CULTURAL RESOURCES SURVEY OF THE FURMAN FENDLEY 100kV TRANSMISSION PROJECT, UNION COUNTY, SOUTH CAROLINA

Chicora Research Contribution 588

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MANAGEMENT SUMMARY

This report provides the results of a cultural resources investigation of a 3.7 mile transmission line and associated 3.4 acre substation situated in northwestern Union County. The study was conducted by Andrew Hyder, under the supervision of Dr. Michael Trinkley of Chicora Foundation for Mr. Tommy Jackson of Central Electric Power Cooperative. The work is intended to assist this client comply with Section 106 of the National Historic Preservation Act and the regulations codified in 36CFR800.

The corridor is to be used by Central Electric Power Cooperative for the construction of the Furman Fendley 100kV transmission line. The proposed corridor will start at Gist Bridge Road and terminate immediately west of the the Bonham community, at a new substation.

The proposed route will require the clearing of the corridor, followed by construction of the proposed transmission line. The substation will similarly require clearing of a 3.4 acre tract. These activities have the potential to affect archaeological and historical sites that may be in the project corridor. For this study an area of potential effect (APE) 100 feet around the proposed transmission line was assumed.

Union County has received a comprehensive architectural survey, coupled with a variety of brief local investigations. In spite of the previous work, no architectural sites have been identified within the APE. ArchSite does not indicate any National Register properties in the immediate area.

An investigation of the archaeological site files at the S.C. Institute of Archaeology and Anthropology identified three sites that may be found within the corridor – 38UN34, 38UN35, and 38UN82.

The archaeological study of the transmission line incorporated shovel testing at 100-foot intervals along the center-line of the 70-foot wide proposed corridor, which had been cut and staked at the time of this investigation. All shovel test fill was screened through ¼-inch mesh and the shovel tests were backfilled at the completion of the study. A total of 183 shovel tests were excavated in the survey corridor.

The substation was investigated by excavation of 15 shovel tests using an identical methodology.

A survey of public roads within 100 feet of the survey area was conducted in an effort to identify any architectural sites over 50 years old that also retained their integrity.

A historic farmstead, with a standing house (Site 01418), a CMU structure (01418.01), a frame shed (01418.02), a frame garage (01418.03), a collapsed frame barn (01418.04), a frame shed (01418.05), and a recent brick veneer dwelling (01419) being identified. These are recommended not eligible for inclusion on the National Register of Historic Places

No archaeological sites were identified on the transmission corridor. The previously recorded sites could not be relocated and, at least in the immediate corridor area, are presumed destroyed. No archaeological remains were identified in the substation, in spite of a small mid-twentieth century farmstead being identified through historic structures.

It is possible that archaeological remains may be encountered in the project area during construction. Construction crews should be advised to report any discoveries of concentrations of artifacts (such as bottles, ceramics, or projectile points) or brick rubble to the project engineer, who

should in turn report the material to the State Historic Preservation Office or to Chicora Foundation (the process of dealing with late discoveries is discussed in 36CFR800.13(b)(3)). No construction should take place in the vicinity of these late discoveries until they have been examined by an archaeologist and, if necessary, have been processed according to 36CFR800.13(b)(3).

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Introduction

This investigation was directed by Dr. Michael Trinkley of Chicora Foundation, Inc. for Mr. Tommy L. Jackson of Central Electric Power Cooperative. The work was conducted to assist Central Electric Power Cooperative to comply with Section 106 of the National Historic Preservation Act and the regulations codified in 36CFR800.

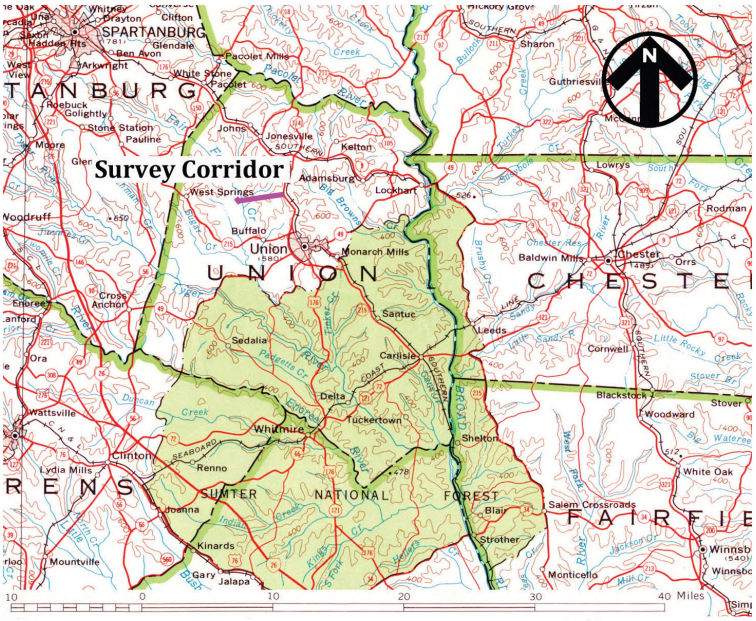


Figure 1. Survey corridor on the 1:500,000 State of South Carolina map.

The project site consists of a 3.72-mile corridor to be used for an 110kV transmission line in northwestern Union County (Figure 1). Associated with this corridor is a 3.4-acre parcel that will be used as a substation. The corridor begins immediately south of Gist Bridge Road and parallels an existing power line for approximately 2,800 feet. It turns east through woodlands for 900 feet before paralleling another existing power line. It follows the northern side of this power line for 12,800 feet before crossing the line and continuing to parallel the existing power line up to Furman Fendley Highway (US 176). It parallels this highway extending north for an additional 600 feet before crossing the highway and terminating at a proposed new substation that includes 3.4 acres. The corridor is generally 70 feet in width (Figure 2).

The corridor exhibits considerable topographic variation crossing three creeks and passing over multiple steep ridge slopes and several ridge toes. Elevations range from 436 feet above mean sea level (AMSL) to 705 feet.

There are only a few areas of old cultivation and they are typically terraced. Planted pines and mixed hardwoods are common, some areas are heavily wooded, and areas of standing water were encountered. There are numerous delineated wetlands.

The proposed corridor, as previously mentioned, is intended to be used as a transmission line. Landscape alteration, primarily clearing and construction, including erection of poles, will damage the ground surface and any archaeological resources that may be present in the survey area. Construction and maintenance of the transmission line may also have an impact on historic resources in the project area.

The project will not directly affect any historic structures (since none are located on the survey corridor), but the completed facility may

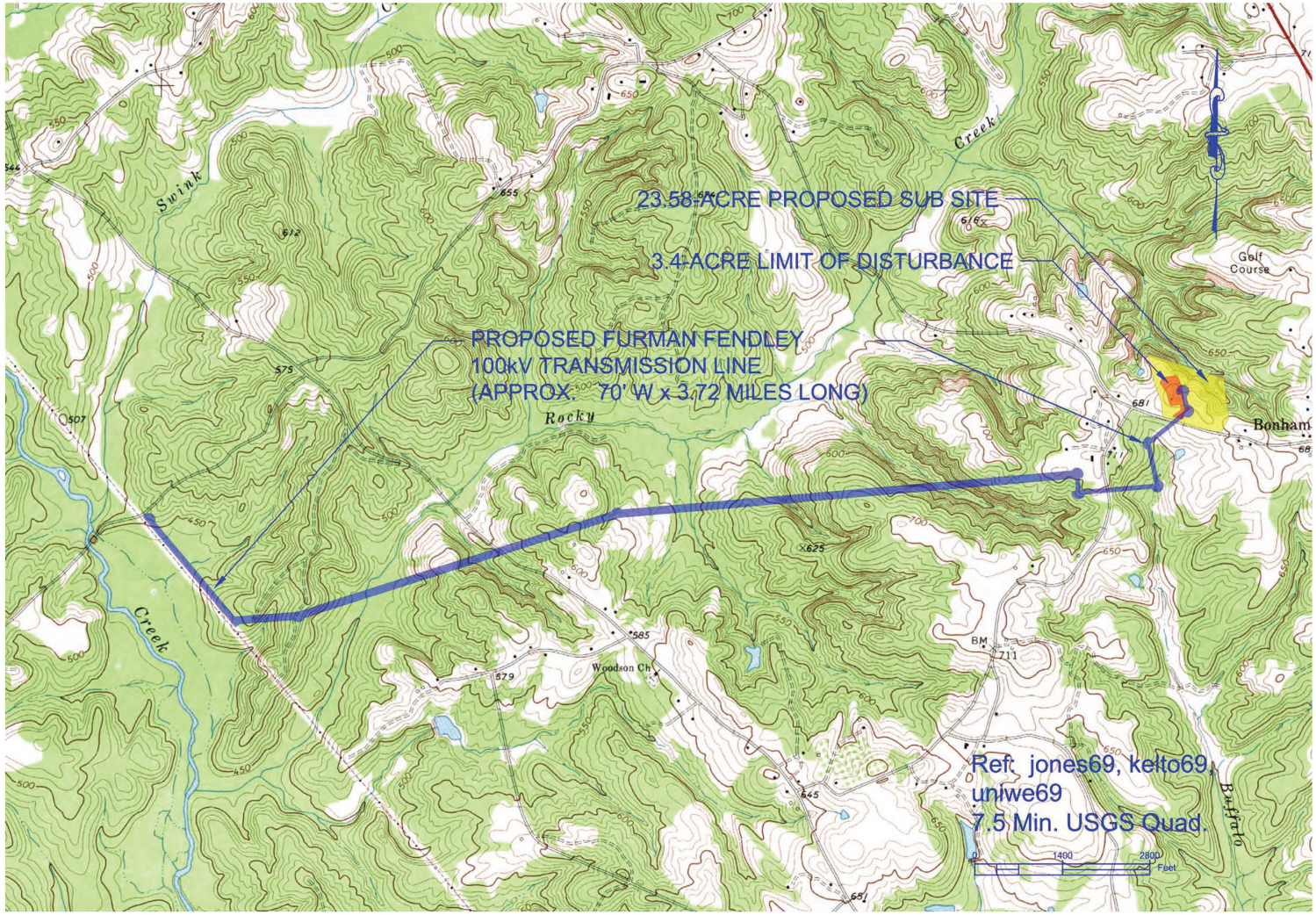


Figure 2. Portions of the 1:24,000 USGS Jonesville topographical map showing project corridor and the terminal substation at the eastern end.

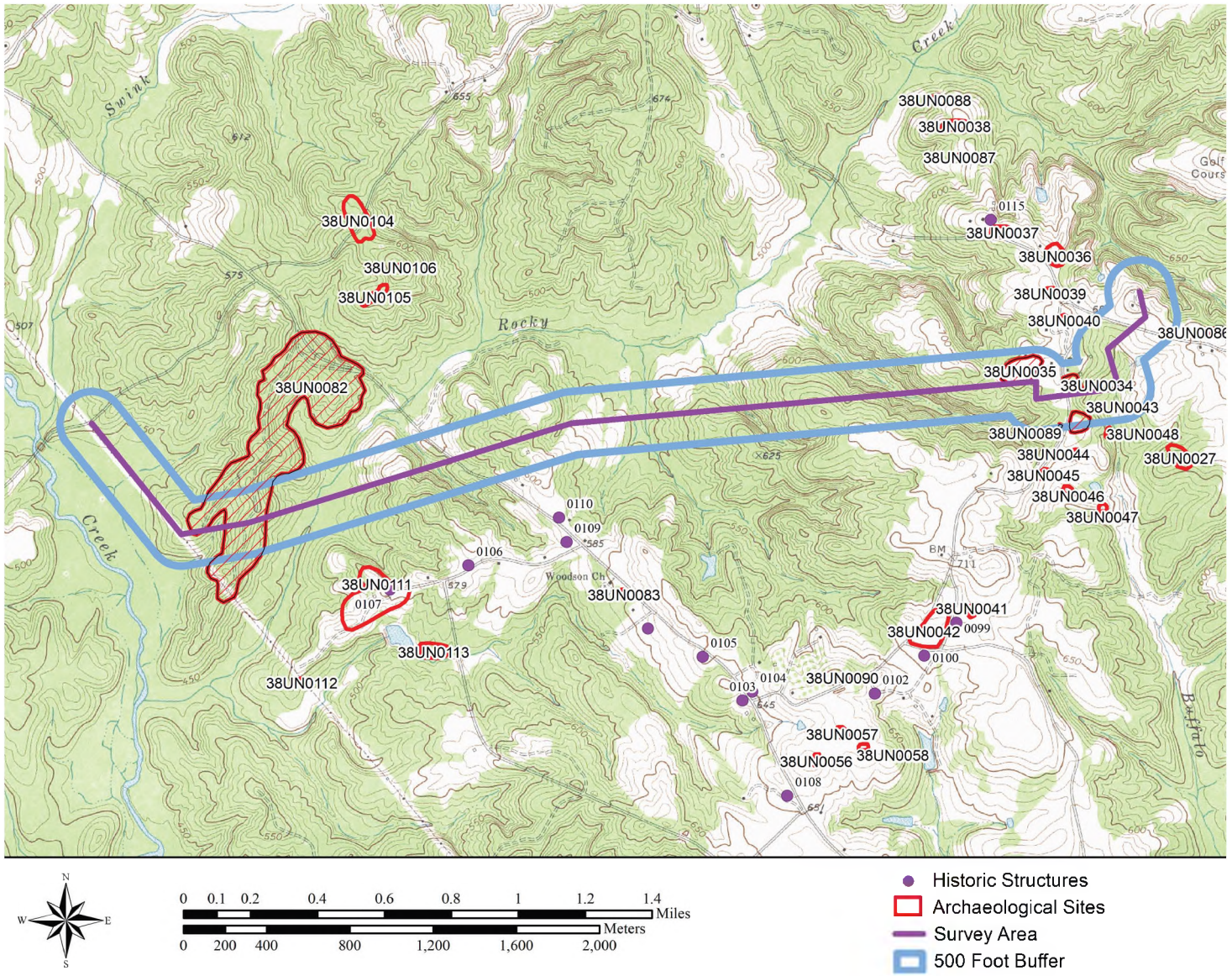


Figure 3. ArchSite map showing archaeological sites and standing architecture reported for the project area. The blue lines denote an area of 500 feet on either side of the centerline. The APE is actuallv 100 feet.

detract from the visual integrity of historic properties, creating what some consider discordant surroundings. As a result, this architectural survey uses an area of potential effect (APE) 100 feet around the proposed corridor. This distance was selected since the proposed corridor will use only single poles or H-frame wood poles, the corridor is primarily 70 feet in width, tree cover in most areas is heavy, and there are numerous transmission lines already present.

This study, however, does not consider any future secondary impact of the project, including increased or expanded development of this portion of Union County.

We were requested by Mr. Tommy L. Jackson of Central Electric Power Cooperative to conduct the cultural resource study in April 2018, with the field investigations conducted by Andrew Hyder, under the supervision of Dr. Michael Trinkley from April 23 through April 27, 2018. The architectural survey and evaluations were conducted by Dr. Trinkley at this same time.

These investigations incorporated a review of ArchSite and the site files at the South Carolina Institute of Archaeology and Anthropology using an Area of Potential Effects (APE) of 100 feet. Because of that work, potentially three previously recorded archaeological sites were identified in the project corridor (38UN34, 38UN35, and 38UN82). Several additional archaeological sites (38UN43 and 38UN89) are found within about 500 feet of the corridor (Figure 3). These sites are discussed in more detail in a following section.

A comprehensive architectural survey of Union County has been conducted (Revels 2005). Figure 3 reveals that none of the identified sites is within the 100-foot APE or even the 500-foot search area shown on this figure. None of the architectural sites identified have been found eligible by the S.C. Department of Archives and History (Revels 2005). It is unlikely that the proposed activity will have any impact on these sites given both the distance from the corridor and preexisting conditions.

Archival and historical research was limited to a review of secondary sources available in the Chicora Foundation files and at the South Caroliniana Library.

No previously unrecorded archaeological sites were found in the transmission corridor or on the substation lot and no evidence of the previously recorded sites could be found during these investigations.

The architectural survey of the APE, designed to identify any structures over 50 years in age that retain their integrity and that are potentially eligible for the National Register of Historic Places revealed no such structures in the corridor.

Two historic structures, a ca. 1920 frame house and a ca. 1960 brick veneer house, with associated farm outbuildings, were found on the substation lot and were assigned architectural site numbers 01418 and 01419. Both are recommended not eligible for inclusion on the National Register.

Report production was conducted at Chicora's laboratories in Columbia, South Carolina on May 7 through 11, 2018. The only photographic materials associated with this project are digital and will be retained by Chicora Foundation. All other field notes and the resulting collections will be curated at the South Carolina Institute of Archaeology and Anthropology.

Environmental Background

Physiography

Union County is bounded to north by the Pacolet River and Cherokee County; to the east by the Broad River and York, Chester, and Fairfield counties; to the south by the Enoree and Tyger rivers, and Laurens and Newberry counties; and to the west by Spartanburg County. The county is roughly rectangular in shape and it falls into the Piedmont region of northwest-central South Carolina (Figure 1).

Characteristic of the piedmont, the rivers and smaller streams in the area form a dendritic drainage pattern. Throughout the piedmont, the terrain has been extensively dissected and degraded. The region, lying between the Saluda River to the west and the Broad River to the east, has an eastward slope, in the general direction of the major drainages.

In contrast, the project corridor, initially close to the floodplain of Fairforest Creek, eventually crosses a variety of small watercourses, ridge toes, and slopes. Elevations tend to increase from the west (near Fairforest Creek) to the east (at the proposed substation). Slopes are often steep, up to 40%, although there is considerable variation (Figure 4).

As will be discussed below, geologically this is a dissected penepiain and the region has a rolling topography. At least two major drainages are found in the study area, Fairforest Creek at the west end and Big Brown's Creek to the east.

Elevations in Union County range from about 500 to 700 feet above mean sea level (AMSL), although the lowest point, about 350 feet AMSL, is at the confluence of the Tyger and Broad rivers (Camp et al. 1975). In the study tract elevations range from about 436 feet AMSL along the floodplain of Fairforest Creek to 705 feet at the terminal substation on the east end. Some of the topography has been artificially affected by agricultural activities. Terracing is a common feature on the slopes, having been constructed as a means to control the extraordinary erosion of the early twentieth century. More recently, the region has been characterized by silviculture activities.

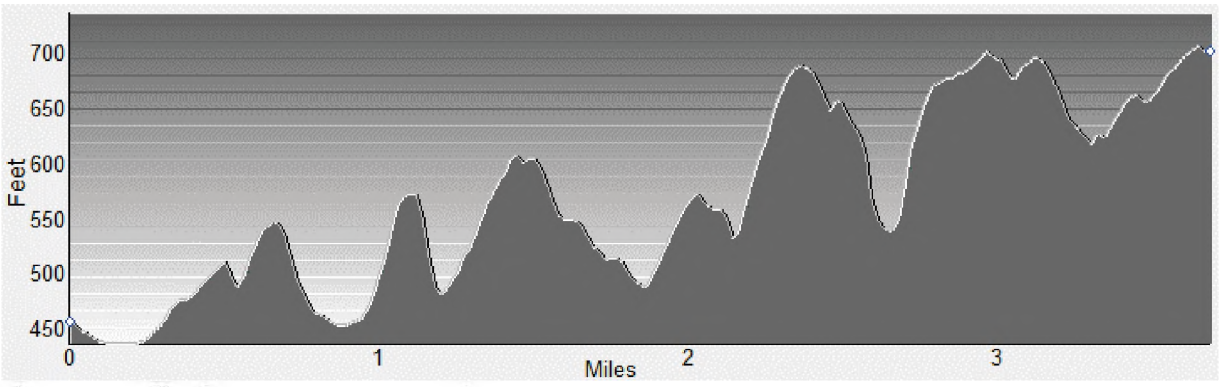


Figure 4. Profile along the proposed corridor.

Geology and Soils

Most of the rocks of the Piedmont are gneiss and schist, with some marble and quartzite (Haselton 1974). Some less intensively metamorphosed rocks, such as slate, occur along the eastern part of the province from southern Virginia to Georgia. This area, called the Slate Belt, is characterized by slightly lower ground with wider river valleys. Consequently, the Slate Belt has been favored for reservoir sites (Johnson 1972).

In Union County, the underlying geology consists primarily of granite, gneiss, schist, gabbro, diorite, and alluvium. Dikes of material derived from minor rocks intrude into these major strata (Camp et al. 1975:62). The soils of the area are derived from the weathering of these materials.

Figure 5 identifies seven soil series or complexes in the 3.7-mile corridor, including Cartecay-Toccoa complex, Cecil sand loams, Hiwassee sandy loams, Louisburg loamy sand, Madison soils, Madison and Pacolet soils, and the Wehadkee-Chewacla complex.

The most common soils, comprising 48% of the corridor are Madison and Pacolet soils, with 15 to 40 percent slopes. The strong slopes tend to discourage archaeological settlement. These soils are generally found adjacent to streams and erosion is a significant threat. Soil profiles are generally grayish-brown (10YR5/2) in the A horizon, if present. At a depth of about 0.5 foot the B21t horizon consists of a red (2.5YR4/6) clay loam and from about 1.4 to about 2.8 feet there is a red (2.5YR4/6) clay.

Other Madison soils are the next most common, found on about 26.4% of the corridor. These include Madison sandy loam, 10 to 15 percent slopes; Madison sandy clay loam, 6 to 10 percent slopes, eroded; and Madison sandy clay loam, 10 to 15 percent slopes, eroded. Steep slopes and pre-existing erosion tend to reduce the likelihood finding intact archaeological sites on these soils. Under the best of circumstances, the A horizon, often plowed, will consist of grayish-brown (10YR5/2) sandy loam to a depth of up to 0.5 foot. Below is red clay (2.5YR4/6).

Louisburg loamy sands, 10 to 40 percent slopes, account for a little over 10% of the corridor and is found on side slopes. A typical profile may include up to 0.6 foot of dark-brown (10YR4/3) loam sand over a Bt horizon to 1.4 feet of yellowish-brown (10YR5/4) sandy clay loam. Below this is weathered gneiss.

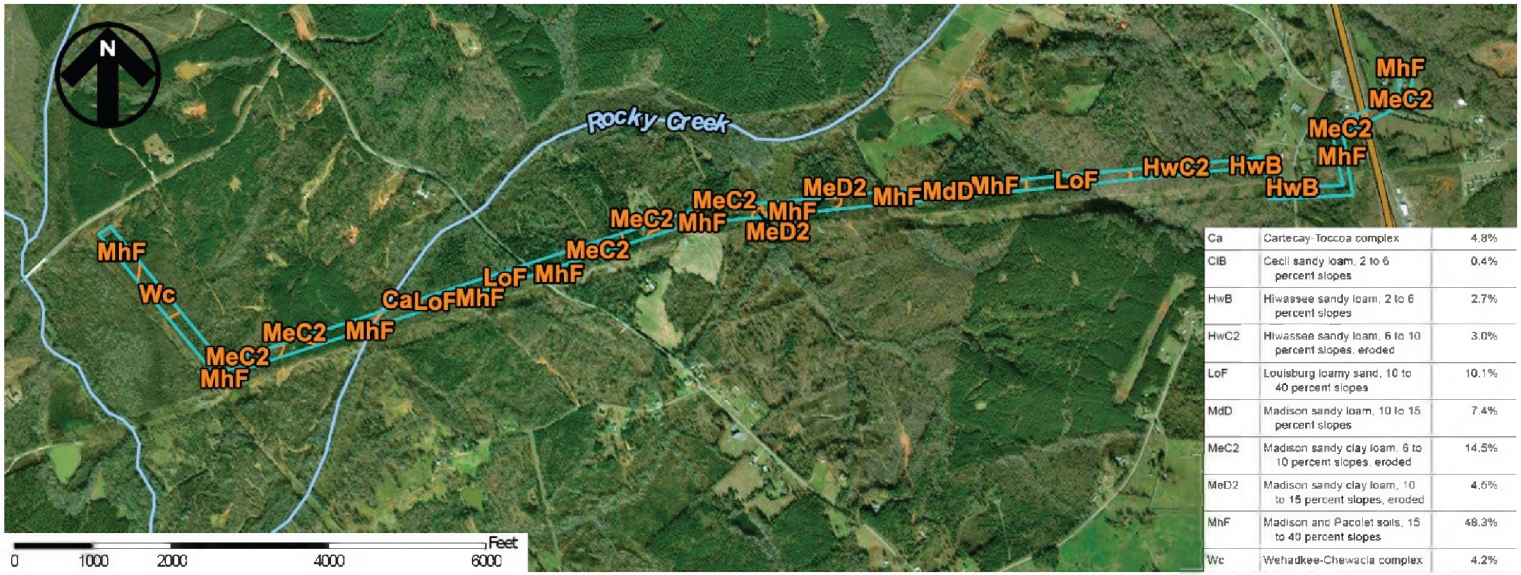
Three soils each account for between 4 and 5% of the corridor, including Hiwassee, Cartecay-Toccoa, and Wehadkee-Chewacla. The Hiawassee soils are dark red and were formed in alluvium, often with abundant weathered minerals. The Cartecay-Toccoa Complex is generally found on the first bottoms of streams subject to overflow. The soils tend to be wet and are unlikely choices for habitation. The Wehadkee-Chewacla Complex are often found in flood plains, often consisting of gravelly sandy loam. They, too, tend to be wet a good deal of the time.

Accounting for less than 1% of the corridor, the Cecil sandy loams that formed ion clayey and loamy material weathered from granite, gneiss, and schist. The typical profile may include an Ap horizon of 0.4 foot with brown (10YR5/3) sandy loam overlying a B1t horizon of yellowish-red (5YR5/8) sandy clay loam and a B21t horizon of red (2.5YR4/8) clay to a depth of about 1.8 feet.

Trimble (1974:15) identifies Union County as belonging to what he calls the "High Ante-Bellum ELU with Post-Bellum Continuation." He projects erosion of up to a foot of soil during nineteenth and early twentieth agricultural activities.

This was an area of extensive cotton planting. Mills (1972 [1826]) noted that while erosion was a problem, even in the first quarter of the nineteenth century, crops did well in the district:

> Clay is predominant in this district, mixed with sand, gravel,



Ca	Carteray-Toccoa complex	4.8%
CIB	Cecil sandy loam, 2 to 6 percent slopes	0.4%
HwB	Hiwassee sandy loam, 2 to 6 percent slopes	2.7%
HwC2	Hiwassee sandy loam, 6 to 10 percent slopes, eroded	3.0%
LoF	Louisburg loamy sand, 10 to 40 percent slopes	10.1%
MdD	Madison sandy loam, 10 to 15 percent slopes	7.4%
MeC2	Madison sandy clay loam, 6 to 10 percent slopes, eroded	14.5%
MeD2	Madison sandy clay loam, 10 to 15 percent slopes, eroded	4.6%
MhF	Madison and Pacolet soils, 15 to 40 percent slopes	48.3%
Wc	Wehadkee-Chewacla complex	4.2%

Figure 5. Soils in the project corridor.

Figure 6. Slopes on the project corridor.

Figure 7. Creeks and wetlands in the project corridor.

Figure 8. Disturbances and severe gullying in the project area.

Figure 9. General view of the transect showing dense vegetation.

> and rock. The county is very broken, and rolling; the land subject to wash. Where this is not the case, it is cultivated to great advantage . . . . The soil is very well adapted to the culture of cotton, particularly the lower parts of the district; the low grounds to Indian corn, and the high lands to wheat, rye, oats, barley, pease, and pumpkins. The sweet and Irish potato grows very well here (Mills 1972 [1826]:754-755).

Mills went on to warn that the situation was especially severe in Union:

> Large bodies of once good land have been destroyed by this mode of working it; and it is much to be feared, that, if a change does not soon take place, this district, instead of increasing, will decrease, in population, by the emigration of its citizens to the western country (Mills 1972 [1826]:755).

In spite of this early warning, the South Carolina Department of Agriculture, Commerce, and Immigration, as late as 1907, saw no reason to remark on the threat of erosion, noting only that the region was characterized by "very fertile valleys" and that adjacent Laurens, with no less erosion than Union, was considered the "second best cotton lands" in the state.

The problem continued to worsen, so that the Reconnaissance Erosion Survey (Lowry 1934) found most of the project area to be characterized by moderate sheet erosion and occasional gullies, although a few areas were noted as having severe sheet erosion. It was only with the agricultural reforms beginning in the 1930s and 1940s that this

erosion was brought under control.

Today the soils are largely stable if less vegetated and there is evidence that a new A horizon may be forming in some areas. Erosion, however, has been heightened where logging has taken place. In such areas, the Department of Agriculture (1983:25) suggests that logging can contribute about 0.36 ton of soil loss per year per acre (compared to the loss of 0.03 ton per year per acre in undisturbed areas).

Climate

Mills described the climate of Union as, "equable, mild, and temperate," going on to remark that its citizens "enjoy, generally, as good health as falls to the lot of any people" (Mills 1972 [1826]:760). The only significant problem he notes is the "bilious fevers" which were found in the lowlands, particularly around drainages during the autumn. This view was repeated in the 1907 account, when the city of Union was described as having "a delightfully healthful climate" (South Carolina Department of Agriculture, Commerce, and Immigration 1907:570).

Even today, the climate is described as temperate and is characterized by generally mild winters and rather warm summers. Rainfall measures about 47 inches a year with the wettest months historically being March and July, with May and October being the driest months. During the summer the temperatures reach 90°F or higher an average of 68 days per year. The winters are mild, and temperatures reach 32°F on at least half of the winter days.

The growing season lasts from about April 14 through October 31, accounting for the variety of crops readily grown in the region. Early freezes in the autumn and late frosts in the spring can reduce this period by as much as 20 days (Landers 1975:63). Consequently, most cotton planting, for example, did not take place until early May, avoiding the possibility that a late frost would damage the young seedlings.

Almost a third of the precipitation falls during the summer growing season, although droughts are common. Perhaps the best wide-scale example of this was the drought of 1845, which caused a series of very serious grain and food shortages throughout the state.

Floristics

Piedmont forests generally belong to the Oak-Hickory Formation as established as Braun (1950). The potential natural vegetation of the Union County area is the Oak-Hickory-Pine Forest, composed of medium tall to tall forests of broadleaf deciduous and needleleaf trees (Küchler 1964). The major components of this ecosystem include hickory, shortleaf pine, loblolly pine, white oak, and post oak.

In actuality, the Piedmont is composed of a patchwork of open fields, pine woodlots, hardwood stands, mixed stands, and second growth fields. Shelford (1963) includes the Carolina Piedmont in the Oak-Hickory zone of the Southern Temperate Deciduous Forest Biome. The floodplain forests include sweetgum, tulip poplar, ash, elm, and red maple. Beyond the floodplain are small sections of mixed mesophytic woodlands, which are typified by tulip poplar, beech, red oak, white oak, and hickories. The forest is open, allowing for the development of a shrub layer with numerous herbaceous species.

Mills noted that in the early nineteenth century there were few pine,

> but the principal timber trees are, the various species of oak, the hickory, poplar, maple, black walnut, chestnut, sycamore, birch, dogwood, persimmon, locust, beech, ash, and several others (Mills 1972 [1826]:761).

He also observes that fruit trees, likely at area plantations, included peach, apple, plum, pear, and nectarine. Many of these fruit trees are difficult to grow in the piedmont today because of the colder winters.

The study tract today bears little resembiance to the piedmont of 1826. Sections have been cleared for agriculture and are today growing up in second growth or noxious briars. While the old-field areas are relatively accessible, some lowlands exhibited dense woods. These areas, however, were generally on steep slopes where the probability of archaeological remains is low and the evidence of erosion is high.

Prehistoric and Historic Synthesis

Prehistoric Overview

Overviews for South Carolina's prehistory, while of differing lengths and complexity, are available in virtually every compliance report prepared. There are, in addition, some "classic" sources well worth attention, such as Joffre Coe's Formative Cultures (Coe 1964), as well as some new general overviews (such as Sassaman et al. 1990 and Goodyear and Hanson 1989). Also extremely helpful, perhaps even essential, are a handful of recent local synthetic statements, such as that offered by Sassaman and Anderson (1994) for the Middle and Late Archaic and by Anderson et al. (1992) for the Paleoindian and Early Archaic. Only a few of the many sources are included in this study, but they should be adequate to give the reader a "feel" for the area and help establish a context for the various sites identified in the study areas. For those desiring a more general synthesis, perhaps the most readable and well balanced is that offered by Judith Bense (1994), Archaeology of the Southeastern United States: Paleoindian to World War I. Figure 10 offers a generalized view of South Carolina's cultural periods.

Paleoindian Period

The Paleoindian Period, most commonly dated from about 12,000 to 10,000 B.P., is evidenced by basally thinned, side-notch projectile points; fluted, lanceolate projectile points; side scrapers; end scrapers; and drills (Coe 1964; Michie 1977; Williams 1965). Oliver (1981, 1985) has proposed to extend the Paleoindian dating in the North Carolina Piedmont to perhaps as early as 14,000 B.P., incorporating the Hardaway Side-Notched and Palmer Corner-Notched types, usually accepted as Early Archaic, as representatives of the terminal phase. This view, verbally suggested by Coe for a number of years, has considerable technological appeal.[1] Oliver suggests continuity from the Hardaway Blade through the Hardaway-Dalton to the Hardaway Side-Notched, eventually to the Palmer Side-Notched (Oliver 1985:199-200). While convincingly argued, this approach is not universally accepted.

The Paleoindian occupation, while widespread, does not appear to have been intensive. Artifacts are most frequently found along major river drainages, which Michie interprets to support the concept of an economy "oriented toward the exploitation of now extinct mega-fauna" (Michie 1977:124). Survey data for Paleoindian tools, most notably fluted points, is somewhat dated, but has been summarized by Charles and Michie (1992). They reveal a widespread distribution across the state (see also Anderson 1992b: Figure 5.1) with at least several concentrations relating to intensity of collector activity. What is clear is that points are found fairly far removed from the origin of the raw material. Charles and Michie suggest that this may "imply a geographically extensive settlement system" (Charles and Michie 1992:247).

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[1] While never discussed by Coe at length, he did observe that many of the Hardaway points, especially from the lowest contexts, had facial fluting or thinning which, "in cases where the side-notches or basal portions were missing, . . . could be mistaken for fluted points of the Paleo-Indian period" (Coe 1964:64). While not an especially strong statement, it does reveal the formation of the concept. Further insight is offered by Ward's (1983:63) all too brief comments on the more recent investigations at the Hardaway site (see also Daniel 1992).

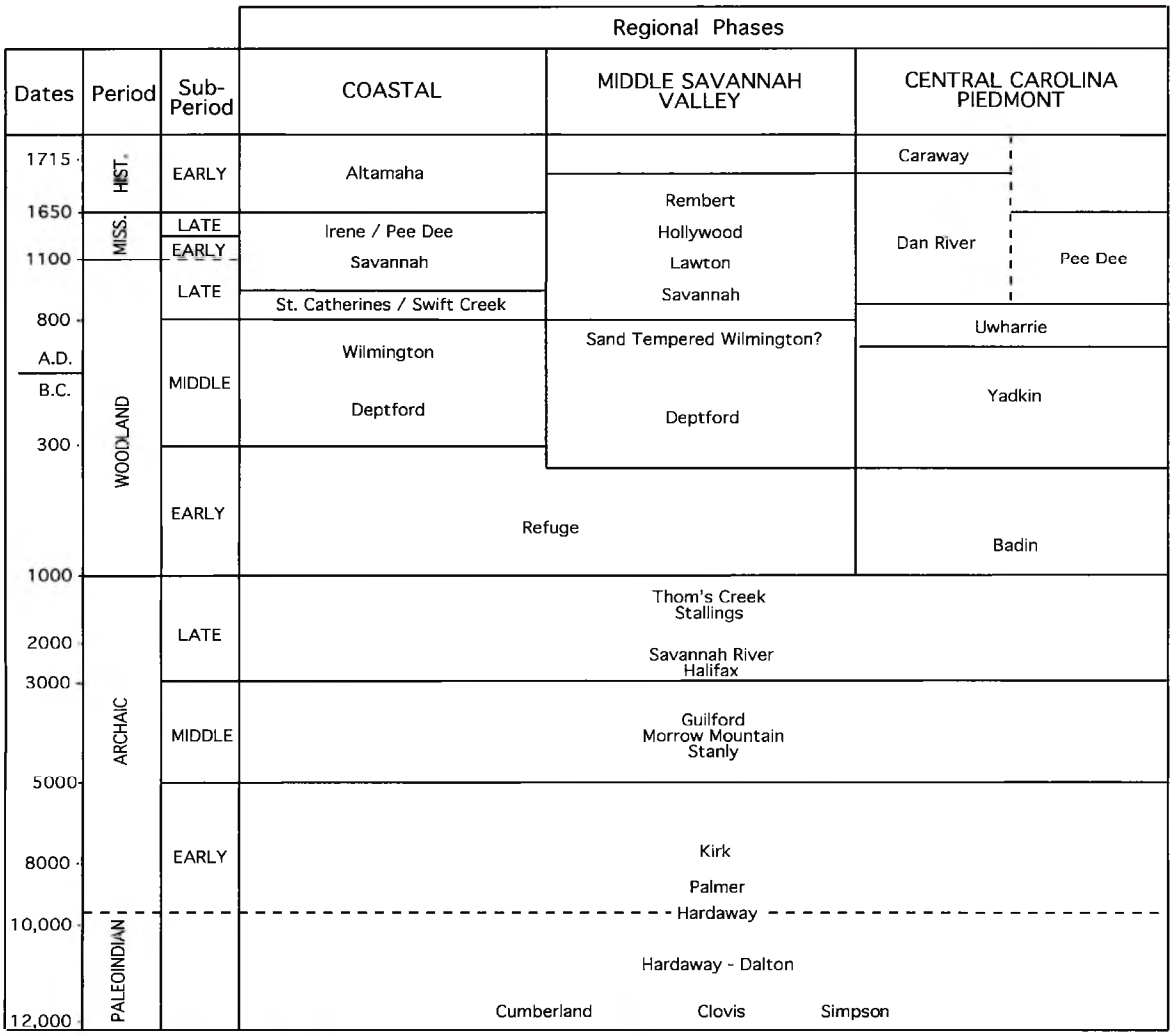

Figure 10. Generalized cultural sequences for South Carolina.

Although data are sparse, one of the more attractive theories that explains the widespread distribution of Paleoindian sites is the model tracking the replacement of a high technology forager (or HTF) adaptation by a "progressively more generalized band/microband foraging adaptation" accompanied by increasingly distinct regional traditions (perhaps reflecting movement either along or perhaps even between river drainages) (Anderson 1992b:46).

Distinctive projectile points include lanceolates such as Clovis, Dalton, perhaps the Hardaway, and Big Sandy (Coe 1964; Phelps 1983; Oliver 1985). A temporal sequence of Paleoindian projectile points was proposed by Williams (1965:24-51), but according to Phelps (1983:18) there is little stratigraphic or chronometric evidence for it. While this is certainly true, a number of authors, such as Anderson (1992a) and Oliver (1985) have assembled impressive data sets. We are inclined to believe that while often not conclusively proven by stratigraphic excavations (and such proof may be an unreasonable

expectation), there is a large body of circumstantial evidence. The weight of this evidence tends to provide considerable support.

Unfortunately, relatively little is known about Paleoindian subsistence strategies, settlement systems, or social organization (see, however, Anderson 1992b for an excellent overview and synthesis of what is known). Generally, archaeologists agree that the Paleoindian groups were at a band level of society, were nomadic, and were both hunters and foragers. While population density, based on isolated finds, is thought to have been low, Waithall suggests that toward the end of the period, "there was an increase in population density and in territoriality and that a number of new resource areas were beginning to be exploited" (Waithall 1980:30).

Archaic Period

The Archaic Period, which dates from 10,000 to 3,000 B.P.[2], does not form a sharp break with the Paleoindian Period, but is a slow transition characterized by a modern climate and an increase in the diversity of material culture. Associated with this is a reliance on a broad spectrum of small mammals, although the white tailed deer was likely the most commonly exploited animal. Archaic period assemblages, exemplified by corner-notched and broad-stemmed projectile points, are fairly common, perhaps because the swamps and drainages offered especially attractive ecotones.

Many researchers have reported data suggestive of a noticeable population increase from the Paleoindian into the Early Archaic. This has tentatively been associated with a greater emphasis on foraging. Diagnostic Early Archaic artifacts include the Kirk Corner Notched point. As previously discussed, Palmer points may be included with either the Paleoindian or the Archaic period, depending on theoretical perspective. As the climate became hotter and drier than the previous Paleoindian period, resulting in vegetational changes, it also affected settlement patterning as evidenced by a long-term Kirk phase midden deposit at the Hardaway site (Coe 1964:60). This is believed to have been the result of a change in subsistence strategies.

Settlements during the Early Archaic suggest the presence of a few very large, and apparently intensively occupied, sites that can best be considered base camps. Hardaway might be one such site. In addition, there were numerous small sites which produce only a few artifacts – these are the "network of tracks" mentioned by Ward (1983:65). The base camps produce a wide range of artifact types and raw materials that has suggested too many researchers long-term, perhaps seasonal or multi-seasonal, occupation. In contrast, the smaller sites are thought of as special purpose or foraging sites (see Ward 1983:67).

Middle Archaic (8,000 to 6,000 B.P.) diagnostic artifacts include Morrow Mountain, Guilford, Stanly, and Halifax projectile points. Much of our best information on the Middle Archaic

[2] The terminal point for the Archaic is no clearer than that for the Paleoindian and many researchers suggest a terminal date of 4,000 B.P. rather than 3,000 B.P. There is also the question of whether pottery, such as the fiber-tempered Stallings ware, will be included as Archaic, or will be included with the Woodland. Oliver, for example, argues that the inclusion of ceramics with Late Archaic attributes "complicates and confuses classification and interpretation needlessly" (Oliver 1981:20). He comments that according to the original definition of the Archaic, it "represents a preceramic horizon" and that "the presence of ceramics provides a convenient marker for separation of the Archaic and Woodland periods" (Oliver 1981:21). Others would counter that such an approach ignores cultural continuity and forces an artificial, and perhaps unrealistic, separation. Sassaman and Anderson (1994:38-44), for example, include Stallings and Thom's Creek wares in their discussion of "Late Archaic Pottery." While this issue has been of considerable importance along the Carolina and Georgia coasts, it has never affected the Piedmont, which seems to have embraced pottery far later, well into the conventional Woodland period. The importance of the issue in the nearby Sand Hills, unfortunately, is not well known.

comes from sites investigated west of the Appalachian Mountains, such as the work by Jeff Chapman and his students in the Little Tennessee River Valley (for a general overview see Chapman 1977, 1985a, 1985b). There is good evidence that Middle Archaic lithic technologies changed dramatically. End scrapers, at times associated with Paleoindian traditions, are discontinued, raw materials tend to reflect the greater use of locally available materials, and mortars are initially introduced. Associated with these technological changes there seem to also be some significant cultural modifications. Prepared burials begin to occur more commonly and storage pits are identified. The work at Middle Archaic river valley sites, with their evidence of a diverse floral and faunal subsistence base, seems to stand in stark contrast to Caldwell's Middle Archaic "Old Quartz Industry" of Georgia and the Carolinas, where axes, choppers, and ground and polished stone tools are very rare.

Among the most common of all Middle Archaic artifacts is the Morrow Mountain Stemmed projectile point that was originally divided into two varieties by Coe (1964:37,43) based primarily on the size of the blade and the stem. Morrow Mountain I points had relatively small triangular blades with short, pointed stems. Morrow Mountain II points had longer, narrower blades with long, tapered stems. Coe suggested a temporal sequence from Morrow Mountain I to Morrow Mountain II. While this has been rejected by some archaeologists, who suggest that the differences are entirely related to the life-stage of the point, the debate is far from settled and Coe has considerable support for his scenario.

The Morrow Mountain point is also important in our discussions since it represents a departure from the Carolina Stemmed Tradition. Coe has suggested that the groups responsible for the Middle Archaic Morrow Mountain (and the later Guilford points) were intrusive ("without any background" in Coe's words) into the North Carolina Piedmont, from the west, and were contemporaneous with the groups producing Stanly points (Coe 1964:122-123; see also Phelps 1983:23). Phelps, building on Coe, refers to the Morrow Mountain and Guilford as the "Western Intrusive horizon." Sassaman (1995) has recently proposed a scenario for the Morrow Mountain groups that would support this west-to-east time-transgressive process. Abbott and his colleagues, perhaps unaware of Sassaman's data, dismiss the concept, commenting that the shear distribution and number of these points "makes this position wholly untenable" (Abbott et al. 1995:9).

The controversy surrounding Morrow Mountain also includes its posited date range. Coe (1964:123) did not expect the Morrow Mountain to predate 6500 B.P., yet more recent research in Tennessee reveals a date range of about 7500 to 6500 B.P. Sassaman and Anderson (1994:24) observe that the South Carolina dates have never matched the antiquity of their more western counterparts and suggest continuation to perhaps as late as 5500 B.P. In fact, they suggest that even later dates are possible since it can often be difficult to separate Morrow Mountain and Guilford points.

A recently defined point is the MALA. The term is an acronym standing for Middle Archaic and Late Archaic, the strata in which these points were first encountered at the Pen Point site (38BR383) in Barnwell County, South Carolina (Sassaman 1985). These stemmed and notched lanceolate points were originally found in a context suggesting a single-episode event with variation not based on temporal variation. The original discussion was explicitly worded to avoid application of a typology, although as Sassaman and Anderson (1994:27) note, the "type" has spread into more common usage. There are possible connections with both the Halifax points of North Carolina and the Benton points of the middle Tennessee River valley, while the "heartland" for the MALA appears confined to the lower middle Coastal Plain of South Carolina.

The available information has resulted in a variety of competing settlement models. Some argue for increased sedentism and a reduction of mobility (see Goodyear et al. 1979:111). Ward argues that the most appropriate model is one that

includes relatively stable and sedentary hunters and gatherers "primarily adapted to the varied and rich resource base offered by the major alluvial valleys" (Ward 1983:69). While he recognizes the presence of "inter-riverine" sites, he discounts explanations that focus on seasonal rounds, suggesting, "alternative explanations . . . [including] a wide range of adaptive responses." Most importantly, he notes that:

> the seasonal transhumance model and the sedentary model are opposite ends of a continuum, and in all likelihood variations on these two themes probably existed in different regions at different times throughout the Archaic period (Ward 1983:69).

Others suggest increased mobility during the Archaic (see Cable 1982). Sassaman (1983) has suggested that the Morrow Mountain phase people had a great deal of residential mobility, based on the variety of environmental zones they are found in and the lack of site diversity. The high level of mobility, coupled with the rapid replacement of these points, may help explain the seemingly large numbers of sites with Middle Archaic assemblages. Curiously, the later Guilford phase sites are not as widely distributed, perhaps suggesting that only certain microenvironments were used (cf. Ward [1983:68-69] who would likely reject the notion that substantially different environmental zones are, in fact, represented).

Recently Abbott et al. argue for a combination of these models, noting that the almost certain increase in population levels probably resulted in a contraction of local territories. With small territories, there would have been significantly greater pressure to successfully exploit the limited resources by more frequent movement of camps. They discount the idea that these territories could have been exploited from a single base camp without horticultural technology. Abbott and his colleagues conclude, "increased residential mobility under such conditions may in fact represent a common stage in the development of sedentism" (Abbott et al. 1995:9).

From excavations at a Sand Hills site in Chesterfield County, South Carolina, Gunn and his colleague (Gunn and Wilson 1993), offer an alternative model for Middle Archaic settlement. He accepts that the uplands were desiccated from global warming, but rather than limiting occupation, this environmental change made the area more attractive for residential base camps. Gunn and Wilson suggest that the open, or fringe, habitat of the upland margins would have been attractive to a wide variety of plant and animal species.

The Late Archaic, usually dated from 6,000 to 3,000 or 4,000 B.P., is characterized by the appearance of large, square stemmed Savannah River projectile points (Coe 1964). These people continued to intensively exploit the uplands much like earlier Archaic groups with, the bulk of our data for this period coming from the Uwharrie region in North Carolina.

One of the more debated issues of the Late Archaic is the typology of the Savannah River Stemmed and its various diminutive forms. Oliver, refining Coe's (1964) original Savannah River Stemmed type and a small variant from Gaston (South 1959:153-157), developed a complete sequence of stemmed points that decrease uniformly in size through time (Oliver 1981, 1985). Specifically, he sees the progression from Savannah River Stemmed to Small Savannah River Stemmed to Gypsy Stemmed to Swannanoa from about 5000 B.P. to about 1,500 B.P. He also notes that the latter two forms are associated with Woodland pottery.

This reconstruction is still debated with a number of archaeologists expressing concern with what they see as typological overlap and ambiguity. They point to a dearth of radiocarbon dates and good excavation contexts at the same time they express concern with the application of this typology outside the North Carolina Piedmont (see, for a synopsis, Sassaman and Anderson 1990:158-162, 1994:35).

In addition to the presence of Savannah River points, the Late Archaic also witnessed the introduction of steatite vessels (see Coe 1964:112-113; Sassaman 1993), polished and pecked stone artifacts, and grinding stones. Some also include the introduction of fiber-tempered pottery about 4000 B.P. in the Late Archaic (for a discussion see Sassaman and Anderson 1994:38-44). This innovation is of special importance along the Georgia and South Carolina coasts, but seems to have had only minimal impact in the uplands of South or North Carolina.

There is evidence that during the Late Archaic the climate began to approximate modern climatic conditions. Rainfall increased resulting in a more lush vegetation pattern. The pollen record indicates an increase in pine that reduced the oak-hickory nut masts that previously were so widespread. This change probably affected settlement patterning since nut masts were now more isolated and concentrated. From research in the Savannah River valley near Aiken, South Carolina, Sassaman has found considerable diversity in Late Archaic site types with sites occurring in virtually every upland environmental zone. He suggests that this more complex settlement pattern evolved from an increasingly complex socio-economic system. While it is unlikely that this model can be simply transferred to the Sand Hills of South Carolina without an extensive review of site data and micro-environmental data, it does demonstrate one approach to understanding the transition from Archaic to Woodland.

Woodland Period

As previously discussed, there are those who see the Woodland beginning with the introduction of pottery. Under this scenario, the Early Woodland may begin as early as 4,500 B.P. and continued to about 2,300 B.P. Diagnostics would include the small variety of the Late Archaic Savannah River Stemmed point (Oliver 1985) and pottery of the Stallings and Thoms Creek series. These sand tempered Thoms Creek wares are decorated using punctations, jab-and-drag, and incised designs (Trinkley 1976). Also potentially included are Refuge wares, also characterized by sandy paste, but often having only a plain or dentate-stamped surface (Waring 1968). Others would have the Woodland beginning about 3,000 B.P. and perhaps as late as 2,500 B.P. with the introduction of pottery that is cord-marked or fabric-impressed and suggestive of influences from northern cultures.

There remains, in South Carolina, considerable ambiguity regarding the pottery series found in the Sandhills and their association with coastal plain and piedmont types. The earliest pottery found at many sites may be called either Deptford or Yadkin, depending on the research or their inclination at any given moment.

The Deptford phase, which dates from 3050 to 1350 B.P., is best characterized by fine to coarse sandy paste pottery with a check stamped surface treatment. The Deptford settlement pattern involves both coastal and inland sites.

Inland sites such as 38AK228-W, 38LX5, 38RD60, and 38BM40 indicate the presence of an extensive Deptford occupation on the Fall Line and the Inner Coastal Plain/Sand Hills, although sandy, acidic soils preclude statements on the subsistence base (Anderson 1979; Ryan 1972; Trinkley 1980). These interior or upland Deptford sites, however, are strongly associated with the swamp terrace edge, and this environment is productive not only in nut masts, but in large mammals such as deer. Perhaps the best data concerning Deptford "base camps" comes from the Lewis-West site (38AK228-W), where evidence of abundant food remains, storage pit features, elaborate material culture, mortuary behavior, and craft specialization has been reported (Sassaman et al. 1990:96-98; see also Sassaman 1993 for similar data recovered from 38AK157).

Further to the north and west, in the Piedmont, the Early Woodland is marked by a pottery type defined by Coe (1964:27-29) as Badin. This pottery is identified as having very fine sand in the paste with an occasional pebble. Coe identified cord-marked, fabric-marked, net-

impressed, and plain surface finishes. Beyond this pottery, little is known about the makers of the Badin wares and relatively few of these sherds are reported from South Carolina sites.

Somewhat more information is available for the Middle Woodland, typically given the range of about 2,300 B.P. to 1,200 B.P. In the Piedmont and even into the Sand Hills, the dominant Middle Woodland ceramic type is typically identified as the Yadkin series. Characterized by a crushed quartz temper the pottery includes surface treatments of cord-marked, fabric-marked, and a very few linear check-stamped sherds (Coe 1964:30-32). It is regrettable that several of the seemingly "best" Yadkin sites, such as the Trestle site (31An19) explored by Peter Cooper (Ward 1983:72-73), have never been published.

Yadkin ceramics are associated with medium-sized triangular points, although Oliver (1981) suggests that a continuation of the Piedmont Stemmed Tradition to at least 1650 B.P. coexisted with this Triangular Tradition. The Yadkin in South Carolina has been best explored by research at 38SU83 in Sumter County (Blanton et al. 1986) and at 38FL249 in Florence County (Trinkley et al. 1993)

In some respects the Late Woodland (1,200 B.P. to 400 B.P.) may be characterized as a continuation of previous Middle Woodland cultural assemblages. While outside the Carolinas there were major cultural changes, such as the continued development and elaboration of agriculture, the Carolina groups settled into a lifeway not appreciably different from that observed for the previous 500-700 years. From the vantage point of the Middle Savannah Valley Sassaman and his colleagues note that, "the Late Woodland is difficult to delineate typologically from its antecedent or from the subsequent Mississippian period" (Sassaman et al. 1990:14). This situation would remain unchanged until the development of the South Appalachian Mississippian complex (see Ferguson 1971).

Historic Overview

Historical accounts of the territory encompassing the Union County area began with the Desoto expedition in 1540 (Swanton 1946). This territory was recognized by the Indians and the early settlers to be the hunting grounds of the Lower Cherokee (Logan 1859:6). During these early years, the principal source of interaction between the European settlers and the Cherokee involved a loosely organized trading network.

After the establishment of South Carolina in 1670, organization and delineation into more manageable territorial units began. In 1785, the Proprietors sectioned the new province into four counties. Present Union County was included in the largest of these, Craven County, although generally the boundary line for Craven is drawn in vicinity of Lake Marion northeastward to Kingstree. Nevertheless, Union remained Indian land until 1755 (Camp et al. 1975:1).

In 1769, the Ninety-Six District was created as one of the seven original judicial districts in South Carolina. Until 1791, it contained what are today the counties of Edgefield, McCormick, Abbeville, Laurens, Saluda, Union, Spartanburg, most of Cherokee and Newberry counties, as well as portions of Aiken and Greenville counties.

An early sparse influx of settlers from the north was composed mainly of cattlemen and Indian traders. These semi-permanent settlements were concentrated along the streams and rivers where land was productive and easily cleared. The first settlements in Union County were along Broad River, Browns Creek, and Tyger River (Camp et al. 1975:1). After the initial settlements of the 1750s, the white population did not increase until 1761, with the expulsion of the Native American population at the end of the Cherokee War (Latimer 1924:410). The second wave of settlement was spearheaded by farmers from the northern colonies of North Carolina, Virginia, Maryland, and Pennsylvania. The new farmers developed a self-sufficient system by planting flax,

tobacco, corn, wheat, and oats and raising hogs and cattle for their own use (Latimer 1924:410).

At the outset of the Revolutionary War, the population of the Carolina backcountry was quite diverse in its ethnic and religious background. These differences seemed to localize the hostilities with loyalists and rebels living side by side. In 1775, in an attempt to consolidate the revolutionary forces, William Drayton and William Tennent, were sent into the Piedmont territories to raise local forces.

Union County saw much fighting during the American Revolution. Mills (1972[1826]:762) states that,

> Union suffered much during the revolution, from its exposure to the depredations of the tories and Indians. Col. Williams, of the district of Ninety-six, on the 18th of August, 1780, attacked a considerable party of British and tories, at Musgrove's mills, on the Enoree river, south-west corner of the district. Col. Innis, of the South Carolina royalists, was wounded, and the whole of his party obliged to retire. Previous to this, (July 12th,) Sumter defeated a detachment of British troops, and a large body of tories, at Williams' plantation, near Broad river. In November following, at the Fishdam ford, on the same river, Gen. Sumter, aided by the gallant Colonel Thomas Taylor, defeated Major Weyms, commanding a corps of infantry and dragoons; and took this officer prisoner. On the 20th of the same month, occurred the noted battle of the Black stocks, at the crossing of the Tyger river, near the west line of the district; where General Sumter defeated Lieut. Colonel Tarleton, at the head of a considerable body of horse and infantry. The action was severe, and obstinate. The killed and wounded of the British were many. . . (Mills 1972[1826]: 762).

He also added that frequent skirmishes occurred between the Americans and their adversaries on the Enoree, Broad, and Tyger rivers.

Mouzon's 1775 *An Accurate Map of North and South Carolina* (Figure 11) shows the project area as available for settlement, but entirely open. North of Union Mouzon shows the intersection of two major trading paths — one from the "Cherokees" northeastward into North Carolina and another from the Pacolet River paralleling the Broad River to what would become Columbia and from there continuing southward to the coast.

In 1785, the state legislature formed Union, encompassing present-day Union County as well as a portion of neighboring Cherokee County. By 1791, Pinckney District was created,

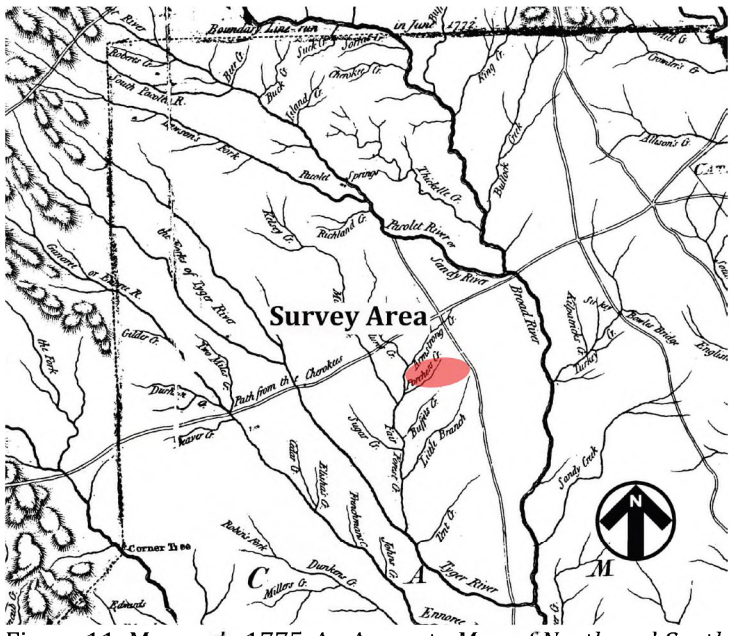

Figure 11. Mouzon's 1775 *An Accurate Map of North and South Carolina* showing the project area.

incorporating what are today Spartanburg, Cherokee, York, Chester, and Union counties. In 1800, Union District was created from Pinckney, using the boundaries of the present county.

Although the town of Union, then called Unionville, was established by 1791, around the "Union" church where Episcopalian and Presbyterian congregations met, it was at least briefly eclipsed by the rise of Pinckneyville on the Broad River. Pinckneyville acquired the district courthouse and jail, and was a thriving community for a short period before being abandoned in favor of Unionville.

By 1800, the district's population was 10,277. Of those, 1,697 (or 16.5%) were slaves. By 1820, the population had increased to 14,126 with 4,278 (or 30.3%) being slaves. In the 1820s Mills (1972 [1826]:760) noted that while the population was still increasing, it was "considerably retarded by emigrations to the western states; principally at present, to Alabama." Mills notes that Unionville contained about 20 houses and had 200 residents.

Mills' Atlas (1825) shows that while rivers and streams were important to settlement, the emerging road network greatly influenced the nineteenth century settlement pattern. Brooks and Crass (1991) and Taylor (1984) have noted the increased influence of road networks on settlement patterning of the nineteenth century. The atlas also shows a large number of grist and sawmills indicating their importance to the area. Figure 12 shows the project area in relation to features on *Mills' Atlas* (1825). While settlements may have existed in the area, none is shown.

The 1830s were a period of emerging florescence for this area. The invention of the cotton gin in the late eighteenth century, improved roads, and seemingly limitless waterpower, provided for the beginnings of a cotton manufacture in 1830 with the first cotton mills appearing on the Tyger River as early as 1816-1818 (Kennedy 1940:73). Edgar reports that by 1810 the lower piedmont, including Union, was a major producer of cotton (Edgar 1998:271). Between 1794 and 1800, South Carolina's cotton production increased from less than 100,000 pounds to 20 million pounds. This helps explain both the explosion of wealth, and slavery, in the South Carolina backcountry.

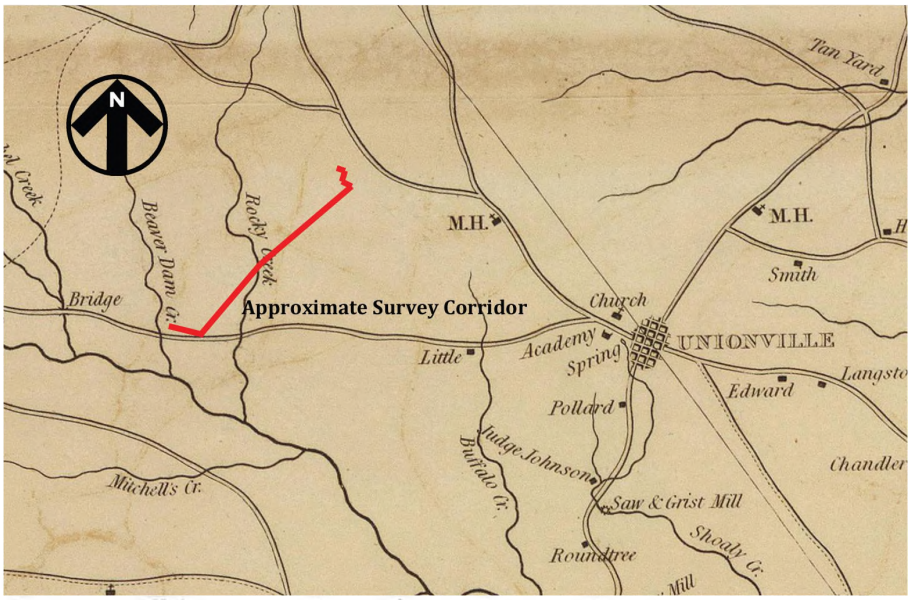

Figure 12. Mills' *Atlas* showing settlement in the project area.

Edgar offers a few glimpses of Union District's slavery. Commenting on the regime of cotton, one Union slave remembered, "we picked cotton by de light of de moon" (Edgar 1998:315). Equally telling is the account of Union District's William Farr who bequeathed half of his $60,000 (nearly $1 million in 2001 dollars) estate in trust "for the care of his mulatto mistress and their child" (Edgar 1998:307).

Very little Civil War activity took place in the Union district. However, Sherman's army passed along its eastern boundary in 1864, traveling up the Broad River on their way to Charlotte, North Carolina.

After the Civil War, a steady rise in industrial and commercial development brought many changes stimulating growth in the economy and population. Although Union County is reported to have suffered immeasurable monetary loss in its investments into Confederate currency, a general prosperity seemed to have returned as soon as the late 1860s, with trading reopening in the spring of 1867.

Immediately after the Civil War cotton prices peaked, causing many Southerners to focus, once again, on cotton. The largest problem, however, was labor. While some freedmen stayed on to work, others wished to have part in growing cotton for others and left. The hiring of freedmen began immediately after the war with variable results.

In 1884, the labor system of Union County was described as sharecropping (News and Courier 1884). Sharecropping required the tenant to pay his landlord part of the crop produced. The tenant supplied the labor and one-half of the fertilizer, the landlord supplied everything else — land, house, seed, tools, work animals, animal feed, wood for fuel, and the other half of the needed fertilizer.

The report indicated that about two-thirds of the field labor was being supplied by African Americans, although the Union County reporter complained that "for the younger ones [African Americans], with very few exceptions, it is difficult to conceive a more hopeless outlook than they offer." Regardless, male labor was paid about $100 a year, while females garnered only $50 a year. There were about 400 farms worked by whites and 300 worked by blacks.

In the 1870s and 1880s, the manufacture of cotton developed rapidly. The post-Civil War economy's need for a cash crop was readily met by intensive "one-crop" cotton farming. In the 1880s, of the 87,900 acres planted in crops, 43,950 were planted in cotton. The remaining acreage was planted in corn (12,850 acres), oats (1,500 acres), wheat (12,000 acres), rye and barley (1,500 acres), and sweet potatoes (2,600 acres). Despite the large quantity of cotton being planted, none was being milled in the district in this period. Manufactories consisted primarily of flour, grist, and lumber mills (News and Courier 1884). There were no cotton mills at the time.

In spite of the sense of prosperity, Union was a Klan hotbed. The Writers' Program (1941) briefly mentions one riot in the area that claimed the lives of several African American militiamen. Edger remarks that, "violence was one of the legacies of Civil War and Reconstruction, especially of the insurgency (1868-1877) mounted by the state's white minority against the Reconstruction regime" (Edgar 1998:417).

The value of the yearly cotton crop in the city of Union was quite high, only to be outdone by Columbia and Anderson. By 1907, Union County had six cotton mills including, Aetna, Excelsior, Jonesville, Lockhart, Monarch, and Union Buffalo (South Carolina Department of Agriculture, Commerce, and Immigration 1907:462). Since these mills were constructed in rural areas with no urban support, they had to provide housing for their workers. The promise of steady work and housing which was maintained by the mill attracted a large number of landless whites (mostly tenants and sharecroppers) to leave their rural homes at the turn of the century.

Although the working conditions were often poor, the hours long, the wages low, and the young children often exploited, life in the mill village was thought to be an improvement over the living conditions that most workers had formerly led in the rural areas.

In 1920, Union County reported 2,817 farms encompassing 251,453 acres, or about 89 acres per farm. There were 112,301 acres of improved farmland, or nearly 40 acres (45%) per

farm. The average farm value was $4,221 ($34,359 in 2001dollars). Yet 75.9% of the farms were operated by tenants, and 86.3% of these were African Americans.

While cotton prices began high early in 1921, the dropped quickly and steadily — to the point where farmers had paid nearly twice as much planting their cotton as they would see in return. This began a decade of severe agricultural depression.

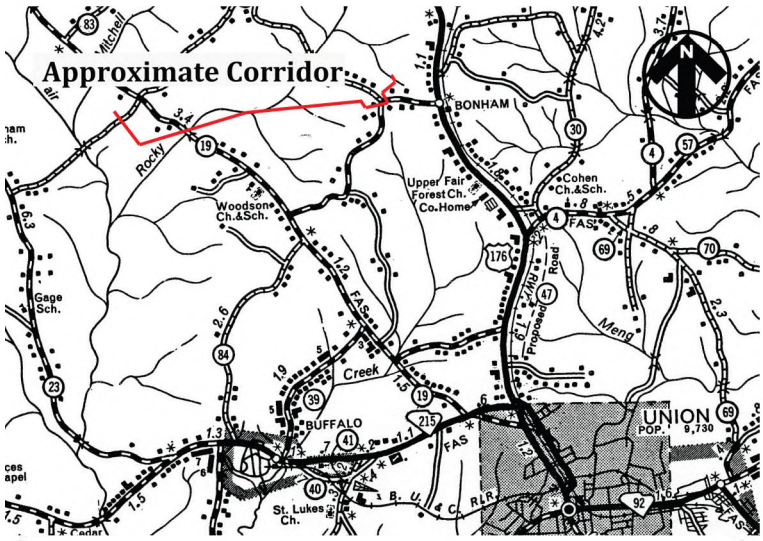

Figure 13. 1950 *General Highway and Transportation Map* of a portion of Union County showing the approximate survey corridor.

As were all areas, Union County was hit hard by the 1929 depression. Agricultural lands were in poor condition. Much of the topsoil had washed away and though the additional of fertilizers helped, continued erosional practices offset their benefits. With the economic difficulties, animosities arose between town and country, management and worker, landowner and tenant.

Union County, in 1930, saw the number of farms reduced to 2,538. The average size was down to 74.1 acres and of this acreage, only 43% was improved. The average value of the farm dropped to $2,111 ($21,036 in 2001 dollars). The number being operated by tenants rose slightly, to 76.3%, although the outward migration of African Americans resulted in only 67% of the tenants being black. The economic condition is also clearly indicated by the mortgage rate. Statewide a third of the farms were mortgaged. In Union County, the number was slightly higher — around 35%. In neighboring Laurens County, however, the problem was far worse, with 43% of the farms mortgaged.

Cotton production suffered dramatic reductions. The 42,728 acres planted in cotton for 1920 was reduced to 36,536 acres. In addition, Union County's yield was only 13,270 bales in 1930. Nevertheless, Union County remained a predominantly rural area with agriculture as its leading pursuit.

Figure 13 shows the project area in 1950. US 176 (today SC 18) follows the approximate route of the main northerly road shown on Mills' Atlas. Mills' "Meeting House" is shown in 1950 as the "Upper Fair Forest Ch." While a variety of houses is shown near the project, all are adjacent to the road network and these maps are notoriously inaccurate. No settlement is shown at the terminus of the project, near the proposed substation.

Previous Archaeological Investigations

The bulk of archaeological investigations in Union County consist of surveys in the Sumter National Forests or surveys associated with highway construction. Most of this work suggests that both historic and prehistoric sites are located on ridges or ridge noses (see, for example, Cable et al. 1978; Price 1993). Although no mills were located by Price (1993) in his survey of several forest stands in the Sumter Nation Forest, Mills' Atlas (1825) indicates that they were numerous

and are usually found adjacent to creek and river shoals. During an archaeological survey of the Abner and Maple Creek proposed sewer line, Adams and Trinkley (1992:12) located the remains of a structure adjacent to shoals that may have served as a mill. While these structures appear difficult to identify archaeologically, there are no high probability mill locations in the survey tract.

Very little historical archaeology has been conducted in the county. The only site to have received any excavation, albeit limited, is 38UN1, Pinckneyville, by Dick Carrillo (1972). Pinckneyville was established in 1791 to serve as a judicial district seat for the present Chester, Spartanburg, Union and York. The town was only in existence for nine years.

The sites identified in or near the corridor were all recorded during the US 176 By-Pass survey (Cable et al. 1978). The report of this survey, however, discusses only the six sites identified as eligible. The information concerning the remaining sites, including those associated with this investigation, is limited to the site forms, but all were assessed as not eligible for inclusion on the National Register of Historic Places.

38UN34 was identified in an existing power line easement at approximately E439780 N384890 and consisted of one unidentifiable quartz biface tip, one possible quartz biface, one possible quartz scraper, 16 quartz flakes, six fragments of quartz shatter, and one chert flake. The soil was identified as heavily eroded and the site also had been impacted by previous cultivation and the construction of the power line.

38UN35 is identified as located at E439580 N3848120 on a cultivated ridge top. Recovered materials included 20 historic artifacts (white porcelain, alkaline glazed stoneware, whiteware, glass, a 1959 penny, and a plastic button), 19 quartz flakes, 13 fragments of quartz shatter, one chert flake, two andesite flakes, and a small sherd. Scattered over approximately 322,900 square feet (7.4 acres), the site form notes that the site was "very sparse" and no loci were noted.

38UN43 was described as "mostly eroded" and disturbed by "plowing, road clearing, house construction, and sheet erosion." The approximate UTM coordinates were E439840 N3847910 on a ridge top. Recovered artifacts included one possible quartz biface and 25 quartz flakes.

38UN82 is the largest of the sites (no dimensions are reported), located at UTM E436000 N3847630. Although the site form suggests the site might have been a quarry site, it is described as, "area totally destroyed by logging activities, [and] road cuts." Recovered materials include two quartz biface fragments, three core fragments, 103 quarts flakes, and 34 fragments of quartz shatter. The form also reported abundant natural quartz.

38UN89 is reported to be situated at UTM E439770 N3847850 and consisted of an isolated find of a single quartz flake.

Chicora Foundation conducted an archaeological survey of a nearby 105-acre industrial tract site in 1993 (Adams 1993). Because of that investigation three additional sites were identified, 38UN485-487. Two of these sites (38UN485 and 38UN487) are historic scatters, perhaps representing early to mid-twentieth century tenant or farm units. The third site, 38UN486, represented a small scatter of prehistoric and historic remains. While two quartz biface fragments were recovered, no prehistoric diagnostics were found. The historic remains were twentieth century, although not in sufficient quantity to suggest a domestic context. All three sites were recommended not eligible. This survey also sought to relocate two previously recorded sites, 38UN24 and 38UN26, but this proved unsuccessful. It was suggested at the time that, "since both sites contained few remains, it is likely that they were completely collected during the previous survey or by local collectors" (Adams 1993:12).

Because of the presence of several ridges and ridge noses, well-drained soils, previously identified sites, and the proximity of Buffalo Creek and several intermittent streams, the project area

was believed to have a high probability of containing both historic and prehistoric sites. The likelihood, however, of identifying any sites with good contexts (high integrity) was considered low because of extensive erosion and heavy modifications of the property.

Methods

Archaeological Field Methods

The initially proposed field techniques involved the placement of shovel tests at 100-foot intervals along the centerline of the corridor, which was staked at the time of the survey. Since the corridor is only 70 feet in width, a single transect was deemed satisfactory.

All soil would be screened through ¼-inch mesh, with each test numbered sequentially along the corridor (corresponding to the station number). Each test would measure about 1 foot square and would be taken to a depth of at least 1.0 foot or until subsoil was encountered. All cultural remains would be collected, except for mortar and brick, which would be quantitatively noted in the field and discarded. Notes would be maintained for profiles at any sites encountered.

Should sites (defined by the presence of three or more artifacts from either surface survey or shovel tests within a 50 feet area) be identified, further tests would be used to obtain data on site boundaries, artifact quantity and diversity, site integrity, and temporal affiliation. For small or very recent sites, these tests would be placed at 25 to 50 feet intervals in a simple cruciform pattern until two consecutive negative shovel tests were encountered. For larger sites or sites where we felt there was a potential for National Register eligibility, shovel tests would incorporate the entire site within the project corridor. Again, shovel tests would be placed at 25 to 50 foot intervals. We are precluded from examining areas outside the corridor by the easements obtain by Central Carolina Power Cooperative.

The information required for completion of South Carolina Institute of Archaeology and Anthropology site forms would be collected and photographs would be taken, if warranted in the opinion of the field investigator.

At the proposed substation, these methods would be varied only by the placement of transects through the impact area at 100 foot intervals, with shovel tests on those transects at 100 feet.

These proposed techniques were implemented with no modifications. A total of 183 shovel tests were excavated along the centerline of the corridor and an additional 15 shovel tests were placed in the proposed substation lot. Only where the 100-foot station was in a roadway or wet area were shovel tests not excavated.

The GPS positions were taken with a WAAS enabled Garmin 76 rover that tracks up to twelve satellites, each with a separate channel that is continuously being read. The benefit of parallel channel receivers is their improved sensitivity and ability to obtain and hold a satellite lock in difficult situations, such as in forests or urban environments where signal obstruction is a frequent problem. This was a vital concern for the study area.

Architectural Survey

As previously discussed, we elected to use a 100-foot area of potential effect (APE). The architectural survey would record buildings, sites, structures, and objects that appeared to have been constructed before 1950. Typical of such projects, this survey recorded only those which have retained "some measure of its historic integrity" (Vivian 2001:5) and which were visible from public roads.

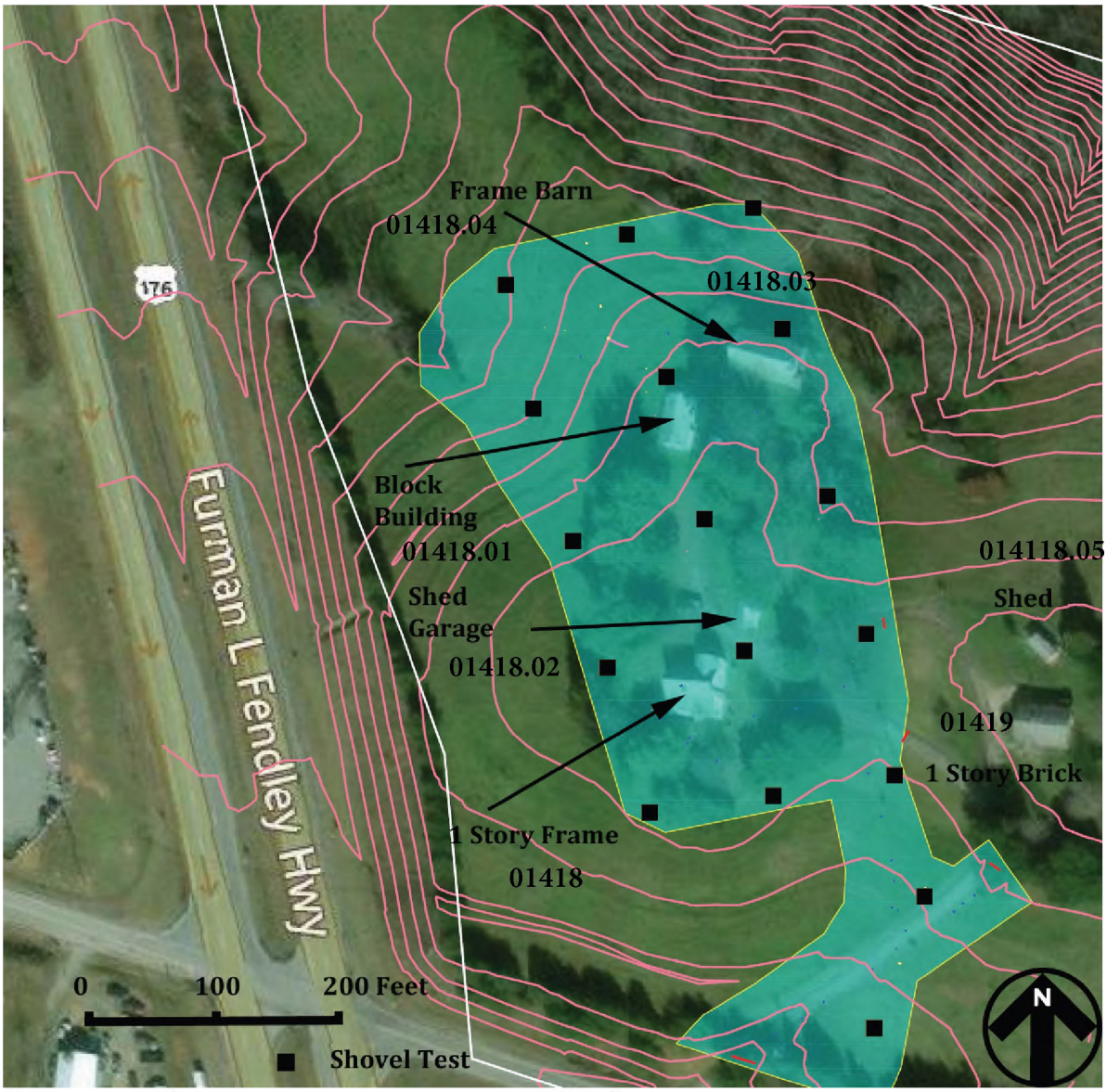

Figure 14. Shovel testing and structures on the substation lot.

For each identified resource, we would complete a Statewide Survey Site Form and at least two representative photographs were taken. The Survey Staff of the S.C. Department of Archives and History would assign permanent control numbers at the conclusion of the study. The Site Forms for the resources identified during this study would be submitted to the S.C. Department of Archives and History.

Site Evaluation

Archaeological sites would be evaluated for further work based on the eligibility criteria for the National Register of Historic Places. Chicora Foundation only provides an opinion of National Register eligibility and the final determination is

made by the lead federal agency, in consultation with the State Historic Preservation Officer at the South Carolina Department of Archives and History.

The criteria for eligibility to the National Register of Historic Places is described by 36CFR60.4, which states:

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

National Register Bulletin 36 (Townsend et al. 1993) provides an evaluative process that contains five steps for forming a clearly defined explicit rationale for either the site's eligibility or lack of eligibility. Briefly, these steps are:

- identification of the site's data sets or categories of archaeological information such as ceramics, lithics, subsistence remains, architectural remains, or sub-surface features;

- identification of the historic context applicable to the site, providing a framework for the evaluative process;

- identification of the important research questions the site might be able to address, given the data sets and the context;

- evaluation of the site's archaeological integrity to ensure that the data sets were sufficiently well preserved to address the research questions; and

- identification of important research questions among all of those that might be asked and answered at the site.

This approach, of course, has been developed for use documenting eligibility of sites being actually nominated to the National Register of Historic Places where the evaluative process must stand alone, with relatively little reference to other documentation and where typically only one site is being considered. As a result, some aspects of the evaluative process have been summarized, but we have tried to focus on an archaeological site's ability to address significant research topics within the context of its available data sets.

For architectural sites, the evaluative process was somewhat different. Given the relatively limited architectural data available for most of the properties, we focus on evaluating these sites using National Register Criterion C, looking at the site's "distinctive characteristics." Key to this concept is the issue of integrity. This means that the property needs to have retained, essentially intact, its physical identity from the historic period.

Particular attention would be given to the

integrity of design, workmanship, and materials. Design includes the organization of space, proportion, scale, technology, ornamentation, and materials. As *National Register Bulletin* 36 observes, "Recognizability of a property, or the ability of a property to convey its significance, depends largely upon the degree to which the design of the property is intact" (Townsend et al. 1993:18). Workmanship is evidence of the artisan's labor and skill and can apply either to the entire property or to specific features of the property. Finally, materials – the physical items used on and in the property – are "of paramount importance under Criterion C" (Townsend et al. 1993:19). Integrity here is reflected by maintenance of the original material and avoidance of replacement materials.

Laboratory Analysis

The cleaning and analysis of artifacts that might be collected would be conducted in Columbia at the Chicora Foundation laboratories. Any such materials will be catalogued and accessioned for curation at the South Carolina Institute of Archaeology and Anthropology, the closest regional repository. The site forms for the identified archaeological sites will be filed with the South Carolina Institute of Archaeology and Anthropology. Field notes from the project have been prepared for curation using archival standards and will be transferred to that agency as soon as the project is complete. Photographic materials are either digital and are not archival – they are being retained by Chicora Foundation.

Should materials be recovered requiring analysis that work will follow professionally accepted standard with a level of intensity suitable to the quantity and quality of the remains.

In general, the temporal, cultural, and typological classifications of prehistoric materials are defined by such authors as Coe (1964), Yohe (1996), Blanton et al. (1986), and Oliver et al. (1986). Historic materials, generally late nineteenth or early twentieth century, are generally classified using such authors as Jones and Sullivan (1980) for glass and Adams (1980), Bartovics (1978), and Price (1979) for ceramics.

Survey Results

Archaeological Sites

No archaeological sites were identified in the transmission corridor. This is almost certainly the result of very steep slopes over much of the corridor, combined with significant erosion, which continued into twentieth century logging. Gullies are still visible in several locations.

Even on the substation lot, where there is clearly a historic settlement, we failed to identify any subsurface remains. This is likely explained by two factors. The first is a changing refuse disposal pattern on twentieth century farms, where trash was collected and either disposed of in ravines or burned. In either case, these activities took place some distance from the dwellings. The second is that the structures are still standing (although the barn is in ruinous condition), so they have not contributed to the archaeological assemblage.

A serious effort was made to identify any evidence of the three archaeological sites that were thought to be in the project corridor, although all three had been previously determined not eligible in 1978 (Cable et al. 1978:iii).

In the case of **38UN34,** the site was apparently associated with the edge of the road and the associated power line cut. The 26 items recovered were spread over approximately 2.5 acres – yielding a density of 1 artifact every 4,140 square feet. Today the area appears even more intensively cultivated than it was in 1978, based on aerial photographs. We suspect this site has been destroyed, either by cultivation and erosion, or by the previous collection. Two shovel tests were placed in the vicinity in the current study corridor

Site **38UN35** produced 57 artifacts in 1978, but these were spread over an area of nearly 7.5 acres, with a density of 1 artifact every 5,700 square feet. In fact, the collectors at the time noted that there was a "very sparse artifact scatter." Regardless, the current alignment is found at the southern edge of this site and it remains possible that the site or some portion of it will still be found to the north of this project. One shovel test was placed in the study corridor in the approximate area of the site.

The final site, 38UN82, is the largest of the three, apparently covering 47+ acres, although the site form reports that less than a single acre was actually "investigated." This investigation produced 142 artifacts, yielding a density of 1 artifact every 190 square feet. Nevertheless, in 1978 the investigators reported that timbering and numerous logging roads had destroyed the site. Since that time, it has been logged at least one additional time (prior to 2006) and traces of that work remain today. It is consequently not surprising that nothing was found in the 100-foot shovel testing for the proposed Central Electric corridor (with approximately three shovel tests in the vicinity of the site.

Architectural Sites

No structures are present in the corridor or within the defined APE. The structures that are present in the area have all be assessed as not eligible for inclusion on the National Register.

A variety of structures is present on and immediately adjacent to the proposed substation lot. Within the area of disturbance is a one-story frame structure (01418), a block building (01418.01), a frame garage (01418.02), a frame shed (01418.03), a frame barn in ruinous condition (01418.04), and a frame tractor or wood shed

Figure 15. Farmhouse (01418) on the substation lot. Top picture shows the front, the bottom picture is an oblique view with the block structure in the background.

Figure 16. View of block building (01418.01) (top) and an oblique view of the wood frame garage (01418.02) (bottom).

Figure 17. View of the small shed (01418.03) (top) and the barn (01418.04) in ruinous condition (bottom).

Figure 18. View of the frame tractor or wood shed (01418.05) (top) and recent brick structure (01419) (bottom).

Figure 19. Left side view of the modern brick structure (01419).

(01418.05). These represent a ca. 1920 farmstead, today abandoned and scheduled for demolition associated with the construction of the substation. These structures are assessed as not eligible for inclusion on the National Register of Historic Places.

Although the substation was investigated for archaeological remains associated with this farmstead, none was found.

Immediately outside the area of distance are a one-story brick structure (014819), and an additional modern shed. These structures are also recommended not eligible for inclusion on the National Register.

Conclusions

This study involved the examination of about 3.7 miles of corridor proposed for the use of a transmission line extending from an existing line eastward to a proposed new substation in the northwest quadrant of Union County. This new substation is proposed to include 3.4 acres). This report, conducted for Mr. Tommy Jackson of Central Electric Power Cooperative, provides the results of the investigation and is intended to assist the company comply with their historic preservation responsibilities.

The South Carolina Department of Archives and History GIS was consulted to check for any NRHP buildings, districts, structures, sites, or objects in the study area. No properties in or near the project area have been determined eligible for the National Register of Historic Places. Previous archaeological studies did, however, identify perhaps three archaeological sites within the corridor and 100-foot APE. Additional sites were found beyond the APE.

The current field studies (consisting of shovel testing at 100-foot intervals along the 70-foot wide corridor) did not identify any archaeological sites on the proposed corridor. We attribute this to the steep topography and extensive erosion in the project corridor. Even the three sites (38UN34, 38UN35, and 38UN82) that were felt to be on the corridor could not be relocated. This is likely the result of these sites being ephemeral, heavily collected, and further damaged over the forty years since they were first reported.

The proposed substation, situated on the top of a small rise, was similarly investigated using shovel tests at 100-foot intervals on transects spaced every 100-feet. In spite of there being a mid-century farmstead on this substation, the shovel tests failed to identify any archaeological remains. We attribute to changing patterns of refuse disposal (either burning or deposition in ravines) removed from the structures. Since the structures are still standing, there was a very limited opportunity for the recovery of architectural remains.

There are no standing structures within the corridor or within 100-feet. Moreover, the area has already been impacted by several large transmission lines and their associated towers.

There are two standing houses on the substation lot, as well as associated outbuildings. One is a single-story frame house (01418) recommended not eligible as having no distinctive design elements. The other is a single-story brick veneer structure (01419), recommended not eligible for similar reasons.

It is possible that archaeological remains may be encountered in the area during construction. As always, the utility's contractors should be advised to report any discoveries of concentrations of artifacts (such as bottles, ceramics, or projectile points) or brick rubble to the project engineer, who should in turn report the material to the State Historic Preservation Office, or Chicora Foundation (the process of dealing with late discoveries is discussed in 36CFR800.13(b)(3)). No further land altering activities should take place in the vicinity of these discoveries until they have been examined by an archaeologist and, if necessary, have been processed according to 36CFR800.13(b)(3).

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