Investigations

APPENDIX A
GEOARCHEOLOGICAL INVESTIGATIONS AT 41WM1183

INTRODUCTION

Geoarcheological investigations were conducted at prehistoric site 41WM1183 between March 29 and April 5, 2010. A total of six exploratory backhoe trenches were excavated at the site. The purpose of the investigation was to assess the natural and cultural stratigraphy at the site, and help delineate the spatial extent of the prehistoric cultural deposits within the proposed Area of Potential Effect (APE).

PHYSICAL SETTING

Site 41WM1183 lies along Brushy Creek, the largest tributary of the San Gabriel River. Brushy Creek has its headwaters in the Edwards Plateau in western Williamson County, and flows in an east-northeasterly direction for over 37 miles (60 km), entering the San Gabriel River in Milam County. Site 41WM1183 is situated in the upper reaches of Brushy Creek, as defined by Rogers (2006: 183-189). Along its upper reaches, from its headwaters to the Balcones Fault just west of the city of Round Rock, the creek is shallow and narrow, and is underlain by Cretaceous-aged rocks of the Fredericksburg Group. The creek and its tributaries have occupied a valley in the Lampasas Cut Plain since the late Pleistocene. The Brushy Creek valley contains thin and narrow fluvial deposits, which resulted from episodes of incising and deposition of terrace deposits. During the Holocene the streams along the upper reaches of Brushy Creek cut and filled successively narrower floodplains, and the late Holocene floodplain is characterized by flood chutes that have shifted laterally to ridge and swale topography.

Three thin and narrow Quaternary fluvial terraces, designated (from oldest to youngest) Q-1, Q-2, and Q-3 are found along the upper reaches of Brushy Creek (Collins and Mear 1998: 13). Of the three terraces, the Q-2, which is composed of fining-upward silt, calcareous gravel and sand, occurs at 41WM1183.

The soils of two soil series occur at 41WM1183, Oakalla and Eckrant. Both soils belong to the order Mollisols. Oakalla soils were encountered in trenches 1-5. These soils are classified as Cumulic Haplustolls, which are Mollisols that formed in alluvium. Trench 6 appears to be in soils of the Eckrant series, which are Lithic Hapustolls, which formed in residuum over interbedded limestone (Werchan and Coker 1983). The stratigraphic sequence observed in the trenches excavated at 41WM1183 revealed that the soils and sediments at the site have been altered by anthropogenic, biogenic and geogenic processes.

Figure
Hearth (Feature 2)
Trench 6, 60cmbs

Two cultural features, interpreted as stone-lined prehistoric hearths, were identified during the trenching. In both cases, a photograph of the feature was taken, and a detailed profile drawing was made. Feature 1, uncovered in the wall of Trench 2, (Figure 3) was later hand excavated; the results of that effort are presented below. Feature 2, identified in the wall of Trench 6, (see Figure 2) was photographed, drawn, and covered with plastic sheeting prior to backfilling. Additional FCR and artifacts were observed in Trench 4, in the Bkb1 horizon (Figure 4). Although these materials were not assigned a feature number, they were photographed, drawn, and covered with plastic sheeting.

Figure 3
Hearth (Feature 1)
Trench 2, 30cmbs

Figure 4
FCR and artifacts
Trench 4 (Bkb1 horizon)

TRENCH PROFILE DESCRIPTIONS

Trench 1
East Wall Profile

Zone	Depth	Description
I	0-50 cm	Thick bedded; clear, wavy boundary; very dark gray (10YR 3/1) loamy clay; moderate, medium blocky structure; friable (moist); numerous roots; effervescent; abundant carbonate coatings and concretions <1mm; common snail shell fragments. Ak1 horizon. (40-60 cm thick)
II	50-110 cm	Thick bedded; clear, wavy boundary; dark brown (10YR 3/3) clay loam; moderate, medium blocky structure; friable (moist); few roots in upper part; effervescent; abundant carbonate coatings and concretions <1 mm ; common snail shell fragments; contains prehistoric artifacts. Ak2b horizon. (55-60 cm thick)
III	110 -200+cm	Lower boundary not encountered; dark yellowish brown (10YR 3/4) clay; strong, coarse blocky structure; friable (moist); effervescent; abundant carbonate coatings, concretions <2mm, and filaments; pores < 1mm; contains prehistoric artifacts, Bkb horizon. (100+ cm thick)

Trench 2
East Wall Profile

Zone	Depth	Description
I	0-30 cm	Thick bedded; clear, wavy boundary; very dark gray (10YR 3/1) loamy clay; moderate, medium blocky

		structure; friable (moist); numerous roots; effervescent; abundant carbonate coatings and concretions <1mm; common snail shell fragments. Ak horizon. (30-35 cm thick)
II	30-60 cm	Thick bedded; clear, wavy boundary; dark brown (10YR 3/2) clay loam; moderate, medium blocky structure; friable (moist); few roots in upper part; effervescent; abundant carbonate coatings and concretions <1 mm ; common snail shell fragments; prehistoric hearth at top of zone (Feature 1), prehistoric artifacts throughout. Akb horizon. (30-35 cm thick)
III	60-90 cm	Thick bedded; clear, smooth boundary; dark yellowish brown (10YR 4/6) clay loam; moderate, medium blocky structure; friable (moist); common *Rabdotus* shells; effervescent; abundant carbonate coatings, concretions <2mm, and filaments; few small roots; common pores <1mm diameter; prehistoric artifacts throughout. Bkb1 horizon. (27-31 cm thick)
IV	90-118 cm	Thick bedded; clear, smooth boundary; dark yellowish brown (10YR 4/6) gravelly clay; weak, moderate blocky structure; gravels 2-3cm in diameter; effervescent; abundant carbonate coatings; common concretions <3mm, and filaments; Bkb2 horizon. (30-32 cm thick)
V	118-150 cm	Thick bedded; clear, smooth boundary; dark yellowish brown (10YR 4/6) gravelly clay; few limestone gravels, less that 2cm in diameter; coarse, strong, blocky structure; effervescent abundant carbonate coatings, nodules 1cm, and filaments; contains prehistoric artifacts. Bkb3 horizon. (30- 35 cm thick)

VI	150-175+ cm	Lower boundary not encountered; strong brown (10YR 5/6) silt; weak, fine, subangular blocky to slightly platy structure; friable; common *Rabdotus* shell fragments; strongly effervescent; abundant carbonate coatings, nodules 1cm, and filaments. Bkb4 horizon.

Trench 3
East Wall Profile

Zone	Depth	Description
I	0-25cm	Thick bedded; clear, wavy boundary; very dark gray (10YR 3/1) loamy clay; moderate, medium blocky structure; friable (moist); numerous roots; effervescent; abundant carbonate coatings and concretions <1mm; common snail shell fragments. Ak horizon. (20-25 cm thick)
II	25-90 cm	Thick bedded; clear, smooth boundary; very dark grayish brown (10YR 3/2) clay loam; medium moderate,blocky structure; firm few small gravels, 2-3 cm in diameter; effervescent; abundant carbonate coatings and concretions <1 mm ; common snail shell fragments. Abk1 horizon (60-65 cm thick)
III	90-140 cm	Thick bedded; clear, smooth boundary; dark brown (10YR 3/3) loam; weak, fine subangular blocky structure; friable; effervescent; abundant carbonate coatings and concretions <1 mm ; common snail shell fragments.. Abk2 horizon. (50-55 cm thick)
IV	140-200+cm	Lower boundary not encountered; dark yellowish brown (10YR 4/6) gravelly clay; structure weak, moderate blocky structure; abundant gravels

		2-3cm in diameter; effervescent; abundant carbonate coatings; common concretions <3mm, and filaments. Bkb horizon.

Trench 4
West Wall Profile

Zone	Depth	Description
I	0-12 cm	Medium bedded; clear, smooth boundary; very dark gray (10YR 3/1) clay loam; medium moderate, blocky structure; firm; common roots. Ak horizon (10-15 cm thick)
II	12-40 cm	Thick bedded; clear, smooth boundary; very dark grayish brown (10YR 3/2) clay loam; medium moderate,blocky structure; firm few small gravels, 2-3 cm in diameter. Akb horizon (25-35 cm thick)
III	40-90 cm	Thick bedded; clear, smooth boundary; dark yellowish brown (10YR 4/6) clay loam; moderate, medium blocky structure; friable (moist); common *Rabdotus* shells; effervescent; abundant carbonate coatings, concretions <2mm, and filaments; few small roots; common pores <1mm diameter; prehistoric artifacts including FCR. Bkb1 horizon. (15-50 cm thick)
IV	90-150+cm	Thick bedded; clear, smooth boundary; dark yellowish brown (10YR 4/6) gravelly clay; structure weak, moderate blocky structure; gravels 2-3cm in diameter; abundant carbonate coatings; common concretions <3mm, filaments. Bkb2 horizon. (30-32 cm thick)

Trench 5
East Wall Profile

Zone	Depth	Description
I	0-30 cm	Thick bedded; clear, wavy boundary; very dark gray

		(10YR 3/1) loamy clay; moderate, medium blocky structure; friable (moist); numerous roots; effervescent; abundant carbonate coatings and concretions <1mm; common snail shell fragments. Ak horizon. (30 cm thick)
II	30-60 cm	Thick bedded; clear, wavy boundary; dark brown (10YR 3/3) clay loam; moderate, medium blocky structure; friable (moist); few roots in upper part; effervescent; abundant carbonate coatings and concretions <1 mm ; common snail shell fragments; Akb horizon. (28-35 cm thick)
III	60-85 cm	Medium bedded; clear, smooth boundary; dark yellowish brown (10YR 4/6) clay loam; weak, fine subangular blocky structure; firm (dry). Bkb 1 horizon (20-25 cm thick)
IV	85-110 cm	Thick bedded; clear, smooth boundary; dark yellowish brown (10YR 4/6) gravelly clay loam; structure obscured by gravels; gravels 2-3 cm in diameter. Bkb2 horizon. (25-30 cm thick)
V	110-190+ cm	Lower boundary not encountered; dark yellowish brown (10YR 4/6) silty clay; medium, moderate blocky structure; friable; abundant Rabdotus shell and shell fragments; common carbonate coatings and filaments; strongly effervescent. Bkb3 horizon.

Trench 6
East Wall Profile

Zone	Depth	Description
I	0-30 cm	Thick bedded; clear, wavy boundary; black (10YR 2/1) clay; coarse, strong blocky structure; friable (moist); common roots, common pores; few cobbles (talus); few gravels; few prehistoric debitage. Ak horizon. (28-33 cm thick)
II	30-75 cm	Thick bedded; clear, wavy boundary; dark brown (10YR 3/2) silty clay; medium, moderate blocky

		structure; firm (dry); common roots; common snail shell fragments; common carbonate coatings and concretions < 1mm effervescent; prehistoric hearth (Feature 2) at 60 cm. Akb1 horizon. (40-45 cm thick)
III	75-105 cm	Thick bedded; clear, wavy boundary; dark brown (10YR 3/3) silty clay; medium, moderate blocky structure; friable (moist); effervescent; contains prehistoric artifacts. Akb2 horizon. (25-30 cm thick)
IV	105-200 cm	Thick bedded; abrupt smooth boundary; dark brown (10YR 3/4) gravelly silty clay; medium, moderate blocky structure; friable (moist); common gravels 2-3 cm in diameter, increasing with depth; abundant carbonate coatings and filaments; abundant snail shell fragments; contains prehistoric artifacts. Akb3 horizon. (90-100 cm thick)
V	200 cm	Bedrock.

ROCKSHELTER

The edge of the Cretaceous-age escarpment (Edwards Limestone) forms the southern boundary of 41WM1183, and inset into the escarpment for a distance of about 10 m is a rockshelter. At present the mouth of the rockshelter is slightly over 1 meter in height. At its deepest point, it extends inwards about 2 m (Figure 1). There are relic resurgent points in the back wall of the rockshelter which extend 2-3 meters further, and which may connect to a larger karst feature. The relic resurgent points represent the locations of springs which once exited the wall of the shelter. The talus in front of the rockshelter appears to be about 2 meters above the surface of the Q-2 Terrace.

Figure 1
Rockshelter, 41WM1183

Although the subsurface deposits within the talus were not examined, Trench 6, located less that 20 m away, contained stratified cultural deposits to a depth of 2 m, including an *in situ* hearth (Feature 2) at about 60 cmbs (Figure 2).

INTERPRETATIONS

Site 41WM1183 is a stratified prehistoric site located along the upper reaches of Brushy Creek. The site is primarily buried in Holocene alluvial deposits of the Q-2 terrace of Brushy Creek as defined by Collins and Mear (1998) from work at the Wilson-Leonard site. Colluvially transported sediments and limestone cobbles and gravels from the adjacent escarpment are also present.

Two typical profiles were recorded for the six trenches excavated at the site. The differences between them reflects the positions of the trenches on the landscape and the nature of the depositional forces responsible for the deposits there, with trenches 1-5 being in areas predominantly influenced by alluvial deposition, while Trench 6, placed nearer the escarpment, also contained material eroded, transported and re-deposited from upslope.

The typical soil horizon sequence observed in trenches 2-5 was Ak-Akb-Bk. The Ak horizon consisted of a very dark grayish brown clay, and appears to post dates the prehistoric occupations at the site. It is underlain by one or more buried A horizons (Akb), which consisted of a very dark grayish brown or dark brown clay loam. Two prehistoric stone-lined hearth features and numerous artifacts were encountered in this horizon, at depths of about 30-60 cmbs. The Abk horizon is underlain by a sequence of one or more Bkb horizons, which also contained abundant prehistoric artifacts, including an Angostura-like point from approximately 150 cmbs (Trench 1), and a Martindale point from about 115 cmbs (Trench 2).

The stratigraphic position of an Angostura-like dart point suggests that the oldest cultural deposits date to the late Paleoindian Period to Early Archaic in age. These occur in the lower Bkb horizons. The Martindale point was found somewhat higher in the stratigraphic column, and is of Early to Middle Archaic age. While no absolute age has yet been obtained from the two hearth features, their stratigraphic position suggests they are younger, perhaps late Archaic or Late Prehistoric in age.

The stratigraphic sequence observed in Trench 6 was Ak-Akb1-Akb2-Akb3-R (bedrock).

The rockshelter present at the site was not investigated during the geoarcheological investigations. However, Trench 6 was excavated within 20 m of the talus slope, and encountered numerous prehistoric artifacts and a buried hearth feature. Should additional work be conducted at 41WM1183, it is recommended that the subsurface deposits present in the talus slope be investigated.

Appendix B

Lithic Artifact Analysis

Appendix B Table 1: Lithic Debitage Analysis

Lot No.	Trench	Unit	Level	Depth (cmbs)	No. of Specimens	Raw Material	Form	Size Grade	Cortex Percent	Thermal Alteration	Color Change	Increased Luster	Fracture/ Potliding	Comments
11		1	5B	45-50	1	chert	flake fragment	1-inch	0%	not observed				
11		1	5B	45-50	1	chert	flake fragment	1/4-inch	0%	not observed				
15		1	9	80-90	1	chert	complete flake	1-inch	0%	not observed				
15		1	9	80-90	1	chert	complete flake	1-inch	51-75%	not observed				
15		1	9	80-90	1	chert	flake fragment	3/4-inch	0%	not observed				
15		1	9	80-90	1	chert	complete flake	3/4-inch	1-25%	not observed				
15		1	9	80-90	1	chert	flake fragment	1/2-inch	0%	not observed				
15		1	9	80-90	1	chert	flake fragment	1/4-inch	76-100%	not observed				
15		1	9	80-90	1	chert	broken flake	1/4-inch	1-25%	not observed				
15		1	9	80-90	2	chert	flake fragment	1/4-inch	0%	not observed				
15		1	9	80-90	1	chert	flake fragment	<1/4-inch	0%	not observed				
24	1			120-200	1	chert	complete flake	1-inch	1-25%	not observed				
24	1			120-200	1	chert	flake fragment	3/4-inch	26-50%	not observed				
24	1			120-200	4	chert	flake fragment	3/4-inch	0%	not observed				
24	1			120-200	1	chert	flake fragment	1/2-inch	1-25%	not observed				
24	1			120-200	3	chert	complete flake	1/2-inch	0%	not observed				

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Lot No.	Trench	Unit	Level	Depth (cmbs)	No. of Specimens	Raw Material	Form	Size Grade	Cortex Percent	Thermal Alteration	Color Change	Increased Luster	Fracture/ Potliding	Comments
24	1			120-200	4	chert	broken flake	1/2-inch	0%	not observed				
24	1			120-200	1	chert	flake fragment	1/2-inch	0%	not observed				
24	1			120-200	1	chert	complete flake	1/4-inch	0%	not observed				
24	1			120-200	5	chert	flake fragment	1/4-inch	0%	not observed				
24	1			120-200	3	chert	flake fragment	<1/4-inch	0%	not observed				
24	1			120-200	2	chert	debris	1/4-inch	0%	not observed				
12		1	6	50-60	1	chert	debris	1-inch	51-75%	not observed				
12		1	6	50-60	1	chert	complete flake	3/4-inch	76-100%	not observed				
12		1	6	50-60	1	chert	complete flake	1/2-inch	51-75%	not observed				
12		1	6	50-60	1	chert	flake fragment	1/2-inch	0%	not observed				
12		1	6	50-60	1	chert	debris	1/2-inch	0%	not observed				
12		1	6	50-60	2	chert	flake fragment	1/4-inch	1-25%	not observed				
12		1	6	50-60	1	chert	complete flake	1/4-inch	0%	not observed				
12		1	6	50-60	1	chert	broken flake	1/4-inch	0%	not observed				
12		1	6	50-60	1	chert	flake fragment	1/4-inch	0%	not observed				
25	2			100-150	2	chert	complete flake	1-inch	0%	not observed				
25	2			100-150	2	chert	broken flake	1-inch	0%	not observed				
25	2			100-150	2	chert	flake fragment	1-inch	0%	not observed				

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Lot No.	Trench	Unit	Level	Depth (cmbs)	No. of Specimens	Raw Material	Form	Size Grade	Cortex Percent	Thermal Alteration	Color Change	Increased Luster	Fracture/ Potliding	Comments
25	2			100-150	1	chert	complete flake	3/4-inch	0%	not observed				
25	2			100-150	4	chert	broken flake	1/4-inch	0%	not observed				
23	4			60-200	1	chert	complete flake	1-inch	76-100%	observed	no	no	no	
23	4			60-200	1	chert	complete flake	1-inch	1-25%	observed	no	no	no	
23	4			60-200	1	chert	broken flake	1-inch	0%	not observed				
23	4			60-200	2	chert	flake fragment	1-inch	0%	not observed				
23	4			60-200	1	chert	complete flake	3/4-inch	76-100%	not observed				
23	4			60-200	1	chert	complete flake	3/4-inch	1-25%	not observed				
23	4			60-200	1	chert	complete flake	3/4-inch	0%	not observed				
23	4			60-200	1	chert	debris	3/4-inch	0%	observed	yes	no	yes	
23	4			60-200	1	chert	flake fragment	1/2-inch	0%	not observed				
23	4			60-200	1	chert	broken flake	1/2-inch	0%	observed	yes	no	yes	
23	4			60-200	1	chert	broken flake	1/4-inch	0%	not observed				
23	4			60-200	1	chert	flake fragment	1/4-inch	0%	not observed				
8		1	5	40-45	1	chert	broken flake	1/4-inch	0%	not observed				
22		1	14	130-140	1	chert	flake fragment	1-inch	0%	not observed				
22		1	14	130-140	2	chert	complete flake	3/4-inch	0%	not observed				

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Lot No.	Trench	Unit	Level	Depth (cmbs)	No. of Specimens	Raw Material	Form	Size Grade	Cortex Percent	Thermal Alteration	Color Change	Increased Luster	Fracture/ Potliding	Comments
22		1	14	130-140	1	chert	debris	3/4-inch	26-50%	not observed				
22		1	14	130-140	2	chert	flake fragment	1/2-inch	0%	not observed				
22		1	14	130-140	1	chert	flake fragment	1/2-inch	0%	observed	yes	yes	no	
22		1	14	130-140	3	chert	complete flake	1/4-inch	0%	not observed				
22		1	14	130-140	1	chert	broken flake	1/4-inch	0%	observed	no	no	yes	
22		1	14	130-140	2	chert	flake fragment	1/4-inch	0%	observed	no	no	yes	
22		1	14	130-140	1	chert	complete flake	<1/4-inch	0%	not observed				
22		1	14	130-140	2	chert	flake fragment	<1/4-inch	0%	not observed				
14		1	8	70-80	1	chert	broken flake	1/2-inch	0%	not observed				
14		1	8	70-80	1	chert	complete flake	1/4-inch	0%	not observed				
18		1	12	110-120	1	chert	flake fragment	1-inch	0%	observed	yes	no	no	
18		1	12	110-120	3	chert	flake fragment	1/2-inch	0%	not observed				
18		1	12	110-120	2	chert	debris	1/2-inch	76-100%	not observed				
18		1	12	110-120	3	chert	broken flake	1/4-inch	0%	not observed				
18		1	12	110-120	4	chert	flake fragment	1/4-inch	0%	not observed				
18		1	12	110-120	4	chert	debris	1/4-inch	76-100%	not observed				
18		1	12	110-120	2	chert	debris	<1/4-inch	0%	not observed				
18		1	12	110-120	2	chert	debris	<1/4-inch	0%	observed	yes	no	yes	

Appendix B Table 1: Lithic Debitage Analysis

Lot No.	Trench	Unit	Level	Depth (cmbs)	No. of Specimens	Raw Material	Form	Size Grade	Cortex Percent	Thermal Alteration	Color Change	Increased Luster	Fracture/ Potliding	Comments
19		1	13	120-130	1	chert	flake fragment	1-inch	0%	observed	yes	no	yes	
19		1	13	120-130	1	chert	debris	3/4-inch	1-25%	not observed				
19		1	13	120-130	2	chert	complete flake	3/4-inch	0%	not observed				
19		1	13	120-130	2	chert	flake fragment	1/2-inch	0%	observed	yes	yes	no	
19		1	13	120-130	3	chert	flake fragment	1/4-inch	0%	not observed				
19		1	13	120-130	2	chert	flake fragment	1/4-inch	0%	observed	yes	no	yes	
19		1	13	120-130	1	chert	complete flake	<1/4-inch	0%	not observed				
19		1	13	120-130	3	chert	flake fragment	<1/4-inch	0%	not observed				
19		1	13	120-130	4	chert	debris	<1/4-inch	76-100%	not observed				
28		1	17	160-170	1	chert	broken flake	1/4-inch	0%	not observed				
28		1	17	160-170	2	chert	flake fragment	1/4-inch	0%	not observed				
28		1	17	160-170	1	chert	debris	1/4-inch	0%	observed	no	no	yes	
16		1	10	90-100	2	chert	flake fragment	1/2-inch	0%	observed	yes	no	yes	
16		1	10	90-100	2	chert	complete flake	1/4-inch	1-25%	not observed				
16		1	10	90-100	1	chert	broken flake	1/4-inch	26-50%	not observed				
16		1	10	90-100	5	chert	flake fragment	1/4-inch	0%	not observed				
17		1	11	100-110	1	chert	complete flake	1-inch	76-100%	observed	yes	yes	no	

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Lot No.	Trench	Unit	Level	Depth (cmbs)	No. of Specimens	Raw Material	Form	Size Grade	Cortex Percent	Thermal Alteration	Color Change	Increased Luster	Fracture/ Potliding	Comments
17		1	11	100-110	1	chert	complete flake	3/4-inch	1-25%	not observed				
17		1	11	100-110	1	chert	flake fragment	3/4-inch	26-50%	observed	yes	yes	no	
17		1	11	100-110	1	chert	flake fragment	3/4-inch	0%	observed	yes	yes	no	
17		1	11	100-110	1	chert	complete flake	3/4-inch	0%	observed	yes	yes	yes	
17		1	11	100-110	5	chert	complete flake	1/4-inch	0%	not observed				
17		1	11	100-110	4	chert	flake fragment	1/4-inch	0%	not observed				
26		1	15	140-150	1	chert	flake fragment	1/2-inch	0%	observed	yes	no	no	
26		1	15	140-150	2	chert	flake fragment	1/4-inch	0%	not observed				
26		1	15	140-150	1	chert	broken flake	1/4-inch	0%	not observed				
26		1	15	140-150	2	chert	flake fragment	1/4-inch	0%	not observed				
26		1	15	140-150	3	chert	debris	1/4-inch	na	observed	yes	no	yes	
26		1	15	140-150	2	chert	broken flake	<1/4-inch	0%	observed	yes	no	no	
26		1	15	140-150	3	chert	flake fragment	<1/4-inch	0%	observed	yes	no	yes	
13		1	7	60-70	1	chert	debris	3/4-inch	na	not observed				
13		1	7	60-70	4	chert	complete flake	1/4-inch	0%	observed	yes	no	yes	
13		1	7	60-70	1	chert	broken flake	1/4-inch	0%	observed	no	no	yes	
20	5			50	2	chert	flake fragment	1-inch	76-100%	not observed				Ab-horizon

Appendix B Table 1: Lithic Debitage Analysis

Lot No.	Trench	Unit	Level	Depth (cmbs)	No. of Specimens	Raw Material	Form	Size Grade	Cortex Percent	Thermal Alteration	Color Change	Increased Luster	Fracture/ Potliding	Comments
20	5			50	1	chert	broken flake	1/2-inch	0%	not observed				
20	5			50	1	chert	flake fragment	1/2-inch	0%	observed	yes	yes	yes	
27		1	16	150-160	1	chert	complete flake	1-inch	1-25%	not observed				
27		1	16	150-160	1	chert	broken flake	3/4-inch	0%	observed	yes	no	yes	
27		1	16	150-160	2	chert	flake fragment	1/2-inch	0%	not observed				
27		1	16	150-160	1	chert	broken flake	1/4-inch	0%	observed	yes	yes	yes	
27		1	16	150-160	2	chert	flake fragment	1/4-inch	0%	observed	yes	no	yes	
27		1	16	150-160	3	chert	debris	1/4-inch	76-100%	not observed				
27		1	16	150-160	1	chert	complete flake	<1/4-inch	0%	not observed				
27		1	16	150-160	1	chert	flake fragment	<1/4-inch	0%	not observed				
31	6			0-65	1	chert	flake fragment	3/4-inch	0%	observed	no	no	yes	
31	6			0-65	1	chert	flake fragment	1/2-inch	0%	observed	yes	no	yes	
31	6			0-65	1	chert	complete flake	1/2-inch	0%	not observed				
31	6			0-65	1	chert	flake fragment	1/4-inch	0%	not observed				
32	6			65-150	1	chert	complete flake	1-inch	0%	observed	yes	yes	no	
32	6			65-150	2	chert	complete flake	1-inch	0%	not observed				
32	6			65-150	2	chert	complete flake	1-inch	26-50%	not observed				

Appendix B Table 1: Lithic Debitage Analysis

Lot No.	Trench	Unit	Level	Depth (cmbs)	No. of Specimens	Raw Material	Form	Size Grade	Cortex Percent	Thermal Alteration	Color Change	Increased Luster	Fracture/ Potliding	Comments
32	6			65-150	1	chert	flake fragment	1-inch	1-25%	not observed				
32	6			65-150	4	chert	debris	1-inch	na	not observed				
32	6			65-150	2	chert	complete flake	3/4-inch	0%	observed	yes	yes	no	
32	6			65-150	1	chert	broken flake	3/4-inch	0%	observed	yes	yes	no	
32	6			65-150	1	chert	flake fragment	3/4-inch	0%	observed	yes	yes	no	
32	6			65-150	1	chert	debris	3/4-inch	0%	observed	yes	yes	yes	
32	6			65-150	3	chert	debris	3/4-inch	na	not observed				
32	6			65-150	4	chert	complete flake	1/2-inch	0%	observed	yes	yes	no	
32	6			65-150	1	chert	flake fragment	1/2-inch	26-50%	observed	yes	yes	yes	
32	6			65-150	4	chert	flake fragment	1/2-inch	0%	observed	yes	yes	yes	
32	6			65-150	4	chert	debris	1/2-inch	na	observed	yes	yes	yes	
32	6			65-150	1	chert	complete flake	1/4-inch	0%	observed	yes	yes	yes	
32	6			65-150	2	chert	broken flake	1/4-inch	0%	observed	yes	yes	no	
32	6			65-150	1	chert	broken flake	1/4-inch	0%	observed	yes	yes	yes	
32	6			65-150	2	chert	complete flake	1/4-inch	26-50%	observed	yes	yes	no	
32	6			65-150	5	chert	debris	1/4-inch	na	observed	yes	no	yes	
32	6			65-150	6	chert	flake fragment	1/4-inch	0%	observed	yes	yes	yes	
2	1		3	20-30	1	chert	flake fragment	1/4-inch	0%	not observed				

Appendix B Table 1: Lithic Debitage Analysis

Lot No.	Trench	Unit	Level	Depth (cmbs)	No. of Specimens	Raw Material	Form	Size Grade	Cortex Percent	Thermal Alteration	Color Change	Increased Luster	Fracture/ Potliding	Comments
29	6			General collection	2	chert	complete flake	1-inch	0%	not observed				
29	6			General collection	1	chert	flake fragment	1-inch	0%	not observed				
29	6			General collection	1	chert	debris	1-inch	51-75%	observed	yes	no	no	
29	6			General collection	1	chert	complete flake	3/4-inch	1-25%	not observed				
29	6			General collection	1	chert	flake fragment	3/4-inch	1-25%	not observed				
29	6			General collection	1	chert	flake fragment	3/4-inch	76-100%	observed	yes	no	no	
29	6			General collection	2	chert	complete flake	3/4-inch	0%	not observed				
29	6			General collection	1	chert	debris	3/4-inch	0%	observed	no	yes	yes	
29	6			General collection	1	chert	debris	1/2-inch	0%	observed	yes	no	yes	
21	5		grave 1 lens	80-110	1	chert	flake fragment	1-inch	0%	observed	yes	yes	no	
21	5		grave 1 lens	80-110	1	chert	complete flake	1-inch	1-25%	observed	yes	yes	no	
33	6			150+	1	chert	broken flake	1-inch	76-100%	observed	yes	yes	no	

Appendix B Table 1: Lithic Debitage Analysis

Lot No.	Trench	Unit	Level	Depth (cmbs)	No. of Specimens	Raw Material	Form	Size Grade	Cortex Percent	Thermal Alteration	Color Change	Increased Luster	Fracture/ Potliding	Comments
33	6			150+	2	chert	flake fragment	1-inch	76-100%	observed	yes	yes	no	
33	6			150+	1	chert	complete flake	1-inch	1-25%	not observed				
33	6			150+	1	chert	complete flake	1-inch	0%	not observed				
33	6			150+	1	chert	broken flake	1-inch	0%	not observed				
33	6			150+	1	chert	flake fragment	1-inch	0%	not observed				
33	6			150+	2	chert	flake fragment	1-inch	0%	observed	yes	yes	no	
33	6			150+	2	chert	debris	1-inch	na	observed	yes	yes	yes	
33	6			150+	1	chert	complete flake	3/4-inch	76-100%	not observed				
33	6			150+	1	chert	complete flake	3/4-inch	1-25%	observed	yes	yes	no	
33	6			150+	1	chert	broken flake	3/4-inch	0%	observed	yes	yes	no	
33	6			150+	2	chert	flake fragment	3/4-inch	0%	not observed				
33	6			150+	3	chert	complete flake	1/2-inch	0%	not observed				
33	6			150+	1	chert	broken flake	1/2-inch	0%	observed	yes	yes	yes	
33	6			150+	2	chert	complete flake	1/2-inch	26-50%	observed	yes	yes	no	
33	6			150+	1	chert	flake fragment	1/2-inch	0%	not observed				
33	6			150+	2	chert	flake fragment	1/2-inch	0%	observed	yes	yes	no	
33	6			150+	2	chert	broken flake	1/4-inch	0%	observed	yes	yes	no	

Appendix B Table 1: Lithic Debitage Analysis

Lot No.	Trench	Unit	Level	Depth (cmbs)	No. of Specimens	Raw Material	Form	Size Grade	Cortex Percent	Thermal Alteration	Color Change	Increased Luster	Fracture/ Potliding	Comments
33	6			150+	1	chert	complete flake	1/4-inch	0%	not observed				
33	6			150+	1	chert	flake fragment	1/4-inch	1-25%	observed	yes	yes	no	
33	6			150+	4	chert	flake fragment	1/4-inch	0%	observed	yes	yes	no	
30	1			146	1	chert	complete flake	1-inch	1-25%	not observed				from SE corner

Appendix B Table 2: Core Analysis

Lot No.	Trench No.	Depth (cmbs)	No. of Spec.	Raw Material	Reduction	Source Material Size	Size Grade	Cortex Percent	Thermal Alteration	Weight (g)
32-2	6	65-150	1	Chert	multi-directional	Cobble	3-inch	0%	Observed	85.2
32-1	6	65-150	1	Chert	multi-directional	Cobble	3-inch	1-25%	Not observed	127.7
32-3	6	65-150	1	Chert	multi-directional	Cobble	3-inch	51-75%	Not observed	280.0
21-1	5	80-110	1	Chert	multi-directional	Cobble	4-inch	0%	Not observed	260.0
33-2	6	150-200	1	Chert	multi-directional	Cobble	3-inch	1-25%	Not observed	82.8

Appendix B Table 3: Simple Detachment-based Tools

Lot No.	FS No.	Trench	Depth (cmbs)	Raw Material	Class	Subclass	Type (Function)	Alteration 1 Location	Alteration 1 Length (mm)	Alteration 2 Location	Alteration 2 Length (mm)	Alteration 3 Location	Alteration 3 Length (mm)	Alteration Utilization Material	Thermal Alteration	Form	Size Grade	Cortex Percent	Weight (g)	Length (mm)	Width (mm)	Thickness (mm)
20	20	5	50	Chert	Flake	Utilized	Gouging, Spokeshave	Distal Edge	27 5	Lateral Edge	13 8	na	na	Medium Hard	Observed	Broken Flake	1-inch	26-50%	9 9	41 4	30 2	9 1
29	29	6	General Collection	Chert	Flake	Utilized	Gouging, Planning	Distal Edge	26 4	Lateral Edge	24	na	na	Medium Hard	Observed	Broken Flake	1-inch	51-75%	11 5	36 7	31 1	8 8
33-1	33	6	150-200	Chert	Flake	Utilized	Cutting	Lateral Edge	16 4	na	na	na	na	Medium Soft	Observed	Broken Flake	1-inch	0%	6 4	52 3	33 1	9 1

Appendix B: Table 4: Complex or Core Detachment-based Tool Analysis

Lot No.	Trench	Depth (cmbs)	Raw Material	Technology	Subgroup	Class	Subclass	Type	Subtype / Identity	Weight (g)	Length (mm)	Width (mm)	Thickness (mm)	Edge Angle (nearest 5° interval)
9	1	150-160	Chert	Chipped Stone	Simple Detachment-Based	Biface	Formal	Projectile Point	Angustura Dart Point	14.7	64.4	29.2	8.6	55
10	2	110-120	Chert	Chipped Stone	Simple Detachment-Based	Biface	Formal	Projectile Point	Martindale Dart Point	5.6	40.7	22.9	7.0	65
21-2	5	80-110	Chert	Chipped Stone	Simple Detachment-Based	Non-biface	Informal	Gouge/ Scrapper	Not Applicable	141.5	90.0	63.4	3.6	70
23	4	60-200	Chert	Chipped Stone	Simple Detachment-Based	Biface	Informal	Chopper	Not Applicable	23.2	33.0	49.4	12.6	55
32-4	6	65-150	Chert	Chipped Stone	Simple Detachment-Based	Biface	Formal	Chopper	Not Applicable	44.2	0.0	50.2	12.2	45
33-3	6	150-200	Chert	Chipped Stone	Core-Based	Biface	Informal	Chopper	Not Applicable	580	163.4	84.9	43.4	65
33-4	6	150-200	Chert	Chipped Stone	Core-Based	Biface	Informal	Scrapper	Not Applicable	76	84.3	48.3	22.6	60
33-5	6	150-200	Chert	Chipped Stone	Complex Detachment Based	Biface	Informal	Knife	Not Applicable	17.7	76.8	34.5	9.2	40
33-6	6	150-200	Chert	Chipped Stone	Complex Detachment Based	Biface	Formal	Projectile Point Preform	Untyped Dart Point	16.6	40.3	56.2	8.4	60

Appendix B: Table 4: Complex or Core Detachment-based Tool Analysis (Continued)

Stage	Portion	Failure/ Discard	Alteration	Edge Morphology	Flake Scar Pattern	Edge Construction Type	Proximal Edge Grinding	Use Derived Flaking Attrition	Crushing / Smoothing	Polish	Etching / Pitting	Hafting Evidence	Point Class
4-Final Stage	Complete	NAP	None Observed	Convex	Collateral	Bifacial-bilateral	Not Observed	Not present	Not present	Not present	Not present	Not Observed	Lancelate
5-Rejuvenated	Complete	NAP	None Observed	Recurved	Collateral	Bifacial-distal-bilateral	Observed	Not present	Bilateral	Not present	Not present	Not Observed	Triangular
4-Final Stage		NAP	None Observed	Convex, Straight	Random	Unifacial-distal unilateral	Not Observed	Unilateral	Unilateral	Not present	Not present	Not Observed	Not Applicable
2-Blank	Distal	Hinge	None Observed	Convex	Random	Bifacial-distal-bilateral	Not Observed	Not present	Not present	Not present	Not present	Not Observed	Not Applicable
4-Final Stage	Lateral edge missing	Snap/End Shock	None Observed	Convex	Random	Bifacial-distal-bilateral	Not Observed	Not present	Distal	Not present	Not present	Not Observed	Not Applicable
4-Final Stage	Complete	NAP	Carbonate Build-up	Very Convex	Random	Bifacial-distal	Not Observed	Not present	Distal	Not present	Not present	Not Observed	Not Applicable
2-Blank	Proximal-meidal	Snap/End Shock	Carbonate Build-up	Convex	Random	Bilateral	Not Observed	Not present	Bilateral	Not present	Not present	Not Observed	Not Applicable
4-Final Stage	Proximal-medial	Overshot	None Observed	Convex	Random	Bifacial-bilateral	Not Observed	Bifacial-bilateral	Bilateral, facial Smoothing	Not present	Not present	Not Observed	Not Applicable
3-Preform	Distal-medial	Snap/End Shock	Carbonate Build-up	Convex	Random	Bifacial-distal	Not Observed	Not present	Not present	Not present	Not present	Not Observed	Stemmed

Appendix B Table 5: Ground Stone Analysis

Lot No.	Trench No.	Depth (cmbs)	Weight (g)	Length (cm)	Width (cm)	Thickness (cm)	Raw Material	Classification	Form	Completeness	Cross-Section	Intentional Shaping	Grinding	Polish	Pecking	Pitting	Groove	Notch	Striations	Wear Location
31	6	0-65	280	65	61 4	45 1	Chert	Hammerstone	Ovoid	Complete	Oval	Not observed	Not observed	Not observed	Yes	Yes	Not observed	Not observed	Not observed	Small end

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