

A RECONNAISSANCE OF ELECTRICAL
TRANSMISSION LINE RIGHTS-OF-WAY
IN
BANDERA AND KERR COUNTIES, TEXAS

Joseph H. Labadie

Center for Archaeological Research
The University of Texas at San Antonio
Archaeological Survey Report, No. 164

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ABSTRACT

During January 1986, the Center for Archaeological Research, The University of Texas at San Antonio conducted a reconnaissance level survey for the Bandera Electric Cooperative, Inc. Approximately 98 km of electrical transmission rights-of-way were surveyed. Nine archaeological sites were identified. None of the sites were found to be potentially eligible for nomination to the National Register of Historic Places. Construction activities in the vicinity of these sites will not adversely impact any of the nine sites.

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INTRODUCTION

During January 21-24 and January 28, 1986, archaeologists from the Center for Archaeological Research, The University of Texas at San Antonio (CAR-UTSA), conducted a pedestrian and vehicular reconnaissance level survey of electrical transmission line rights-of-way in rural portions of Bandera and Kerr Counties, Texas. Recorded sites were shovel tested for subsurface deposits in areas of sufficient soil depth.

The purpose of the survey was to identify and record National Register potentially eligible properties, to assess the project's impact to previously and newly recorded archaeological sites, and to update conditions and verify locations of the sites within the transmission line rights-of-way. Specifically targeted areas for survey were recommended by the Texas Historical Commission (letter dated October 31, 1985, Herrington to Vander Zee).

The survey was done under contract between the Center for Archaeological Research, The University of Texas at San Antonio and the Bandera Electric Cooperative, Inc. (letters dated November 11, 1985, and January 20, 1986). The field work was conducted by CAR staff archaeologists Joseph Labadie and Bruce Ellis, under the supervision of Dr. Thomas R. Hester, Center director, and Jack Eaton, associate director.

MANAGEMENT SUMMARY

The area of survey consisted of ca. 98 km of electrical transmission line rights-of-way (20 feet in width) that are to be upgraded by the Bandera Electric Cooperative, Inc. (BEC), during 1986 and 1987. System upgrading is generally limited to above ground modifications to existing lines, such as insulator changes and line changes. The BEC work plan includes the addition of ca. 9 km of new service line.

The Texas Historical Commission (THC) had reviewed and advised the BEC that there were over 40 archaeological sites in the areas where the project improvements would take place. Research by the CAR-UTSA prior to the commencement of the field survey established this figure to be an understatement. Research conducted at the Texas Archeological Research Laboratory (TARL) in Austin, Texas, provided site location information indicating that there were over 600 sites recorded in the general project area. After plotting the Universal Transverse Mercator (UTM) grid location of these previously recorded sites on topographic maps provided by the BEC, 59 sites appeared to be directly on or very near existing or proposed transmission line rights-of way (Appendix I). Although the THC had reviewed the same quad sheets and marked in yellow the areas they wanted surveyed, their map did not include all the areas where there are archaeological sites or potential sites. Evidently, the THC had limited information available at the time of their review.

A presurvey planning meeting took place on January 17, 1986, at the BEC offices in Bandera, Texas. Present were Joseph Labadie (CAR-UTSA) and Raymond Batto (BEC). The planning meeting was designed to discuss field

methods in light of the number of known archaeological sites in the survey area and to establish survey transect priorities. Mr. Batto explained that the 1986 and 1987 work plan included all modifications to existing lines and the locations for proposed transmission lines to service new customers.

Project modifications to existing lines, in all cases, would be limited to above ground modifications. Environmental impact within the right-of-way would be limited to vehicular traffic; no subsurface disturbance was anticipated. In areas where new transmission lines are proposed, environmental impact is to be restricted to the 20-foot-wide right-of-way. The new right-of-way will be cleared of all brush and trees by the use of chain saws; no heavy equipment, such as bulldozers, will be used as part of the brush-clearing activities.

The engineering design for the proposed transmission lines allows for a certain amount of latitude in the spacing between poles. New service lines will use 6-inch diameter wooden utility poles spaced at intervals between 300-500 feet depending on topography. The BEC has a general policy of site avoidance via pole spacing wherever possible.

The 1986 and 1987 BEC work plan can be broken down into 22 separate numbered projects. The BEC provided a detailed set of maps with the location of each project number (USGS 7.5' quadrangle maps: Bandera, Center Point, Echo Hills, Fall Creek, Pipe Creek, and Tarpley Pass). Individual BEC project numbers were established according to Rural Electrification Administration guidelines which specify the type of modifications to each right-of-way, such as upgrading, new line, or insulator changes (see Table 1).

TABLE 1. RURAL ELECTRIFICATION ADMINISTRATION GUIDELINES FOR PROJECT NUMBERS

Series	Type of Modification
200	Tie-line Construction
300	Conversion and Line Changes
600	Voltage Increase (7200 to 14000 volts)
Example: Project 205 would mean the 5th tie-line project in the BEC 1986 and 1987 work plan.	

RESEARCH DESIGN

The field survey for the BEC rights-of-way was to be conducted by two field archaeologists accompanied by Mr. Raymond Batto, who would locate the rights-of-way in the field. The reconnaissance level survey consisted of a detailed ground surface examination in order to identify archaeological sites. All field methods employed during survey conform to the Council of Texas Archeologists (CTA 1981) guidelines for field investigations and standard archaeological methods (Hester, Heizer, and Graham 1976).

The field survey utilized controlled surface collections of cultural materials to provide data for in the field site assessments using the criteria for potential eligibility to the National Register of Historic Places as outlined in 36CFR60.6. All unrecorded sites identified within the 20-foot-wide rights-of-way were to be mapped, photographed, plotted on 7.5' USGS topographic maps, and recorded on the six-page Texas Archeological Research Laboratory (TARL) site survey forms. All collections recovered during the survey were to be accessioned, catalogued, analyzed, and sorted at the Center for Archeological Research, The University of Texas at San Antonio (CAR-UTSA). Photographs, field notes, and field maps are also on file at the CAR-UTSA.

Presurvey research conducted by the THC (letter dated October 31, 1985, Herrington to Vander Zee) and the CAR was combined to form a predictive model of site distribution throughout the project area. Previously recorded site data were combined with environmental data in an effort to identify survey transect areas with a high archaeological potential for surface or subsurface prehistoric and historic sites. Once an archaeological site was located during the field survey, a preliminary assessment would be made of the cultural resources found, as well as any recommendations regarding further on-site work. Appendix II presents the presurvey evaluation of the entire project area.

PREVIOUS RESEARCH

The Bandera Electric Cooperative, Inc., project area covers portions of six different 7.5' USGS topographic maps (Bandera, Center Point, Echo Hills, Fall Creek, Pipe Creek, and Tarpley Pass; see Fig. 1). Much of this area is virtually unknown archaeologically, even though over 600 prehistoric sites have been recorded at the TARL for this six-quad-map area in the Texas Hill Country. Much of the previous research in the project area has focused on the major drainages (i.e., Medina River) and watersheds (i.e., Turtle Creek watershed).

The largest single survey to date in the project area was conducted during the 1971 and 1972 Texas Archeological Society (TAS) summer field schools (Skinner 1971a, 1971b, 1972a). The TAS field schools concentrated their survey work on three 10-square-mile areas of the Turtle Creek watershed (ca. 40% of the entire watershed area; Skinner 1972b). During this two-season survey, 165 prehistoric sites were located and recorded (Richmond, Richmond, and Greer 1983:146). These sites were assigned temporary site numbers using the Southern Methodist University (SMU) recording system (e.g., X 41 KR 1). Sites in Texas are normally assigned sequential numbers within each county by use of the Smithsonian Trinomial System (e.g., 41 KR 1). The only obvious difference between the two systems appears to be the "X" prefix. In reality, the two systems represent two totally different sets of site data within the same geographic area. There are roughly 75 sites registered in Bandera County using the Smithsonian Trinomial System; there are over 400 sites registered at TARL which use SMU site numbers. TARL has begun a conversion of all SMU site numbers in an attempt to accurately document all known sites under a single system. Previously recorded sites (SMU system), both within

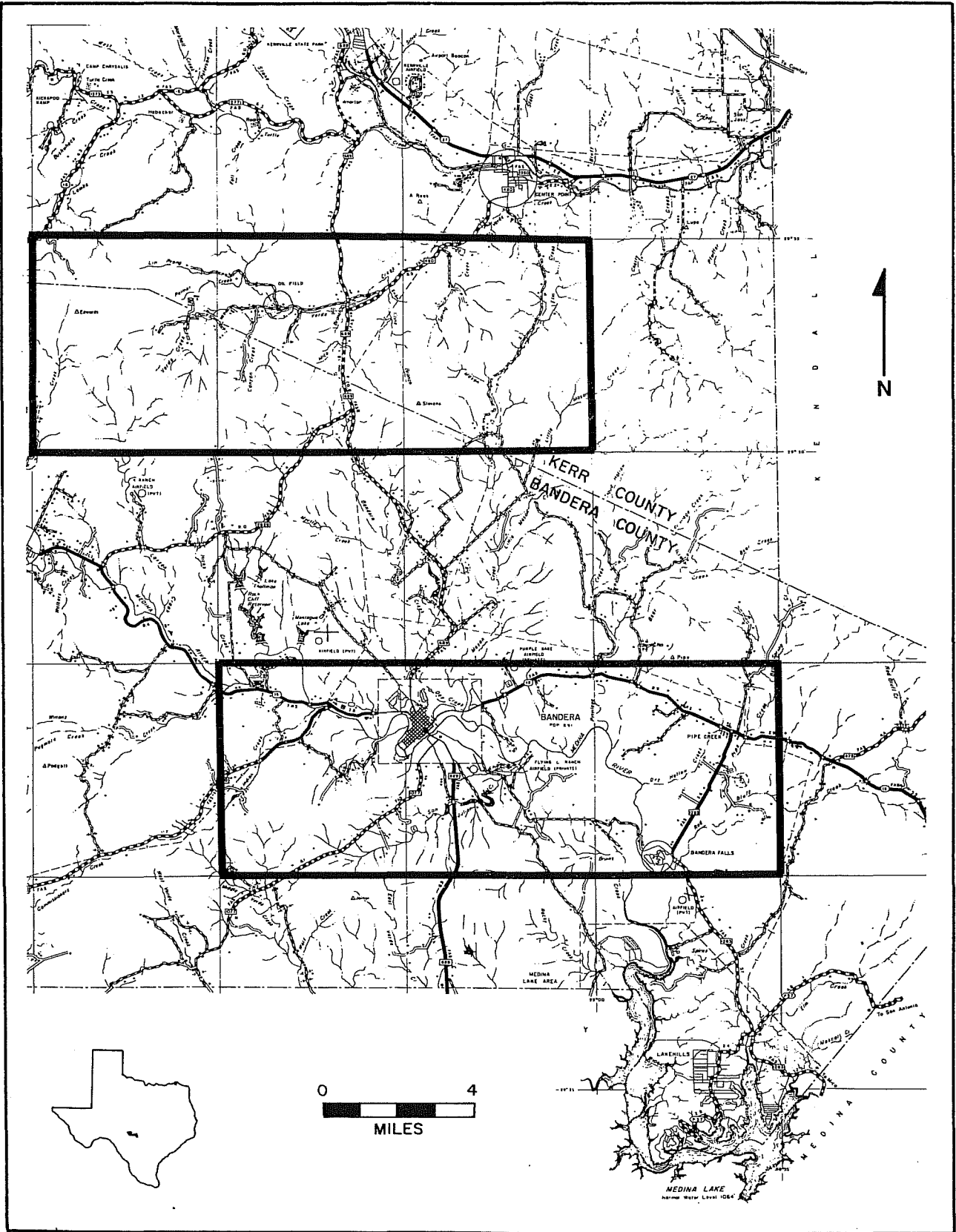


Figure 1. Location of Project Area.

and outside the BEC rights-of-way, were not recorded again or updated on State of Texas site survey forms.

Excavation by TAS members was conducted at three different sites: site X 41 KR 1 (now converted to TARL number, 41 KR 1; Skinner 1979a), site X 41 KR 166 (Skinner 1979b), and X 41 KR 116 (Skinner 1979c). A nearby site, 41 KR 10, has also been excavated (Beadles 1971a, 1971b). Dates for sites were estimated from the Paleo-Indian to the Late Prehistoric period (Prewitt 1981:Fig. 4). Late Paleo-Indian occupation was indicated by **Plainview** and **Angostura** point types. In addition to period determinations, six activities were inferred from distributions and concentrations, discarded tools and features, such as hearths and burned rock mounds (Skinner 1974:24, 31). Table 2 presents comparative site-use data compiled from Skinner (1974).

Within the Turtle Creek watershed, there was a predominance of lithic workshops, and 63 burned rock mounds were recorded (Richmond, Richmond, and Greer 1983:147). Archaic occupation sites represent 80% of the recorded sites. Archaic and Late Prehistoric components were evident at 12 sites, and uncontaminated Late Prehistoric components were present at three sites. Based on this data, the occupation of the Turtle Creek watershed is considered basically Archaic (Skinner 1974:56-65).

Archaeological site distributional patterns throughout the project area show a general pattern of intensive terrace occupation combined with short-term upland occupation. Terrace occupation sites are typified by burned rock middens in association with large lithic scatters located along intermittent and spring-fed creek beds. These sites are usually deeply stratified and often occur as zones of overlapping sites. The identification of such sites can often be made without subsurface testing. Close inspection of erosional gullies, animal burrows, and around bases of large trees can often help to determine the areal extent of an unrecorded site. Upland occupation sites typically occur as isolated lithic scatters located on hilltops and slopes. Artifact assemblages are generally limited to surface lithic scatters with a noticeable lack of projectile points, hearth features, and burned rock middens. The majority of the upland sites (sites above 1800 feet mean sea level [MSL]) appear to have functioned in prehistoric times as lithic procurement areas and short-term special activity sites. The main campsite activities appear to have been restricted to terrace occupation sites during most of the prehistory of the project area.

ENVIRONMENTAL SETTING

The topography for the western portion of the Texas Hill Country is that of an old, well-drained limestone plateau where narrow ridges or small mesas of the original plateau remain. Elevations above sea level range from 1400 to 2400 feet MSL. The terrain is undulating to hilly; but some nearly level areas are located along streams and steep areas where different geologic formations come into contact. Geologic formations in Bandera County and portions of Kerr County are wholly within the Mesozoic (Soil Conservation Service 1977:45).

Geologic formations within the project area have influenced the kinds and locations of soils that have developed over time. As a general rule, geologic outcrops, such as the Trinity and Fredericksburg Formations, establish the parameters as to what soils to expect in a given area and in what pattern or association they might occur.

Most of the soils within the project area formed over limestone, and approximately 75% of the soils are shallow to very shallow in depth. Most of them have a clayey surface, but some that are on the plateau and near stream channels are loamy. Soils formed in gentle sloping areas are underlain by deposits of calcium carbonate caused by water moving through the soil and leaching the carbonates to lower layers. Formation of soils in steeper areas has been retarded by near continuous erosion. The soils within the project area range from young to old. The young soils, which have little soil horizon development, are along rivers and major drainages, and receive new sediment with each flood. Soils above the floodplains are generally older and have developed structure, and some carbonates have moved to lower horizons forming concretions, films, and threads. In upland areas, above 2000 feet MSL, soils have well-defined soil horizons and are among the oldest soil formations within the project area.

The location and distribution of floral communities within the project area are determined by two principal environmental factors: soil type and availability of water. To a lesser degree, altitudinal factors also influence what types of plants grow where. In general terms, floral communities within the project area can be divided into two major divisions, upland and lowland plant communities.

In the uplands and hillsides, soils are generally unconsolidated and without well-developed A and B soil horizons. Vegetation generally consists of juniper (cedar), black persimmon, elm, and several types of oak. Surface vegetation occurs in varying densities depending on soil depths and is generally limited to short grasses. A few isolated lechugilla, sotol, and saschusti plants (bear grass) were seen in rural portions of the survey and were usually limited to erosional gullies on the southern side of hills.

In lowland portions of the survey area, including broad valleys, floodplains, creeks, intermittent stream beds, and adjacent terraces, floral communities differ somewhat from the upland communities. Sycamore, poplar, hackberry, pecan, willow, mesquite, and Spanish oak are common. Surface vegetation is generally dense and consists of a variety of herbaceous plants, perennial forbs, and medium grasses. Subsurface soils are generally well consolidated and deeply stratified with well-defined soil profiles. Alluvial and colluvial deposition of soils from the uplands and slopes have combined to produce soils prime for agricultural activities in most lowland areas.

Lithic resources, which were exploited by prehistoric peoples, are generally limited to the uplands and hillsides. It was noted during the survey that chert cobbles occurred in the greatest densities at elevations between 1800-2000 feet MSL. Eroded cobbles, frequently concentrated in erosional gullies and creek beds, typically are fist sized and range in color from gray to brown. Crystalline and fossil inclusions seem to be fairly common in a large number of the broken cobbles; flakes from these cobbles are typically

TABLE 2. COMPARATIVE ANALYSIS OF SITE-USE DATA ON SIX ARCHAEOLOGICAL SITES IN BANDERA COUNTY, TEXAS

Site Number	Inferred Site-Use Activities
X 41 KR 191	lithic manufacturing station with at least two different occupation periods evidenced by the presence of different projectile point technologies
X 41 KR 184	possible hunting camp as evidenced by the lack of ground stone artifacts, abundance of lithic debris, and presence of a burned rock mound
X 41 KR 70	burned rock mound and surrounding living area are Archaic period based on surface artifacts
X 41 KR 201	lithic scatter terrace site represents occupation during two separate time periods
X 41 KR 128	short-term single occupation site of the Archaic period represented by Castroville and Marcos -like projectile points
X 41 KR 94	terrace site with two burned rock mounds and surrounding lithic scatter areas may represent a multiple occupation based on the presence of dart and arrow points

Note: Adapted from Richmond, Richmond, and Greer (1983:146).

semitranslucent. Sheet wash erosion tends to concentrate lithic resources in gullies and arroyos which have elevations under about 1800 MSL.

THE SURVEY

The presentation of the survey data is limited to a description of the previously undocumented and relocated sites identified in the field as being within the physical boundaries of the BEC rights-of-way. Previously recorded sites with UTM plottings on, or within 100 m of any survey transect, were relocated whenever possible. A complete list of these sites, by quad map and BEC project number, is presented in Appendix II.

The scope of this report limits the use of maps in the presentation of site data. The high cost of map preparation and reproduction is prohibitive for short survey reports. The use of site location maps in survey reports can be

useful to active researchers; but copies could fall into the hands of looters. Photographs and compass-and-pace field maps for all sites within the rights-of-way are on file at the Center for Archaeological Research, The University of Texas at San Antonio.

41 KR 231 (Fig. 2,a)

Site 41 KR 231 consists of a surface lithic scatter situated on an eroded hillside at an elevation of ca. 2010 feet MSL. The site has not been previously recorded by other surveys and was given a temporary field number of UTSA-CAR-1; the permanent TARL site number is 41 KR 231.

The main lithic scatter covers an area roughly 30 m long and extends at least 20 m either side of the 20-foot-wide BEC right-of-way. Ground surface visibility is good; surface vegetation is limited to patches of short grasses. Culturally modified materials are limited to tested chert cobbles, fist-sized and larger, and a few primary reduction flakes. Intensive surface examination failed to locate any decorticate flakes, broken bifaces, or projectile points.

Sheet wash erosion, accentuated by the slope of the hillside and sparse surface vegetation have combined to remove all but the largest and heaviest pieces of lithic debitage. Shovel testing within the right-of-way tended to confirm that all remaining cultural deposits are limited to the modern-day ground surface. The BEC work plan calls for the installation of 6-inch-diameter transmission line poles, spaced at 300-500 feet intervals, within this portion of the right-of-way. Environmental impact at site 41 KR 231 is considered to be minimal, as the site will be spanned via pole spacing.

41 KR 232 (Fig. 2,b)

Site 41 KR 232 represents a small remnant of a burned rock midden recently destroyed by private road construction along Turtle Creek. The intact portion of the midden is ca. 12 m by 4 m; the majority of the site has been spread along an adjacent roadbed by a bulldozer. Any superficial evidences of cultural activities adjacent to the remnant portion of the midden have been destroyed by the bulldozer.

The site is situated along a narrow creek terrace near the confluence of an unnamed creek which drains into Turtle Creek at a near perpendicular angle. The environmental setting is considered riverine with a few scattered oak and mesquite; surface vegetation is generally absent due to bulldozing.

Activities by the CAR at the site consisted of field mapping and photographic documentation. The ground surface in the vicinity of the *in situ* portion of the midden was intensively examined but not shovel tested. Controlled surface survey failed to isolate any temporally diagnostic artifacts; no collections were made.

The BEC right-of-way physically transects site 41 KR 232, although there are no transmission line utility poles or guide lines within ca. 50 m of the *in*

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situ portion of the midden. The site is effectively spanned by overhead existing transmission line. All BEC work plans for this right-of-way involve above ground modifications to existing line. BEC systems upgrade will not impact this site in any way.

41 BN 67 (Fig. 3,a)

Site 41 BN 67 appears to be a deeply buried terrace occupation; surface evidence consists of a light lithic scatter situated along the first terrace on the west side of the Medina River. The site is directly across the river from site 41 BN 68. The site has not been previously recorded by other surveys and was given a temporary field number of UTSA-CAR-3; the permanent TARL site number is 41 BN 67.

The first terrace along this section of the Medina River is almost treeless due to overbank flooding. The ground surface is nearly level, a result of years of agricultural activities; the general area has been fallow for some time. This terrace is roughly 5-6 m above the river and slopes abruptly (40-60°) to the river. During the inspection of this slope adjacent to the water, a number of well-patinated chert flakes were observed eroding out of unvegetated sections of the bank at a depth of ca. 2 m below the terrace surface; there was no obvious stratification visible. No discrete cultural features or temporally diagnostic artifacts were found. The north-south limits of the lithic scatter could not be firmly established (maximum estimate of 300 m) due to heavy vegetation along most of the slope; an estimate of the east-west areal extent cannot be made due to soil overburden; shovel testing was not done.

The BEC work plan at this site consists of the installation of one, perhaps two, utility poles for transmission line which will span the Medina River and tie into the proposed line across the river at site 41 BN 68. Environmental impact at site 41 BN 67 is considered to be very minimal.

41 BN 68 (Fig. 3,b)

Site 41 BN 68 consists of a light surface lithic scatter situated along the second terrace on the east side of the Medina River. The general site area is considered riverine; vegetation consists of a light gallery forest of mesquite and oak. The site has not been previously recorded by other surveys and was given a temporary field number of UTSA-CAR-4; the permanent TARL site number is 41 BN 68.

The lithic scatter covers a large area, over 200 m north-south by at least 100 m east-west; the exact site limits may be much larger. Shovel testing was not done. The general site area includes the McCarty homestead (built ca. 1860) and several cattle pens. The two-story wooden frame McCarty house is currently being remodeled and painted by the present owner; it has been essentially unoccupied since the 1950s.

The BEC work plan at this site consists of the installation of at least two, possibly three, utility poles on the east side of the Medina River. The

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proposed route will span the river and link up with transmission lines on the opposite bank. The precise location for the BEC right-of-way at this site has not been firmly established. Several engineering design features are still to be worked out before pole installation can begin (personal communication with the BEC).

Inspection of erosional gullies and several armadillo burrows indicates that the majority of the cultural materials are restricted to the modern-day ground surface. Controlled surface survey failed to isolate any discrete features or clusters of lithic debitage. Archaeological impact by the BEC at this site is considered to be minimal.

41 BN 69 (Fig. 4)

Site 41 BN 69 is not within a BEC right-of-way; the site was recorded as part of a continuing effort by the Center to record all known sites within this portion of the Hill Country. The site consists of four distinct burned rock middens clustered on the north bank of Red Bluff Creek. Activities by the CAR team at site 41 BN 69 consisted of field mapping, photographic documentation, and a controlled surface survey. A Frio projectile point was the only diagnostic artifact identified and was returned to the landowner. All work performed by the CAR at site 41 BN 69 occurred after hours or during nonworking hours while on the BEC survey. Although partially disturbed by agricultural activities, the site is in no immediate danger as it is closely guarded by the current landowners.

41 BN 70 (Fig. 4)

Site 41 BN 70 consists of a surface lithic scatter situated along a bluff ca. 20 feet above the creek bed of an unnamed intermittent stream. The site has not been recorded by other surveys and was given a temporary field number of UTSA-CAR-6; the permanent TARL site number is 41 BN 70.

The lithic scatter covers an area ca. 100 m long and extends back from the bluff's edge for a distance of ca. 20 m. The general site area is treeless with surface vegetation limited to short grasses. Intensive surface examination failed to identify any temporally diagnostic artifacts or tools; observed cultural materials were limited to lithic debitage. Inspection of erosional gullies revealed that soils in the vicinity are shallow (average 6 inches or ca. 10 cm) and underlain by bedded limestone. This site is typical of many such sites found throughout the Hill Country and represents a prehistoric lithic chipping station and/or a lithic procurement area. The BEC work plans for this site area are restricted to the opposite creek bank and will not impact site 41 BN 70 in any way.

41 BN 71 (Fig. 4)

Site 41 BN 71 is located ca. 150 m south-southwest of site 41 BN 70 along the same unnamed intermittent creek bed. The site has not been previously recorded by other surveys and was assigned a temporary field number of UTSA-

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CAR-7; the permanent TARL site number is 41 BN 71. It consists of a very light surface lithic scatter nearly identical as that observed at 41 BN 70; the environmental setting and vegetation are nearly the same. The ground surface is nearly unvegetated and is badly deflated due to sheet wash erosion; no shovel testing was done. Soils are shallow, ranging from 0-20 cm in depth, and are underlain by bedded limestone. BEC work plans for this site area are restricted to the opposite creek bed and will not impact site 41 BN 71.

41 BN 72 (Fig. 4)

Site 41 BN 72 consists of a light lithic scatter situated on a bluff adjacent to an unnamed creek bed. The site has not been previously recorded by other surveys and was given a temporary field number of UTSA-CAR-8; the permanent TARL site number is 41 BN 72.

The surface lithic scatter covers an area ca. 50 m along the edge of a bluff and extends ca. 30 m back from the bluff edge to the south-southeast. Controlled surface survey failed to identify any temporally diagnostic artifacts; no shovel testing was conducted. Cultural materials observed were limited to well-patinated lithic debitage, mostly secondary and tertiary chert flakes. Examination of erosional gullies confirmed that all cultural materials are limited to the surface or the first few centimeters below the surface. The western one-third of the site has been badly disturbed by the use of heavy equipment during the construction of a gas pipeline which transects the edge of the site.

The BEC right-of-way transects the periphery of this site. Work plans at this site involve the placement of one, perhaps two, 20-cm-diameter utility poles and guide wires. The site will probably be spanned via pole spacing; if not, no adverse archaeological impact is expected given the current conditions at site 41 BN 72.

X 41 KR 10

Site X 41 KR 10 has been documented via the SMU recording system, and the SMU site survey form is on file at the TARL. No permanent TARL number has been assigned.

The site consists of a surface lithic scatter situated on a hilltop and extends roughly 40 m down the southern slope of the hill. The BEC right-of-way parallels an existing gravel roadbed and does not exceed 10 m in distance from the shoulder of the road. The site has an east-west areal extent of at least 15 m either side of the right-of-way and roadbed. In effect, the roadbed and right-of-way transect the middle of the site.

The SMU site survey forms for site X 41 KR 10 provide an accurate site description of the field conditions observed at that time. The general site area consisted of dense stands of juniper (cedar) and mountain laurel. Surface vegetation was dense, and ground visibility was limited. The SMU survey crew recorded two **Scallorn** points (Turner and Hester 1985:189), one

unidentified Late Archaic(?) dart point, a number of thick and thin bifaces, preforms, and several discrete clusters of lithic debitage. It was suggested that prehistoric activities at X 41 KR 10 were not limited to just quarry activities but also included short-term campsite activities, as evidenced by the presence of unifacial scrapers, bifacial fragments, and broken projectile points.

Activities by the CAR on the site consisted of a controlled surface survey of accessible ground surface within the right-of-way and general site area. Diagnostic artifacts, including bifacial fragments, were flagged and mapped *in situ* but were not collected. A scaled compass-and-pace field map for all identified materials was drawn and is on file at the CAR-UTSA. A wooden stake, with site number, was placed within the right-of-way for the BEC planning purposes.

The projected work by the BEC in this right-of-way is limited to above ground modifications to existing service line. Vehicular traffic by the BEC in the area will be confined to the existing roadbed; the site will not be adversely impacted by the BEC.

X 41 KR 180

Site X 41 KR 180 has been documented via the SMU recording system, and the SMU site survey form is on file at TARL. No permanent TARL number has been assigned.

The SMU site survey forms for site X 41 KR 180 provide an accurate site description of the field conditions observed at that time. The site consisted of a large surface lithic scatter (minimum estimate of ca. 100 m²) situated on a gently sloping terrace ca. 500 m east of an unnamed creek bed along Highway 16. At that time, the general site area was part of a residential development (Sunshine Valley). Vegetation in the area was limited to medium grasses and perennial forbes; the general area was nearly treeless due to residential development activities. The eastern portion of the site had been dissected by a paved road; the BEC right-of-way parallels this road at a distance of ca. 10 m.

That portion of the site located within the right-of-way has been completely disturbed by modern ground-leveling activities associated with road construction and commercial development along the eastern side of the road. On the western side of the roadbed, the site extends at least 50 m. In this area, a number of holes and small trenches have been dug. Soil profiles observed in the walls of these holes would seem to indicate that cultural materials extend to a depth of ca. 30 cm below the modern ground surface; no features were observed. Eight small piles of chert flakes were found adjacent to these holes, indicating intentional vandalism by looters seeking Indian artifacts.

On-site activities by the CAR crew included a general surface survey of the right-of-way and adjacent site area. No temporally diagnostic artifacts were located, and no shovel testing was done. An unscaled field sketch map of the

area is on file at the CAR-UTSA. BEC work plans at site X 41 KR 180 are limited to above ground modifications to existing lines.

X 41 KR 96

Site X 41 KR 96 has been documented via the SMU recording system, and the SMU site survey form is on file at the TARL. No permanent TARL number has been assigned.

The site consists of a dome-shaped accumulation of burned limestone rock situated on the first terrace above Turtle Creek. The burned rock midden is ca. 12 m in diameter with a vertical height of 1 m above the modern-day ground surface. A small portion of the midden has been dug into by the landowner for "potting soil" for house plants. The general site area includes an occupied residence and several outbuildings. A light lithic scatter was observed for a distance of ca. 8 m in all directions from the central dome-shaped feature. A BEC transmission line pole and two brace wires have been placed directly in the site (midden); this construction occurred ca. 10 years ago. Projected BEC work at this site is limited to above ground modifications, and no additional damage to the site is anticipated.

X 41 KR 104

The UTM plotting for site X 41 KR 104 places the site within a BEC right-of-way. When this map plotting was relocated in the field, no cultural evidences for the site could be found. This general area is now a BEC substation with several outbuildings. Ground modification in the general area has been total. It cannot be determined if the SMU plotting is accurate, since development has completely altered this area.

X 41 KR 22

Site X 41 KR 22 has been documented via the SMU recording system, and the SMU site survey form is on file at the TARL. No permanent TARL number has been assigned.

The site consists of at least three large overlapping burned rock middens situated on the south side of Turtle Creek on the first terrace above a bend in the creek. The SMU site survey form estimates site size as 360 feet east-west by ca. 70 feet north-south. Recorded artifacts are **Ensor**, **Montell**, **Pedernales**, **Kinney**, and **Frio** projectile points (Turner and Hester 1985:94, 100, 111, 126, 139), several chert drills, and manos; in addition an intense lithic scatter covered the entire site area.

The BEC plans to construct a new service line that will span Turtle Creek in the vicinity of this site. Subsurface disturbance will be limited to the placement of one, possibly two, 20-cm-diameter utility poles and guide wires within the BEC right-of-way. Environmental impact associated with line construction will occur ca. 30-35 m south of the main site area.

The present condition of the archaeological deposits at site X 41 KR 22 bears special mention. When surveyed by the TAS field school in July 1971, the site was pristine and had been protected from vandalism for several decades by the landowner. Within the last six months, the site has been vandalized on at least three separate occasions by a well-organized group of "arrowhead hunters." During the vandals last attack on the site, they were apprehended by local law enforcement officers and are now awaiting trial (personal communication with the landowner).

Two of the three burned rock middens have been severely disturbed to a depth of ca. 1 m. One vandalized area is ca. 15 m x 30 m in size. Soil profiles in the walls of this massive hole clearly indicate that the subsurface prehistoric occupational debris extends from the ground surface to a depth well over 1.5 m. A large number of broken bifaces, expended cores, broken manos, animal bones, chert flakes, and mussel shell were found in piles adjacent to three separate "potholes" created by the vandals. No collections were made by the CAR team.

It is estimated that approximately 50% of the upper portion of site X 41 KR 22 has been totally destroyed. The lower portion of the occupational strata, below ca. 1.5 m, appears to be relatively intact across most of the site. The location of the three middens, immediately adjacent to and ca. 20 feet above Turtle Creek, would seem to indicate that the main occupation area may extend several hundred meters back from the middens to the south. If this is the case, colluvial deposition from adjacent uplands has deeply buried the main occupation. The destruction at this site represents a significant loss to archaeological information about the prehistory of the Turtle Creek area.

41 BN 73

Site 41 BN 73 is not within a BEC right-of-way. This site, as was the case with 41 BN 69, is well known by local residents and was documented as part of a continuing effort by the Center to record known archaeological sites within this portion of the Texas Hill Country.

The site consists of one, perhaps two, burned rock midden(s) located ca. 150 m south of Bandera Creek along Highway 173. Portions of the site have been disturbed by the current landowners who allow their grandchildren to "scratch around" the site looking for "arrowheads." On-site activities consisted of field mapping, photographic documentation, and a controlled surface survey. Cultural materials identified were limited to lithic debitage and a few unifacial and bifacial fragments; no temporally diagnostic artifacts were identified.

SUMMARY AND RECOMMENDATIONS

The archaeological survey conducted by the CAR-UTSA for the Bandera Electric Cooperative, Inc., surveyed a narrow transect across nearly 100 km of Bandera and Kerr Counties, Texas. The survey transect crossed a variety of environmental zones, including creek bottoms, river terraces, floodplains,

hillsides, and upland ridge tops. An equally diverse range of floral and faunal communities were seen during the course of this survey.

The CAR-UTSA field survey identified a total of nine unrecorded prehistoric archaeological sites; seven of which are physically within the BEC rights-of-way. Of these seven, six sites consist of surface lithic scatters (41 KR 231, 41 BN 67, 41 BN 68, 41 BN 70, 41 BN 71, and 41 BN 72). Controlled surface surveys, combined with observations of erosional gullies, animal burrows, and around the bases of large trees, tend to confirm that all remaining cultural materials are primarily limited to the modern-day ground surface, except for site 41 BN 67. Site 41 BN 67, a deeply buried terrace occupation site, is evidenced by an eroding surface scatter of flakes in the river bank adjacent to the Medina River. Site 41 KR 232 represents a small remnant of a burned rock midden recently destroyed by road construction along Turtle Creek. Site 41 BN 69 and 41 BN 73 are not within the BEC rights-of-way; they are well known by local residents. All work performed on-site at 41 BN 69 and 41 BN 73 occurred during nonworking hours while on the BEC survey. A total of 14 SMU-recorded sites was relocated in the field that are situated on or very near the BEC rights-of-way (Appendix II). Environmental impact by the BEC at these sites is considered to be minimal.

For survey areas where no cultural resources were found, it is felt that modern activities (e.g., agriculture, residential/commercial construction) and natural forces (e.g., erosion, deflation, modern flooding) are partially responsible for the lack of archaeological evidence of prehistoric occupation. Perhaps the distributions of prehistorically exploitable resources are responsible for negative evidence in other areas. Additionally, the clandestine activities of "arrowhead" hunters were evident throughout the project area; past experiences indicate that we saw only the tip of the iceberg.

It is the opinion of the CAR archaeologists who conducted this survey that no adverse impact will occur to the sites investigated. Perceived impact would be limited to vehicular traffic which will transit the sites perhaps twice. At sites 41 KR 231, 41 BN 67, 41 BN 70, 41 BN 71, and 41 BN 72 subsurface disturbances will consist of the installation of six-inch-diameter line poles spaced at 300- to 500-foot intervals which will effectively span the main site areas. The Bandera Electric Cooperative, Inc., has a general policy of site avoidance and conservation via pole spacing.

It is the opinion of the CAR archaeologists that none of the sites identified by this survey meet the minimum eligibility requirements, as outlined in 36CFR60.6, for nomination to the National Register of Historic Places. No further work is recommended at these sites.

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APPENDIX I

**COMPILATION OF SMU RECORDED SITES ON FILE AT THE TARL WITH
UTM PLOTTINGS ON OR WITHIN 100 M OF THE TRANSMISSION LINE
RIGHTS-OF-WAY FOR THE BANDERA ELECTRIC COOPERATIVE, INC.**

Quad Map	Project Number	Recorded Site Numbers
Tarpley Pass	209	None
	338	None
Bandera	209	None
	337	None
Pipe Creek	203	None
	204	None
	310	None
	311	None
	312	None
	313	None
	314	None
	315	None
Center Point	305	X 41 KR 125, X 41 KR 126, X 41 KR 132, X 41 KR 157, X 41 KR 182, X 41 KR 183, X 41 KR 189, X 41 KR 200, 41 KR 1*, 41 KR 93, 41 KR 174
	332	None
Fall Creek	201	X 41 KR 35, X 41 KR 36, X 41 KR 225
	302	X 41 KR 2, X 41 KR 3, X 41 KR 4, X 41 KR 5, X 41 KR 6, X 41 KR 7, X 41 KR 10, X 41 KR 11, X 41 KR 12
	303	X 41 KR 88, X 41 KR 89, X 41 KR 91, X 41 KR 213, X 41 KR 215, X 41 KR 222, X 41 KR 241
	304	X 41 KR 108, X 41 KR 224, 41 KR 107
	305	X 41 KR 21, X 41 KR 22, X 41 KR 34, X 41 KR 71, X 41 KR 73, X 41 KR 92, X 41 KR 102, X 41 KR 110, X 41 KR 232

Quad Map	Project Number	Recorded Site Numbers
Fall Creek (continued)	306	X 41 KR 100, X 41 KR 104,
	307	X 41 KR 214, X 41 KR 216, X 41 KR 217, X 41 KR 218, X 41 KR 219, X 41 KR 220, X 41 KR 221
	611	X 41 KR 211
Echo Hills	306	X 41 KR 96, X 41 KR 97, X 41 KR 98, X 41 KR 180, X 41 KR 251, X 41 KR 261

*The site numbers that do not have "X" preceding them have been converted to TARK numbers.

APPENDIX II

PRESURVEY EVALUATION OF THE BANDERA ELECTRIC COOPERATIVE, INC.,
WORK PLANS FOR 1986 AND 1987, LISTED BY USGS QUAD MAPSTARPLEY PASS QUAD**Project No. 209**

Only Project No. 209 on the Tarpley Pass quad was recommended by the THC for survey. Project No. 209 consists of existing line (ca. 400 m) and proposed line (ca. 250 m) on this quad. There is an additional 150 m of proposed line on the Bandera quad. The proposed line will span the Medina River; there is a good chance of locating unrecorded sites on both sides of the river. The easternmost portion of the project is Project No. 337. No sites have been previously recorded within the right-of-way.

Project No. 338

Project No. 338 consists of existing line (ca. 650 m long). No sites have been registered within the right-of-way. There is a chance of locating sites as the area is ca. 225 m due east of the Medina River. The survey route will roughly parallel an existing light duty road (FM-1333?), ca. 30 m east of the road's center line.

BANDERA QUAD

The only area to be surveyed on the Bandera quad consists of a portion of Project Nos. 209 and 337 (discussed above). No sites have been previously recorded within the right-of-way.

PIPE CREEK QUAD**Project No. 203**

Only Project No. 203 on the Pipe Creek quad was recommended by the THC for survey. Project No. 203 consists of 2.4 km of proposed line; no sites have been previously recorded. The route is across relatively flat uplands and does not cross any creek beds. There is a good chance of finding upland quarry/chipping station sites.

Project No. 204

Project No. 204 consists of proposed line (250 m); no sites have been previously recorded. The proposed route is within 25 m of a light duty road; the area is 400 m east of Bluff Creek on a ridge with terrace below. The likelihood of finding previously unrecorded sites exists.

Project No. 310

Project No. 310 consists of 3.7 km of existing line; no sites have been previously recorded within the right-of-way. The existing line spans Red Bluff Creek two times and Pipe Creek one time. There are six areas with good potential for finding unrecorded sites.

Project No. 311

Project No. 311 consists of 7.4 km of existing lines; no sites have been previously recorded within the right-of-way. Most of the route is across uplands; Red Bluff Creek is spanned one time. Potential for uplands quarry/chipping stations and possible terrace occupation on both sides of the creek.

Project No. 312

Project No. 312 consists of 1.85 km of existing line; no sites have been previously recorded within the right-of-way. Red Bluff Creek is spanned one time, there are at least three intermittent creek beds (which appear to flow to Red Bluff Creek) within the right-of-way. There are eight potential areas for unrecorded sites.

Project No. 313

Project No. 313 consists of 1.3 km of existing line; no sites have been previously recorded within the right-of-way. Survey transect consists mostly of flat uplands; no creek beds. The route crosses unimproved roads at least six times. The whole area is probably disturbed with a low chance of containing unrecorded sites.

Project No. 314

Project No. 314 consists of 2.8 km of existing line; no sites have been previously recorded within the right-of-way. The route crosses mostly flat uplands, crosses unimproved roads in two places, and parallels existing roadbeds for ca. 40% of this survey transect. There is a chance of finding upland quarry/chipping sites in at least two places.

Project No. 315

Project No. 315 consists of 2.8 km of existing line; no sites have been previously recorded within the right-of-way. This line begins at Highway 16 and heads north. Most of the route is across upland; there is a chance for finding quarry/chipping sites.

Project No. 316

Project No. 316 consists of 1.5 km of existing line; no sites have been previously recorded within the right-of-way. The route parallels a fence line (ca. 75 m offset). The route is across flat uplands; chance for upland quarry/chipping sites.

CENTER POINT QUAD**Project No. 305**

Project No. 305 consists of over 10 km of existing line. Various portions (50%) were recommended for survey by the THC. The existing right-of-way appears to transect the following sites: X 41 KR 1, now converted to a TARDL number, 41 KR 1 (the Paris site; excavated and reported by Skinner [1979a]) and 41 KR 93, X 41 KR 139, X 41 KR 200, X 41 KR 157, X 41 KR 126, X 41 KR 182, X 41 KR 189, X 41 KR 125, and X 41 KR 183. There are nine SMU sites within 50 m of the right-of-way (only 41 KR 1 and 41 KR 93 are TARDL numbers). There are probably still more sites yet to be found. The THC missed site 41 KR 174; this area was not recommended for survey.

Project No. 332

Project No. 332 consists of 1.1 km of existing line; no sites have been previously recorded within the right-of-way. The route spans Steel Creek two times; there are four areas with good potential for unrecorded sites.

FALL CREEK QUAD**Project No. 201**

The limits (10 km?) were difficult to establish for Project No. 201. THC recommended survey of ca. 25% of this route. There are at least nine SMU sites within 100 m of the right-of-way. About 50% of the survey would follow existing roadbeds (Highway 16). Several areas probably have unrecorded sites and terrace occupation sites. Most of the survey (50%) probably does not contain sites (roadbeds).

Project No. 302

Project No. 302 consists of ca. 3.8 km of existing line. The existing right-of-way appears to transect the following sites: X 41 KR 7, X 41 KR 6, X 41 KR 2, and X 41 KR 10. SMU sites X 41 KR 11, X 41 KR 4, and X 41 KR 3 are within 50 m of the right-of-way. Most of the right-of-way which contains these sites was recommended by the THC for survey. There are probably more sites to be found.

Project No. 303

Project No. 303 consists of ca. 8 km of existing line. SMU site X 41 KR 215 is within the right-of-way; there are seven SMU sites within 100 m of the right-of-way. THC recommended survey of ca. 30% of this route. The Marshall Creek and West Creek areas probably have unrecorded sites.

Project No. 304

Project No. 304 consists of ca. 2 km of existing line. Most of the survey transect parallels existing roadbeds in an area with a trailer park and residential structures. SMU sites X KR 107, X KR 108, and X KR 224 appear to be near but not within the right-of-way.

Project No. 305

Project No. 305 consists of ca. 16 km of existing line; THC recommended survey of ca. 10% of the 16 km. The following sites appear to be transected by the right-of-way: 41 KR 110, X 41 KR 232, and X 41 KR 73. There are five SMU sites within 100 m of the right-of-way. There are at least 12 areas with a high potential for unrecorded sites, mostly terrace sites.

Project No. 306

Project No. 306 consists of ca. 6 km of existing line within the Turtle Creek watershed. Much of the line follows the sinuous course of Turtle Creek paralleling existing roadbeds. About 5% of the line was recommended by the THC for survey. There are no previously recorded sites within the right-of-way. SMU site X 41 KR 104 appears to be adjacent to the right-of-way; this is the area THC recommended for survey. It seems likely that more unrecorded sites are in this area.

Project No. 307

Project No. 307 consists of ca. 4 km of existing line; no sites have been previously recorded within the right-of-way. There are two SMU sites within 100 m of the right-of-way. There are three or four areas of high potential for unrecorded sites (terraces), including one natural spring area.

Project No. 611

Project No. 611 consists of ca. 11 km of existing line; no sites have been previously recorded within the right-of-way, SMU site 41 KR 211 appears to be outside of the right-of-way. There are at least nine areas with a high potential for unrecorded sites. These areas are terraces adjacent to creek beds. The THC did not recommend survey of this project number.

ECHO HILL QUAD**Project No. 306**

Project No. 306 consists of ca. 2.8 km of existing line; THC recommended 100% survey. Sites X 41 KR 180, X 41 KR 96, X 41 KR 98, X 41 KR 97, X 41 KR 251, X 41 KR 261, appear to be within or adjacent to the right-of-way. Survey transect runs along Turtle Creek; good chance for locating unrecorded sites.

APPENDIX III

**SUMMARY OF FIELD OBSERVATIONS FOR SITES
ON OR WITHIN 100 M OF THE TRANSMISSION LINE RIGHTS-OF-WAY
FOR THE BANDERA ELECTRIC COOPERATIVE, INC.**

CENTER POINT QUAD**Project No. 305**

- 41 KR 1* See text (formerly X 41 KR 1), impact to site limited to foot traffic by the BEC. The site is spanned by existing line.
- 41 KR 93 Site area relocated in the field; house built on/over site.
- 41 KR 174 Site relocated in the field. SMU plotting is inaccurate, site is limited to bluff top only. Site has evidence of "looters," several potholes, piles of flakes, and a broken screen and stand. Photographs taken; BEC work limited to above ground.
- X 41 KR 125 Site area relocated in the field; house built on/over site.
- X 41 KR 126 Site area relocated in the field; large house and concrete parking area on/over site.
- X 41 KR 132 Site relocated in the field. Majority of site outside the BEC right-of-way. Site is spanned by existing line.
- X 41 KR 157 Site area relocated in the field; ground surface disturbed by agricultural activities. BEC work spans site area.
- X 41 KR 182 Site relocated in the field; outside of BEC right-of-way.
- X 41 KR 183 Site area relocated in the field; house built on/over site.
- X 41 KR 189 Site area relocated in the field; house built on/over site.
- X 41 KR 200 No evidence for site remains; new house and plowed field in general area. BEC right-of-way spans site area.

Project No. 332

None

FALL CREEK QUAD**Project No. 201**

X 41 KR 35,
 X 41 KR 36,
 X 41 KR 225

Sites not relocated; outside of the BEC rights-of-way.

Project No. 302

X 41 KR 3

Most of the site is outside of the BEC right-of-way; it parallels an existing roadbed. Large biface recorded at angle-pole 5-72/35'-6. BEC work is above ground; no vehicular traffic necessary to access the site.

X 41 KR 6

BEC right-of-way is located on periphery of main site area. That portion of the site located within the right-of-way has already been trenched (water line) near lot marker 67. BEC work is above ground; no vehicular traffic necessary to access site.

X 41 KR 7

Main site area covered by house; roadbed fill has also been added, with the general area leveled by bulldozing.

X 41 KR 10

See text; no adverse impact.

X 41 KR 2,
 X 41 KR 4,
 X 41 KR 5,
 X 41 KR 11,
 X 41 KR 12

Not relocated; outside of the BEC right-of-way.

Project No. 303

X 41 KR 215

Site area relocated in the field; house built on/over site.

X 41 KR 88,
 X 41 KR 89,
 X 41 KR 91,
 X 41 KR 213,
 X 41 KR 222,
 X 41 KR 241

Sites were not relocated; outside of the BEC right-of-way.

Project No. 304

41 KR 107

Site area relocated; outside of the BEC right-of-way. No perceived impact is expected. All BEC work is above ground.

- X 41 KR 108 Site was not relocated; outside of the BEC right-of-way.
- X 41 KR 224 Site area was located in the field; area badly disturbed by a roadbed, entrance sign, and stone wall. BEC work is above ground; no impact is expected to the site.

Project No. 305

- X 41 KR 22 See text. No adverse impact is expected to site.
- X 41 KR 73 Site area relocated; BEC lines span site.
- X 41 KR 110 Site area relocated; BEC lines span site.
- X 41 KR 232 No evidences in the field for a site at this UTM plotting.
- X 41 KR 21,
X 41 KR 34,
X 41 KR 71,
X 41 KR 92,
X 41 KR 93,
X 41 KR 102 Sites were not relocated, outside of the BEC rights-of-way.

Project No. 306

- X 41 KR 100 Site was not relocated; outside of the BEC right-of-way.
- X 41 KR 104 See text. No adverse impact is expected to site.

Project No. 307

- X 41 KR 214,
X 41 KR 216,
X 41 KR 217,
X 41 KR 218,
X 41 KR 219,
X 41 KR 220,
X 41 KR 221 All sites are now within a small residential community; none are located within the BEC rights-of-way.

Project No. 611

- X 41 KR 211 Site not relocated; outside of the BEC right-of-way.

ECHO HILL QUAD**Project No. 306**

- X 41 KR 96 See text. Site area was relocated; area heavily disturbed. BEC line pole placed in remnant portion of a burned rock midden; an unimproved road also transects site. BEC work will be above ground; no additional impact is expected.
- X 41 KR 180 See text. Site was relocated in the field, light lithic scatter in the BEC right-of-way; main site area outside of the right-of-way. BEC lines span site; work will be above ground.
- X 41 KR 251 Site area was relocated; house built on/over site.
- X 41 KR 97,
X 41 KR 98,
X 41 KR 261 Sites were not relocated; outside of the BEC right-of-way.

* Site numbers without the "X" preceding them have been converted to TARL numbers.

Note: No sites had been previously recorded on the Bandera, Pipe Creek, and Tarpley Pass quads.

APPENDIX IV

STATEMENT OF SURVEY RESULTS

Appendix III is a short statement of the field survey results prepared at the request of Bandera Electric Cooperative, Inc., and submitted to the THC on March 6, 1986.

The field survey for the BEC was conducted January 21-24, 28, 1986, by CAR-UTSA archaeologists Joseph Labadie and Bruce Ellis. Mr. Raymond Batto (BEC) accompanied the crew during the entirety of the survey. The purpose of the survey was to identify and record National Register potentially eligible properties (sites), to assess the BEC project's impact to previously and newly recorded sites, and to update conditions and verify locations of sites within the electrical transmission line rights-of-way.

To accomplish these ends, a reconnaissance level survey of all BEC rights-of-way was conducted which consisted of detailed surface examination, augmented by subsurface probes where necessary, in order to identify archaeological sites. All field methods employed conform to the Council of Texas Archaeologists (CTA 1981) guidelines for field investigations.

Controlled surface survey and selected recovery of cultural materials provided data for field site assessments using the criteria for potential eligibility to the National Register of Historic Places as outlined in 36CFR60.6. All unrecorded sites identified within the 20-foot-wide rights-of-way were mapped, photographed, plotted on 7.5' USGS topographic maps and recorded on the six-page TARL site survey form record. All collections recovered have been accessioned, catalogued, and sorted at the CAR-UTSA. Field notes, photographs, and field maps are also on file at the CAR-UTSA.

The area of survey consisted of ca. 98 km of BEC rights-of-way, 20 feet in width, that are scheduled for improvements and system upgrading during 1986 and 1987. The BEC work plan calls for the installation of ca. 9 km of new lines/poles and the upgrading of ca. 90 km of existing line. The BEC modifications to existing lines, in all cases, is limited to above ground modifications, upgrading single-phase to three-phase line, and insulator changes. Environmental impact within these rights-of-way would be limited to vehicular traffic; no subsurface disturbances are anticipated. Approximately 9 km of new service and feeder line will be constructed. Environmental impact is to be restricted to the 20-foot-wide rights-of-way. These new rights-of-way will be cleared of all brush and trees by the use of chainsaws; no heavy equipment, such as bulldozers or front end loaders, will be used as part of brush clearing or new line construction.

The CAR-UTSA field survey identified a total of eight unrecorded archaeological sites; seven of which are physically within the BEC rights-of-way. Of these seven, six sites consist of surface lithic scatters (41 KR 231, 41 BN 67, 41 BN 68, 41 BN 70, 41 BN 71, and 41 BN 72). Controlled surface survey combined with observations of erosional gullies, tend to confirm that all remaining cultural materials are primarily limited to the modern-day ground surface except for 41 BN 67. Site 41 KR 232 represents a small remnant of a burned rock midden recently destroyed by road construction along

Turtle Creek. Site 41 BN 67 consists of a deeply buried terrace occupation site, as evidenced by an eroding surface scatter of flakes in the river bank adjacent to the Medina River. Site 41 BN 69 is not within the BEC right-of-ways. The site is well known by local residents and consists of four distinct burned rock middens clustered on the north bank of Pipe Creek.

It is the opinion of the CAR archaeologists who conducted this survey that no adverse impact will occur to the sites investigated. Perceived impact is limited to vehicular traffic which will transit the sites perhaps twice. At sites 41 KR 231, 41 BN 67, 41 BN 71, 41 BN 72, and 41 BN 70 subsurface disturbances will consist of the installation of six-inch-diameter line poles spaced at 300- to 500-foot intervals which will effectively span the main site areas. The BEC has a general policy of site avoidance and conservation via pole spacing.

It is the opinion of the CAR archaeologists that none of the sites identified by this survey meet the minimum eligibility requirements, as outlined in 36CFR60.6, for nomination to the National Register of Historic Places. No further work is recommended at these sites given the perceived environmental impacts of the 1986 and 1987 work plans of the BEC for rights-of-way surveyed by the Center for Archaeological Research, The University of Texas at San Antonio.

