



# APPENDIX E

## Cultural Resources Inventory



# FINAL REPORT

## CULTURAL RESOURCES RECONNAISSANCE SURVEY FOR THE PE-3 PARKING LOT EXPANSION AT RALEIGH-DURHAM INTERNATIONAL AIRPORT (RDU), WAKE COUNTY, NORTH CAROLINA

APRIL 2023



**RS&H**

  
**SEARCH**

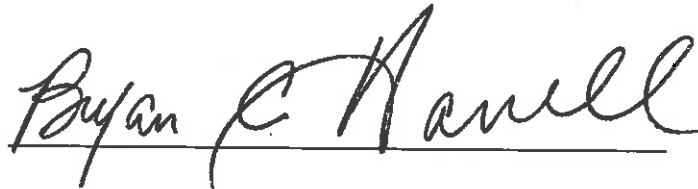
**CULTURAL RESOURCES RECONNAISSANCE SURVEY FOR THE PE-3 PARKING LOT  
EXPANSION AT RALEIGH-DURHAM INTERNATIONAL AIRPORT (RDU), WAKE  
COUNTY, NORTH CAROLINA**

**FINAL REPORT**

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A handwritten signature in black ink that reads "Bryan C. Harrell". The signature is written in a cursive style and is positioned above a horizontal line.

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April 2023

SEARCH Project No. T22280

## EXECUTIVE SUMMARY

Between February 6 and 10, 2023, Southeastern Archaeological Research, Inc. (SEARCH) conducted a cultural resource reconnaissance survey in support of the proposed PE-3 Parking Lot expansion at the Raleigh-Durham International Airport (RDU) in Wake County, North Carolina (Project). The Project was conducted under contract between RS&H, LLC, and SEARCH.

The client defined the area of approximately 154 acres (ac) to the northeast, northwest, and south of the PE-3 Parking Lot at the RDU (Survey Area). The Survey Area is comprised of hilly forested terrain adjacent to the William B. Umstead State Park, including the National Register of Historic Places (NRHP) listed Crabtree Creek Recreational Demonstration Area.

The cultural resources reconnaissance for the Project consisted of background research and non-systematic pedestrian survey and subsurface shovel testing. Systematic pedestrian survey and shovel testing in the state of North Carolina typically occurs along transects spaced no greater than 30 meters (m) (98 feet [ft]) apart with individual shovel tests placed on intervals no greater than 30 m (NCOSA 2017). However, the current Project is not subject to Section 106 of the National Historic Preservation Act (NHPA) or other state or federal historic preservation regulations, so in consultation with RS&H, the field effort consisted of surface inspection, photographic documentation, and non-systematic shovel tests judgmentally placed at approximately 100-150 m (328-492 ft) intervals throughout the Survey Area to assess the probability of identifying cultural resources within the Survey Area. Shovel tests measured 30 centimeters (cm) (11.8 inches [in]) and were excavated at least 10 cm (3.9 in) into sterile subsoil or hydric soil, or to a depth of 1 m (3.3 ft) below the ground surface. No shovel tests were excavated in areas with standing water or areas of low probability with 15 percent or greater slope.

In total, 50 shovel tests were excavated within the Survey Area. No artifacts or standing historic structures were identified during the reconnaissance survey, suggesting this area was not a popular locale for human settlement and activities in the past until more recent times. Low probability areas for potential archaeological sites were documented in sections of the Survey Area based on the presence of disturbance from infrastructure, including the existing PE-3 Parking Lot and reservoirs, as well as wet conditions and poorly drained soils. Field methods, project paperwork, and photographs were prepared according to the standards set forth by the North Carolina Office of State Archaeology (NCOSA). Project paperwork and photographs are presently curated and stored at the SEARCH laboratory facility. These materials are ready for ultimate deposit into the NCOSA curation repository (if required).

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## CHAPTER 1. INTRODUCTION

Between February 6 and 10, 2023, Southeastern Archaeological Research, Inc. (SEARCH) conducted a cultural resource reconnaissance survey in support of the proposed PE-3 Parking Lot expansion at the Raleigh-Durham International Airport (RDU) in Wake County, North Carolina (**Figure 1.1**). The Survey Area is approximately 21.1 kilometers (km) (13.1 miles [mi]) northwest of Raleigh and 27.5 km (17.1 mi) southeast of Durham. The Project involves the expansion of the existing PE-3 Parking Lot into the surrounding hilly and forested terrain adjacent to William B. Umstead State Park between Interstate 40 (I 40) and US Route 70 (US 70).

The Survey Area consists of approximately 154 acres (ac) to the northeast, northwest, and south of the PE-3 Parking Lot (**Figure 1.2**). Six cultural resource surveys have previously assessed areas within 1.6 km (1 mi) of the Project, with one of these studies intersecting with the Survey Area (Hall and Littleton 1978). 37 previously identified cultural resources are within the Project buffer, with one site underneath the existing PE-3 Parking Lot within the Survey Area. William B. Umstead State Park and the National Register of Historic Places (NRHP) listed Crabtree Creek Recreational Demonstration Area are next to the Survey Area. These nature preserves feature hiking and multiuse trails, artificial lakes and tributaries for fishing, and picnic and camping areas. Lake Crabtree features the remains of a nineteenth-century tenant farm, including the house, stone-lined well, and a tobacco ordering pit, which have been adapted for a tour of Wake County history.

The principal goals of this investigation were to characterize landforms and soil types and to assess the probability of identifying cultural resources within the defined Survey Area. The cultural resources reconnaissance for the Project consisted of non-systematic pedestrian survey and subsurface shovel testing. In total, 50 shovel tests measuring 30 centimeters (cm) (11.8 inches [in]) in diameter were excavated and an extensive surface inspection was conducted within the Survey Area. Shovel tests were judgmentally placed at approximately 100–150-meter (m) (328–492 feet [ft]) intervals in areas determined to have a high probability of producing cultural resources, including areas with favorable landforms for human use (ridge tops, knolls, and ridge toes), well-drained soils, less than 15 percent slope, limited natural and anthropogenic disturbance to archaeological contexts, as well as areas associated with cultural resources on historic maps. No cultural resources were identified in the Survey Area, suggesting this area was not a popular locale for human settlement and activities in the past.

While the Project is not subject to Section 106 of the National Historic Preservation Act (NHPA) of 1979 or other state or federal historic preservation regulations, this study has been conducted to meet the requirements of Public Law 113-287 (Title 54 U.S.C.), which incorporates the provisions of Section 106 of NHPA, as amended through December 19, 2014, and its implementing regulations at 36 Code of Federal Regulations [CFR] Part 800, *Protection of Historic Properties*. Field methods for reconnaissance survey/due diligence and report information and formatting are consistent with the North Carolina Office of State Archaeology (NCOSA)

*Archaeological Investigation Standards and Guidelines for Background Research, Field Methodologies, Technical Reports and Curation (NCOSA 2017).*

Bryan C. Harrell, MS, RPA served as Principal Investigator for this project. Mr. Harrell meets the Secretary of the Interior's *Standards and Guidelines for Archaeology and Historic Preservation* (48 FR 44716-42). Zachary J. M. Beier, PhD, RPA served as Project Director. Additional field crew included Maggie Hillis, BS. The historian for this work was Ashley Parham, PhD. GIS support was provided by Andrew Heller, MA and Gypsy Price, PhD.

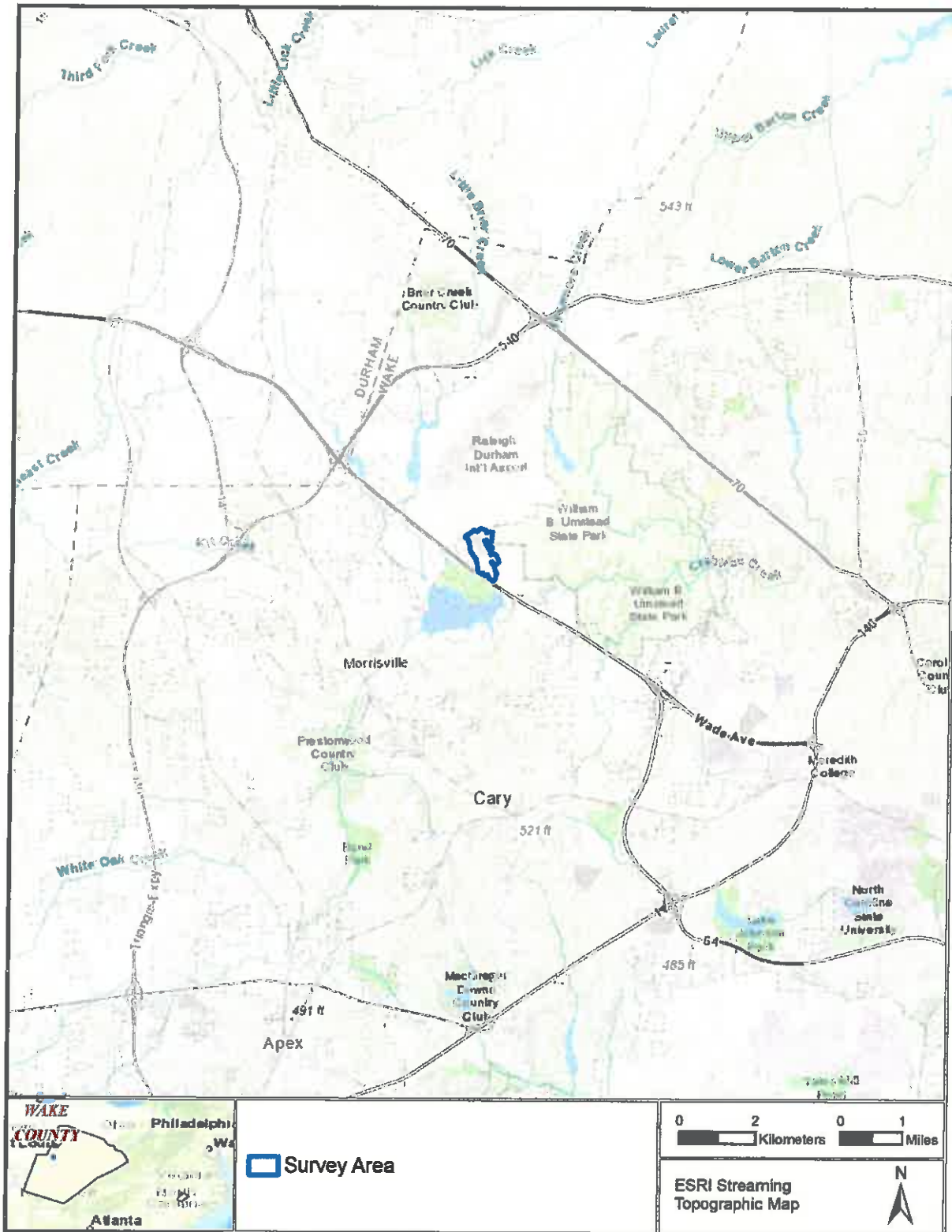


Figure 1.1. General Project overview, Wake County, North Carolina.



Figure 1.2. Survey Area for the Raleigh-Durham International Airport PE-3 Parking Lot expansion.

## CHAPTER 2. ENVIRONMENTAL OVERVIEW

The Survey Area is adjacent to RDU, I-40, and Hayley's Branch in northwestern Wake County in central North Carolina (see **Figures 1.1 and 1.2**). The natural habitats and ecological features of the Survey Area play a crucial role in the decision-making processes of local precontact and historic inhabitants. Furthermore, the environment is a critical component to archaeological site formation and preservation conditions (e.g., sedimentation may bury an archaeological site, while erosion may expose and deflate an archaeological site). This chapter outlines the geology and geomorphology, soils, paleoenvironmental dynamics, and current ecology of the Survey Area and the surrounding region.

### 2.1 GEOLOGY AND GEOMORPHOLOGY

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The Survey Area is in the Piedmont physiographic region of central North Carolina, situated between the Coastal Plain to the east and the Appalachian Mountains to the west. The U.S. Environmental Protection Agency subdivides the Piedmont (and all other physiographic regions throughout the US) into smaller, more-refined Level IV ecoregions. The Survey Area is part of the Triassic Basins (**Figure 2.1**) found within the larger EPA Level III Piedmont Ecoregion (Griffith et al. 2002). Generally, the physical geography of Wake County is characterized as a mosaic of dissected irregular uplands with dispersed rolling hills and ridges containing major drainageways bordered by steep slopes. Compared to the nearby Northern Outer Piedmont ecoregion, the local relief and elevations are lower in the Triassic Basins (Cawthorn 1970; Griffith et al. 2002).

The geology of the Survey Area, which is unusual for the region, is composed of unmetamorphosed shales, sandstones, siltstones, mudstones, and conglomerates. Soils are typically Quaternary to Tertiary red sandy loam to silty clay decomposed residuum attributed to Ultisols, Alfisols, and Inceptisols (Griffith et al. 2002). Surficial deposits within the region are typically colluvial in nature. These deposits consist of "poorly sorted and stratified sediment ranging from clay to boulders in size" and "may contain organic material" (Soller et al. 2009:15). The colluvium can also be covered with residual materials, alluvium, and/or loess. Residual materials are typically the remains of chemical and physical decomposition or decay of bedrock and colluvial deposits that "include the modern soil profile and extend downward to unweathered rock" (Soller et al. 2009:21).





Figure 2.1. EPA Level IV Ecoregions in the vicinity of the Survey Area.

## 2.2 SOILS

Soils within the Survey Area are broadly associated with the gently sloping to moderately steep, moderately well drained soils of Piedmont uplands in the western part of the county (Cawthorn 1970). The Survey Area is mainly characterized by the Creedmoor-Green Level Complex with most soil profiles matching with the Creedmore sandy loam series typical of forested settings in the region. Urban land in the Survey Area consists of the centrally located PE-3 Parking Lot and surrounding roads and buildings to the north. A limited percentage of the Survey Area is associated with the gravelly fine sandy loam of the Pinoka series, Chewacla and Wehadkee soils, and standing water (Figure 2.2). The distribution of these soils in the Survey Area is provided in Table 2.1. Soils are very deep to moderately deep, and most are moderately well drained to somewhat poorly drained (Figure 2.3). In general, the soils in the Survey Area are relatively intact with minimal disturbance from natural and anthropogenic forces like tree cultivation and the construction of trails and airport infrastructure. Soil textures range from sandy loam, gravelly fine sandy loam, and sandy clay loam, which typically overlay a clay subsoil (Cawthorn 1970). Certain portions of the Survey Area had wetter soils that were inundated with water at approximately 40 cm below surface (cmbs). Specific soils documented in the Survey Area are addressed in the Results section.

**Table 2.1. Soil classifications within the Survey Area.**

Soil Type	Drainage Classification	Acres	Acreage (%)
Pinoka gravelly fine sandy loam (PkF), 15-30% slopes	Well drained	4.5	2.9
Udorthents loamy (UdE), 0-25% slopes		3.8	2.5
Creedmoor-Green Level complex (CrB), 2-6% slopes	Moderately well drained	29.6	19.2
Creedmoor-Green Level complex (CrC), 6-10% slopes		8.5	5.5
Creedmoor-Green Level complex (CrD), 10-15% slopes		60.0	38.9
Chewacla and Wehadkee soils (ChA), 0-2% slopes, frequently flooded	Somewhat poorly drained	0.3	0.2
Urban land (Ur)	Urban Land	46.8	30.4
Water (W)	Water	0.5	0.3
<b>Total</b>		<b>154.1</b>	<b>100.0</b>





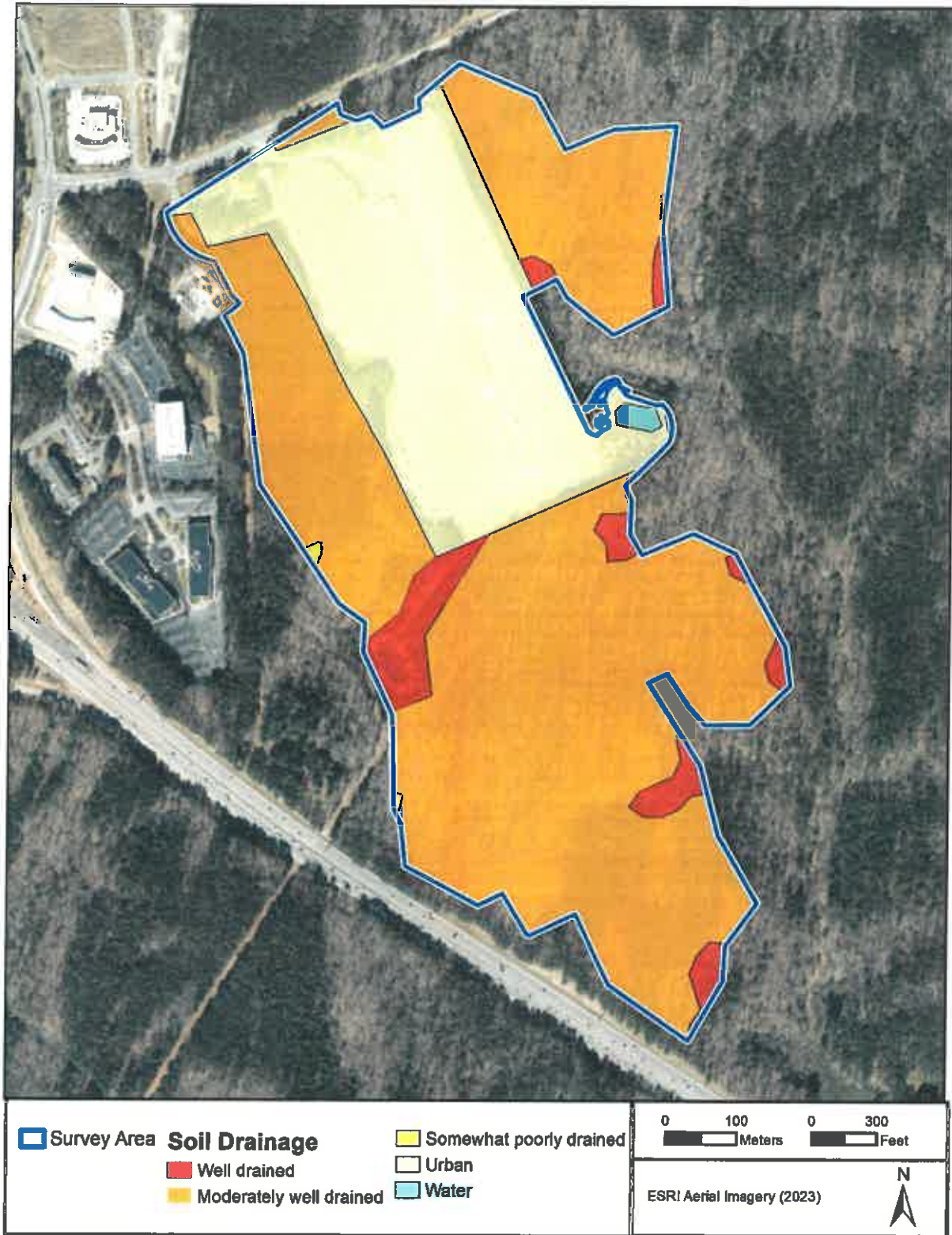


Figure 2.4. Soil drainage classifications within the Survey Area.

## 2.3 PALEOENVIRONMENTAL DYNAMICS

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Archaeologists generally agree that human migration into North America occurred during the late Pleistocene epoch as the landscape was slowly transitioning out of the full Wisconsin glaciation 18,000 to 12,000 years before present (BP). The environmental landscape that these people encountered was much different than the environmental landscape of today. During the full Wisconsin glacial period, North Carolina, like most of the Southeast, was much cooler and drier with an average sea level approximately 120 m lower than current sea-level stands (Bense 1994:18, Rohling et al. 1998:162). Vegetation included cold-weather species like spruce and jack pine (Delcourt and Delcourt 1981). As humans slowly trickled into North America, temperatures were increasing as interglacial conditions began to prevail.

By 10,000 BP, glacial conditions ceased, marking the beginning of the Holocene. The Early Holocene (10,000–8500 BP) was a period of warmer, drier summers and rapid sea level rise. The large dominant forest belts that had existed for millennia began breaking into smaller biotic communities (Bense 1994:22). Also, the megafauna that had characterized the Pleistocene epoch were becoming extinct. The Middle Holocene (8500–4000 BP), known as the Altithermal or Hypsithermal, was much drier and hotter than previous periods as the tropical air mass moving out of the Caribbean and Gulf of Mexico influenced summer weather patterns (Bense 1994:22). During this period, swamp and peat habitats developed as various species of pine expanded across North Carolina (Watts 1980). As a generalization, during the Late Holocene (4000 BP–present), the climate, water levels, and plant communities of North Carolina attained essentially modern conditions by 3000 BP and have been stable through all phases of habitation by ceramic-using cultures.

## 2.4 CURRENT PHYSIOGRAPHY AND ECOLOGY

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Elevations range from approximately 117 m (385 ft) in the northern section of the Survey Area to as low as 93 m (305 ft) in the southeastern extent. The RDU is in the Crabtree Creek watershed, which is defined by a network of small streams including Hayley's Branch, Brier and Little Brier Creeks, and Sycamore Creek. The Survey Area encompasses a series of low rolling hills, stream terraces, and drainage channels in the forested area between Hayley's Branch to the east and Lake Crabtree to the southwest. Much of the forested area that the Survey Area is part of has been preserved as William B. Umstead State Park, with minimal anthropogenic modification from the development of trails and drainages. Hayley's Branch is a tributary to Crabtree Creek that rises south of the RDU then flowing south to meet Crabtree Creek in Lake Crabtree. Lake Crabtree is a 520-ac reservoir in Cary, North Carolina constructed by the Natural Resources Conservation Service in 1989 by damming Crabtree Creek. The natural water sources in the vicinity of the Survey Area would have undoubtedly been an important ecological factor for people in the past, especially transient hunters and gathers who occupied the region for several thousand years.



Vegetation in the Survey Area is part of the oak-pine forest biome common to the Piedmont. The overstory is typically comprised of various types of hardwoods like oak (black, post, and white), pine (shortleaf, Virginia, and white), hickory (pignut, mockernut, and shagbark), American elm, American beech, sweetgum, and red maple. The understory includes a variety of smaller shrubs and saplings along with greenbrier and holly. Mature pine trees are the dominate vegetation in the Survey Area due to repeated cultivation and cutting over time.

Fauna is diverse within the Survey Area, including an array of mammals, birds, fish, reptiles, and amphibians. Common mammals include beaver, raccoon, white-tailed deer, coyote, opossum, squirrels, field mice, fox, skunk, muskrat, and rabbit. Common birds include dove, quail, turkey, and ducks. Common fish species include bass, bream, crappie, carp, catfish, gar, and minnows. Common amphibians and reptiles include king snake, rat snake, corn snake, copperheads, timber rattlesnakes, box turtles, toads, salamanders, and lizards.

The local climate is temperate with four distinct seasons. Raleigh experiences generally moderate temperatures during spring and autumn. Temperatures in spring range from the mid-60s to the mid-80s°F, with high temperatures in the fall averaging in the 70s°F. Winters are mild and wet, with temperature highs in the range of 47-53°F and lows around or just below freezing. Summers are typically hot, with daytime temperatures averaging in the upper-80s to low-90s°F with warm and humid nights in the upper-60s°F. Raleigh receives an average annual rain fall of 110 cm (43.3 in). January and March are the region's rainiest months, while April and November are the driest. Snowfall occurs at relatively low to moderate levels. Raleigh receives an average annual accumulation of 15 cm (6 in) (Weatherbase 2023).

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## CHAPTER 3. BACKGROUND RESEARCH

To carry out the cultural resource reconnaissance survey for the Project, SEARCH staff completed background research and a records search of the Survey Area and its immediate surroundings. Information presented in this document has been derived from a review of previous cultural resource surveys and archaeological and historical literature from the region, historic maps and aerial photographs, along with soil and topographic maps. These sources provide an understanding of the types of cultural resources known from the area as well as the types of environmental or cultural features that may indicate the location of archaeological or historic resources. In addition, various data sources have been accessed while researching the Survey Area for the Geographic Information System (GIS) maps. Various GIS data layers have been acquired from the U.S. Department of Agriculture (USDA) Natural Resources Data Gateway, U.S. Geological Survey (USGS) EarthExplorer, Esri, and other sources. Previous surveys and recorded cultural sources are discussed first, followed by a summary of the culture historical context. A historic map review concludes this chapter.

### 3.1 PREVIOUS INVESTIGATIONS AND RECORDED CULTURAL RESOURCES

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SEARCH staff reviewed data from the North Carolina Office of State Archaeology (NCOSA) to identify previously completed surveys and recorded cultural resources in the Survey Area. The record search was restricted to a 1.6 km (1 mi) buffer extending outside the Survey Area and identified 6 previous surveys and 37 recorded cultural resources. This background information helps in understanding the coverage provided by previous surveys and their methodology along with the types of cultural resources known from the area.

#### 3.1.1 Previous Surveys

Parts within and adjacent to the Survey Area have been subject to 6 previous cultural surveys that resulted in the identification of archaeological sites and other cultural features (Table 3.1). Figure 3.1 shows the previously completed surveys identified within the buffer of the Survey Area for which there was GIS data on file at the NCOSA. The four surveys completed between 1974 and 1978 do not have any available GIS data (Bibliographic IDs: 00486, 00260, 00463, and 00256). The reports for these surveys were consulted to identify their general locations, which are described in this report in the summaries of these previous surveys. One previous survey intersects with the Survey Area (see Hall and Littleton 1978).

**Table 3.1. Previously conducted cultural resource surveys within 1.6 km (1 mi) of the Survey Area.**

Bib#	Survey Title	Date	Author
00486	Archaeological Survey of the Proposed New Runway at the Raleigh-Durham Airport, North Carolina	1974	Snively and Gorin
00260	The Crabtree Creek Interceptor Archaeological Survey	1975	Ham and Watson
00463	The Raleigh-Durham Airport Survey: An Archaeological Reconnaissance	1975	Robertson and Robertson
00256	Cultural Resource Survey of the Raleigh-Durham Airport	1978	Hall and Littleton
07428	Archaeological Survey and Evaluation for Two Intersection Improvements, I-40 at SR 1002 (Aviation Parkway) - TIP I-5506 and I-40 at SR 3015 (Airport Boulevard) – TIP I-5700, Wake County, North Carolina	2015	Joy and Gill
08320	Archaeological Survey of the Oddfellows Tract, Wake County, North Carolina	2020	Southerlin et al.

In 1974, Alan N. Snively and Diana C. Gorin from the Department of Cultural Resources of the State of North Carolina conducted an archaeological survey of a 350-ac tract of land designated as the new runway at the RDU Airport (Snively and Gorin 1974). Rather than surveying the entire area affected by the projected airport expansion, the study focused on recording all archaeological and historic sites within the 3,048 m (10,000 ft) area for the runway facility that was arranged in a linear corridor oriented NW-SE. This previously surveyed area is approximately 1 km (.62 mi) north of the Survey Area. This initial survey was designed to facilitate future reconnaissance in other areas effected by airport expansion by defining parameters like site density and distribution as well as factors germane to field work like ground cover and soil stratigraphy. Field methods consisted of intensive surface inspection of areas with clear ground visibility, including agricultural fields and sparsely wooded areas. Heavily wooded areas, which included at least 70% of the survey area, were checked for unusual features of terrain that might indicate an archaeological site. Artifacts were collected from the surface of sites. No subsurface testing was completed during the survey. A total of 12 precontact and historic sites were identified. Most of the recovered evidence was interpreted as temporary or seasonal camps used by Archaic hunters and gatherers typical in the region between 6,000 BC and AD 0. Four of the identified sites are within the Survey Area buffer (31WA73, 31WA74, 31WA75, 31WA76). At the time of this study, several of the sites had been or were in the process of being destroyed by mechanical earthmoving. Further investigation of identified sites that had not yet been destroyed by land clearing and development was recommended, including additional surface collections and the clearing of ground cover to identify historic house foundations.

In 1975, archaeologists under contract with Peirson & Whitman, Inc. and the North Carolina Division of Archives and History, Archaeology Section conducted an archaeological surface survey of the proposed Crabtree Creek interceptor and pump station (Ham and Watson 1975). Much of this survey was carried out approximately .7 km (.43 mi) south of the RDU Survey Area on the southeastern end of the present-day Lake Crabtree. This previous survey involved the surface reconnaissance of an 18 m (60 ft) wide corridor to locate any archaeological or historical artifacts or structures that would be potentially impacted by the construction and maintenance of the 32.3 km (20.1 mi) long interceptor. Trowels and hand shovels were used to expose the surface

soil up to a depth of 7.6 cm (3 in). Additionally, ten-quart buckets of soil were sampled at locations where cultural materials were uncovered to better define sites and their proximity to the interceptor. These bucket samples were sifted through ¼ inch screen mesh and the artifacts removed. A total of 12 precontact and historic archaeological sites was identified along with 11 occurrences of lithic debitage. Seven of the identified archaeological sites were found to be not significant or their significance was unknown based on their disturbed condition, their distance from the proposed interceptor, or their recent age. No further work was recommended at these sites. Further research and testing at three sites threatened by the construction of the interceptor was recommended based on their undetermined significance and good state of preservation, including two post-Civil War historic mills (31WA101, 31WA106) and a large precontact and multicomponent site (31WA110). Two of the archaeological sites identified during this survey are within the RDU Survey Area buffer (31WA107, 31WA108), neither of which were recommended for further study.

Also in 1975, Ben P. Robertson and Linda Butler Robertson from the Department of Cultural Resources of the State of North Carolina followed up the preliminary survey of the new runway site (Snively and Gorin 1974) with an archaeological survey of the more than 1200 acres comprising the RDU Airport expansion area (Robertson and Robertson 1975). A portion of the surveyed area is approximately .5 km (.31 mi) north of the Survey Area. Like the earlier survey by Snively and Gorin (1974), this study was hindered by the dense vegetation in some parts of the airport expansion area. A site predictive model was used in these dense vegetation areas to pinpoint more archaeological materials, which was reported as partially successful. The expansive survey area was divided into four quadrants. The ground surfaces were visually inspected along with the collection of artifacts on the surface in all areas besides those that had been subjected to ground disturbance. No subsurface testing was completed during the survey. A total of 28 precontact, multicomponent, and historic archaeological sites were located, with most sites consisting of lithics attributed to Archaic period hunter gatherers, including diagnostic projectile points like Stanly, Yadkin, Kirk Serrated, Morrow Mountain, Gaston, Guilford, and Savannah River. The height of activity in the RDU expansion area was interpreted as occurring between 3,000 and 5,000 BC. Five of the archaeological sites identified during this survey are within the Survey Area buffer, of which all are lithic scatters or isolated finds (31WA90, 31WA91, 31WA92, 31WA94, 31WA95). Further work by archaeologists was recommended to check heavily forested areas once they were cleared during the expansion process. Additionally, further testing was recommended at three sites (31WA57, 31WA58, 31WA61) that were believed to form a large complex of sites occupied for approximately 8,000 years. These sites were reported to be already damaged by construction activities close to Runway 23 and further threatened by erosion. No further work was recommended within the current RDU Survey Area buffer.

Between 1977 and 1978, Coastal Zone Resources Division (CZR) of Ocean Data Systems, Inc. (ODSI) conducted a cultural resource survey of the RDU property and immediate surroundings ahead of the potential expansion of the airport (Hall and Littleton 1978). The surveyed area consisted of 7,200 ac between Interstate 40 (I-40) in the southwest and U.S. Highway 70 in the northeast. This previous survey passes through the center of the current Survey Area. Methods included literature review and in-depth historical research, field reconnaissance and inventory of



historical and archaeological resources, and interviews with person knowledgeable about the history or prehistory of the area. The study was designed as a preliminary on-site reconnaissance that encompassed not more than 20 percent of the survey area. Two previous archaeological surveys completed between 1974 and 1975 of the RDU property and its surroundings were incorporated into the CZR study to simplify the assessment of the airport expansion area. Previously discussed surveys by Snively and Gorin (1974) and Robertson and Robertson (1975) documented 40 precontact and historic archaeological sites in the vicinity of the RDU, with most sites associated with the Archaic period and Piedmont hunter gatherer societies (c. 6000 BC to AD 0).

Archaeological field work for the CZR survey targeted areas with good ground visibility for surface inspection and artifact collection. In forested areas with minimal visibility, two transects spaced 30 m apart with shovel tests excavated at 30 m intervals were placed in wooded sections of the RDU expansion area. The first transect, 2,705 meters long, was run parallel to the RDU Airport Runway 5/23, approximately 5,000 feet southeast of the runway, beginning at a point on I 40 and terminating near the boundary line for the William B. Umstead State Park. This transect passes through the center of the current Survey Area. The second transect, 914 meters long, was run parallel to the same runway, approximately 4,000 feet northwest of the runway, beginning at a point on S. R. 1645 and ending on a hilltop at UTM coordinates Northing 3973780 and Easting 6998800. The completion of the second transect was cut short due to poor weather and time and budget constraints. Additional shovel tests were placed at 5 m and 10 m intervals in each of the main cardinal directions from the location of any positive shovel test. Overall, the CZR survey identified 22 previously unrecorded precontact sites, including one precontact site with an associated cemetery, and 11 previously unrecorded historic sites, including nine cemeteries and one house. In general, the archaeological sites were described as small and relatively insignificant. Four of the identified sites are within the RDU Survey Area buffer, including three precontact lithic scatters and isolated finds (31WA125, 31WA126, 31WA127), and one ruinous historical structure and associated artifact scatter (31WA141). Site 31WA141 is within the current Survey Area near the southwest extent of the existing PE-3 Parking Lot. No trace of this historic structure remains on the concrete surface of the parking lot. The site was likely destroyed during the construction of this facility.

CZR concluded the potential adverse impacts to cultural resources from the expansion of the airport in the area was minimal. Based on the findings from the three surveys that considered a total of 73 sites within the RDU expansion area, it does not appear the region was popular with Indigenous people as no large or sustained precontact settlement was located. From the recovered evidence, large and permanent populations were not present in the area until later historic times. The report recommended that historic cemeteries in the area must be located and moved. Additionally, the historic dwelling house of Obadiah Page, Sr. was recommended for further study to determine whether it should be listed on the NRHP. Finally, CZR recommended more thorough reconnaissance of the areas directly impacted by airport expansion once the definite locations of new facilities were determined.

In 2015, archaeologists with Legacy Research Associates conducted an archaeological survey of 130 ac for the North Carolina Department of Transportation (NCDOT) ahead of the improvement of two intersections on I-40 near the RDU (Joy and Gill 2015). The area surveyed is south of the RDU with all the discovered sites immediately adjacent to I-40. Field methods consisted of visual inspection, surface walkovers, and shovel testing at 20-m intervals along transects spaced 20 m apart and in some judgmentally placed locations. No shovel tests were completed in areas where slope exceeded 15 percent, in areas of standing water, or in hydric soils. The survey identified a total of 19 archaeological resources, with 13 archaeological sites (precontact, multicomponent, and historic) and six isolated finds (precontact and historic). The frequency of sites/isolated finds for the survey was calculated as one site per seven acres. Out of the total of identified archaeological resources, 16 were identified within the current Survey Area buffer, including 11 precontact sites/isolates (31WA1933-1935, 31WA1937-1939, 31WA1943, 31WA1945-1948) three multicomponent sites (31WA1936, 31WA1949, 31WA1951), and two historic sites/isolates (31WA1940, 31WA1950). The most frequent types of sites were from lithic production with limited diagnostic finds and no evidence of sustained occupation during prehistory. For the historic period, domestic sites were the most prevalent cultural resource. None of the sites identified during the survey were endorsed for NRHP eligibility based on the lack of significant information. No further archaeological work was recommended.

In 2020, Archaeological Consultants of the Carolinas, Inc. conducted an archaeological survey of the Oddfellows tract in Wake County, North Carolina on behalf of the Wake Stone Corporation (Southerlin et al. 2020). This 105-ac tract of land is approximately .6 km (.37 mi) southeast of the RDU in the vicinity of Old Reedy Creek Road in the northwest, Umstead State Park in the north, and Crabtree Creek on the southeast and southwest. Survey methods entailed background research, pedestrian walkover, and shovel testing. High probability areas, including ridge tops, knolls, and ridge toes, were shovel tested at 30 m intervals along parallel transects spaced 30 m apart. Low probability areas were surveyed by pedestrian walkover and judgmentally placed shovel tests. Five archaeological sites were identified during the survey, including two precontact sites of unknown age and three historic sites dating to the twentieth century, of which all are within the current Survey Area buffer (31WA2327-2331). None of the archaeological sites were suggested for NRHP eligibility. No further work was recommended.



Figure 3.1. Previously conducted cultural resource surveys within 1.6 km (1 mi) of the Survey Area.

### 3.1.2 Previously Recorded Resources

There are 37 previously recorded cultural resources within 1.6 km (1 mi) of the Survey Area (Figure 3.2). Table 3.2 provides a summary of available information pertaining to these previously recorded cultural resources, including site number, cultural component, description of artifacts, type of archaeological site, and National Register of Historic Places (NRHP) status. One previously identified cultural resource (31WA141) is near the southwest corner of the existing PE-3 Parking Lot within the boundaries of the Survey Area. This ruinous historic structure was likely destroyed during the construction of this facility.

Of the 37 cultural resources, all are archaeological sites, including 26 precontact sites, five multicomponent sites, and six historic sites. The most common types of sites consist of lithic scatters or isolated lithic artifacts interpreted as short-term precontact campsites and/or lithic reduction stations. Most of the lithics were undiagnostic flakes, but some recovered diagnostic PPKs and tools, along with the lack of ceramics and ground stone tools, were interpreted as dating to the Archaic period. Previous studies in the vicinity of the Survey Area suggest some of the documented lithic sites were within 2.5 km (1.5 mi) of a quartz quarrying area (see 31WA90 and 31WA91 in Robertson and Robertson 1975). The second most common type of sites are historic homesites and farmsteads occupied between the nineteenth and twentieth centuries based on the presence of architectural foundations and diagnostic ceramics and bottle glass. Other historic sites within the Survey Area buffer include a mid-twentieth century logging site and Boy Scout Recreation Area.

Thirty-six of the cultural resources within the Survey Area buffer were determined to be not eligible for NRHP listing based on site disturbance, mainly from mechanical earthmoving and erosion, and the paucity of historical information from their further study. The NRHP status of one isolate cultural resource identified by an amateur archaeologist in 2003 was unassessed based on its potential for listing following further site evaluation (31WA156).

**Table 3.2. Archaeological Sites Recorded within 1.6 km (1 mi) of the Survey Area.**

Site Number	Cultural Component	Site Description	Site Type	NRHP Status
31WA73	Multicomponent	Lithic – Middle to Late Archaic Guilford preform, possible Savannah River point, Quartz and Rhyolite Flakes  Ceramic – Earthenware and Stoneware	Lithic Scatter (Middle to Late Archaic Campsite)  Domestic Artifact Scatter (Mid- to Late-19 <sup>th</sup> Century Domestic)	Not Eligible
31WA74	Precontact	Lithic – Debitage (8 Quartz Flakes)	Lithic Scatter (Early to Middle Archaic Campsite)	Not Eligible
31WA75	Precontact	Lithic – Early to Late Archaic Kirk Serrated point (1), Savannah River point (1), Rhyolite Flake (1)	Isolated Find (Early to Late Archaic Campsite)	Not Eligible
31WA76	Precontact	Lithic – Debitage (3 Quartz and 1 Rhyolite Flakes)	Isolated Find (Early to Middle Archaic Campsite)	Not Eligible
31WA90	Precontact	Lithic – Debitage (19 Quartz Flakes)	Lithic Scatter	Not Eligible
31WA91	Precontact	Lithic – Debitage (22 Quartz Flakes)	Lithic Scatter	Not Eligible
31WA92	Precontact	Lithic – Quartz scraper (1), Quartz Flakes (5)	Lithic Scatter	Not Eligible
31WA94	Precontact	Lithic – Debitage (14 Quartz Flakes)	Lithic Scatter	Not Eligible
31WA95	Precontact	Lithic – Debitage (5 Quartz Flakes)	Lithic Scatter	Not Eligible
31WA107	Precontact	Lithic – Quartz Bifaces (3), Quartz Flake (1), Rhyolite Flakes (2)	Lithic Scatter (Probable Quarry site)	Not Eligible
31WA108	Multicomponent	Lithic – Quartz Biface (1), Quartz Flakes (27), Rhyolite Flakes (8); Fire-Cracked Rocks (2)  Nail Fragments (1 wire, 1 machine-cut)	Lithic Scatter  Isolated Find	Not Eligible
31WA125	Precontact	Lithic – Kirk point (1), Flakes (2)	Isolated Find	Not Eligible
31WA126	Precontact	Lithic – Biface (1)	Isolated Find	Not Eligible
31WA127	Precontact	Lithic – Debitage (29 Flakes)	Lithic Scatter	Not Eligible

Table 3.2. Continued.

Site Number	Cultural Component	Site Description	Site Type	NRHP Status
31WA141	Historic	Foundation (House with Chimney base) and Artifact Scatter (Wine Bottle base, miscellaneous Concretions)	Mid-19 <sup>th</sup> to Mid-20 <sup>th</sup> Century Domestic	Not Eligible
31WA156	Precontact	Lithic – Unifacial Tool (end scraper), Debitage (Flakes)	Isolated Find	Unassessed
31WA1933	Precontact	Lithic – Debitage	Isolated Find	Not Eligible
31WA1934	Precontact	Lithic – Debitage	Lithic Scatter	Not Eligible
31WA1935	Precontact	Lithic – Debitage	Isolated Find	Not Eligible
31WA1936	Multicomponent	Lithic – Debitage Ceramic – Pearlware	Lithic Scatter Isolated Find (Late 18 <sup>th</sup> to Early 19 <sup>th</sup> Century Domestic)	Not Eligible
31WA1937	Precontact	Lithic – Debitage	Isolated Find	Not Eligible
31WA1938	Precontact	Lithic – Early Archaic notched PPK base and Middle Archaic Morrow Mountain II	Lithic Scatter (Early to Middle Archaic)	Not Eligible
31WA1939	Precontact	Lithic – Debitage	Isolated Find	Not Eligible
31WA1940	Historic	Foundations and Artifact Scatter	Early to Mid-20 <sup>th</sup> Century Farmstead Outbuildings	Not Eligible
31WA1943	Precontact	Lithic – Debitage	Lithic Scatter	Not Eligible
31WA1945	Precontact	Lithic – Debitage	Isolated Find	Not Eligible
31WA1946	Precontact	Lithic – Debitage	Isolated Find	Not Eligible
31WA1947	Precontact	Lithic – Debitage	Lithic Scatter	Not Eligible
31WA1948	Precontact	Lithic – Debitage	Lithic Scatter	Not Eligible
31WA1949	Multicomponent	Lithic – Debitage Foundations, Artifact Scatter, and Landscape Elements	Isolated Find Early to Mid-20 <sup>th</sup> Century Farmstead Outbuildings	Not Eligible
31WA1950	Historic	Domestic Artifact Scatter and Landscape Elements	Mid- to Late-20 <sup>th</sup> -Century Farmstead Homesite	Not Eligible
31WA1951	Multicomponent	Lithic – Debitage Domestic Artifact Scatter and Landscape Elements	Lithic Scatter Early to Mid-20 <sup>th</sup> Century Farmstead Homesite	Not Eligible
31WA2327	Historic	Foundations, Artifact Scatter (Architectural Materials, Ceramics, Bottle Glass)	20 <sup>th</sup> Century Farmstead Homesite and Outbuildings	Not Eligible
31WA2328	Historic	Landscape Elements and Architectural Materials	Mid-20 <sup>th</sup> Century Boy Scout Recreation Area	Not Eligible

Table 3.2. Continued.

Site Number	Cultural Component	Site Description	Site Type	NRHP Status
31WA2329	Historic	Architectural Materials, Logging Machinery, and Artifact Scatter (Utensil, Bottle Glass)	Mid-20 <sup>th</sup> Century Logging site	Not Eligible
31WA2330	Precontact	Lithic – Debitage	Lithic Scatter	Not Eligible
31WA2331	Precontact	Lithic – Debitage	Extraction Site and Lithic Scatter	Not Eligible





Figure 3.2. Previously recorded resources located within a 1.6 km (1 mi) buffer of the Survey Area.



## 3.2 NATIVE AMERICAN CULTURE HISTORY

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### 3.2.1 Paleoindian Period (10,000 - 8000 BC)

The most widely accepted model for the peopling of North America argues that Asian populations migrated to the western hemisphere over the Bering land bridge that linked Siberia and Alaska, some 12,000 years ago. However, data are mounting in support of migrations that date to before 12,000 years ago. Regardless of the precise timing of the first occupation of North America, it does not appear that North Carolina was inhabited by humans prior to about 12,000 years ago.

Work throughout the Southeast (Anderson 1995:4) has identified Early (9550–8950 BC), Middle (8950–8550 BC), and Late (8550–8050 BC) subperiods. Evidence of Paleoindian occupation is based primarily on the recovery of various types of lanceolate fluted and non-fluted projectile points. Within the Southeast, these types include Clovis, Cumberland, Dalton, Quad, Redstone, Ross County, and Suwannee. According to the Paleoindian Database of the Americas (<http://pidba.utk.edu/>, updated 12 January 2019 and accessed 13 February 2023), several hundred fluted points have been recorded for North Carolina. Based on their distribution, there appear to be two clusters of Paleoindian activity within the state. One is centered in the eastern Piedmont and along the fall line and is characterized by the presence of Redstone points and the use of metavolcanic raw materials. A second is identified in the westernmost portion of the state and is characterized by the presence of Cumberland points and chert raw materials undoubtedly derived from sources in Tennessee (Daniel 2000; Daniel and Goodyear 2006).

Early and Middle Paleoindian projectile point variants in the North Carolina Piedmont include the Hardaway Blade and Hardaway-Dalton. Late Paleoindian variants include Hardaway Side Notched. Some archaeologists view the Hardaway complex as a manifestation of the Early Archaic period, suggesting that the Hardaway types are the result of synchronic tool modification as opposed to diachronic change. Most agree, however, that the other tools, such as side- and endscrapers found in association with Hardaway Complex points, are very similar to a Paleoindian tool assemblage (Ward and Davis 1999:42). As such, the Hardaway Complex could be a transitional Late Paleoindian/Early Archaic assemblage.

Settlement models derived from data recovered in the Piedmont suggest a Paleoindian settlement system focused on high-quality lithic material (Gardner 1977). Little is known about Paleoindian subsistence in the Southeast. Most of the information regarding subsistence is based on evidence from sites in the western United States. This model essentially holds that Paleoindian groups were highly mobile, big-game hunters. Floral and faunal remains recovered from a Paleoindian hearth at Shawnee Minisink in Pennsylvania include Hawthorne plum, hackberry, wild grapes, and unidentified fish, demonstrating a broader subsistence pattern (Department of Anthropology, American University n.d.). Thus, while megafaunal resources continue to play an active role in Paleoindian research (e.g., Haynes 2002), higher biomass in the eastern Woodlands may have allowed a more generalized foraging pattern and reduced mobility (Dunbar 1991; Lepper and Meltzer 1991).

### **3.2.2 Archaic Period (8000 - 1000 BC)**

By about 10,000 years ago the Pleistocene megafauna that contributed to the diet of the first peoples to enter the Americas were extinct. In addition, the environment continued to change, albeit more slowly than in the preceding Paleoindian period, stabilizing at modern conditions only about 4,000 years ago. The initially widespread oak-hickory forests of the eastern Woodlands were gradually replaced with fine-grained and patchy pine-oak forests, a process that may have intensified during the mid-Holocene Hypsithermal interval (Delcourt and Delcourt 1981). In general, these dynamics initially fostered highly mobile forager economies like those of their Paleoindian forebears, followed during the Hypsithermal interval by a more condensed settlement strategy characterized by decreasing mobility and greater reliance on local resources, though likely still a foraging economy. By the end of the Archaic, environmental stabilization allowed groups to map-on to locally occurring resources and ultimately underwrote the development of seasonal rounds by the end of the Archaic period. Population densities and sociocultural complexity both increased throughout the Archaic period, but particularly after climate stabilization.

#### ***Early Archaic (8000 - 6000 BC)***

Early Archaic sites, like Paleoindian sites, are typically identified through a series of diagnostic projectile points. As noted, some archaeologists view the Hardaway complex as a transitional Late Paleoindian/Early Archaic lithic assemblage, a viewpoint that is open to debate (Ward and Davis 1999). There are, however, a series of points that have been categorized as Early Archaic based on definitive stratigraphic context in the Piedmont; these include Palmer Corner Notched and Kirk Corner Notched types. Other Early Archaic tools include endscrapers, sidescrapers, blades, and drills along with various bone and antler tools.

Early Archaic sites are typically small, with a settlement pattern indicating frequent relocation within both floodplain and upland ecosystems (Steponaitis 1986:371). Anderson and Hanson (1988) emphasized intergroup social organization, contending that periodic gatherings of small Early Archaic bands allowed trade as well as exchange of information. Individual bands were hypothesized to be primarily confined to major river drainages, with gatherings occurring at advantageous fall line locations along these drainages. In contrast, Daniel (1998) argued that bands were not tethered to river drainages, but to lithic raw-material sources. High mobility and periodic retooling at quarry locations were suggested by a technology organized around the curation of multipurpose tools made of high-quality materials supplemented by expedient tools from locally available, lower-quality materials.

#### ***Middle Archaic (6000 - 3000 BC)***

The Middle Archaic is marked by the appearance of the Stanly Stemmed projectile point, along with Morrow Mountain Stemmed and Guilford Lanceolate points (Ward and Davis 1999:73). The tool assemblage expanded to include atlatl weights, grooved axes, and notched pebbles but very few other formal tools. Instead, there appears to be a preference for using informal, expedient

tools for cutting or scraping tasks. Utilized flakes (i.e., flakes displaying use wear) are thus expected in Middle Archaic deposits and are evidence of a foraging economy.

During the Middle Archaic the cultural patterns that had characterized both the Early Archaic and the preceding Paleoindian periods changed rapidly. The causes of this fairly radical shift in technological organization are likely diverse, but clearly access to high-quality lithic raw material quarries declined. If the Anderson and Hanson model of Early Archaic settlement is accepted, the implication is that the social relations underwriting access to distant quarries also underwent a dramatic shift; if Daniel's model is accepted, then individual group range was severely curtailed. In either event, accompanying this change was both increased population density and a period of rapid environmental instability, the mid-Holocene Hypsithermal, which produced a patchy, coarse-grained environment in the Piedmont.

### ***Late Archaic (3000 - 1000 BC)***

The Late Archaic is marked initially by the broad-bladed, broad-stemmed Savannah River Stemmed "point," which more likely functioned as an all-purpose knife as well as a spear. Late Archaic groups also used atlatl weights, grooved axes, scrapers, drills, and steatite vessels. Broader patterns of subsistence technology were marked by the use of stone mortars for grinding nuts and seeds and notched pebbles that served as sinkers for fishing nets.

Within the Piedmont, Late Archaic sites have been characterized as small, temporary camps; however, stone-lined hearths and deep midden deposits in some locales suggest a greater level of sedentism. During this period in central North Carolina, as well as throughout the Southeast, archaeobotanical analyses suggest that Late Archaic groups began selectively harvesting and possibly even cultivating *Chenopodium*, squash, sunflower, and maygrass (Ward and Davis 1999:64-67).

### **3.2.3 Woodland Period (1000 BC - AD 1100)**

The Woodland period is marked by cultural regionalization typically reflected in ceramic assemblages. This has led to an analytical division of the Piedmont into multiple subregions. The RDU Airport occurs in the Central Piedmont archaeological region, a zone that encompasses much of the area between Raleigh and Greensboro west of the Fall Line.

#### ***Early Woodland (1000 - 300 BC)***

In the central Piedmont, the Early Woodland is known as the Badin phase and is identified by the recovery of sand-tempered Badin cord-marked and fabric-impressed pottery. Lithic tools associated with this phase include Gypsy Stemmed, Swannanoa Stemmed, and the crudely made triangular Badin projectile points along with various forms of expedient tools.

Little is known about Early Woodland settlement patterns. Limited data on site locations suggests a somewhat generalized pattern of foraging and collecting, guided in large part by the seasonal

availability of resources and ecological variability, but the tenuous nature of this speculation is exacerbated by the fact that Late Archaic settlement patterns are also poorly understood. Subsistence data for the Early Woodland are also lacking. Archaeologists infer, based on the limited recovery of faunal remains and the locations of sites, that Early Woodland groups continued a generalized foraging and collecting lifestyle as seen during the Late Archaic (Ward and Davis 1999:80-83).

### ***Middle Woodland (300 BC - AD 800)***

The Middle Woodland, known as the Yadkin phase, is marked by the recovery of the Yadkin pottery series. Yadkin potters tempered their wares with crushed quartz and applied check-stamped, cord-marked, fabric-impressed, and simple-stamped surface treatments. Diagnostic projectile points include large, triangular projectile points with concave (sometimes deep) bases.

Although Yadkin phase sites are more prevalent than Badin phase sites, little is known about settlement and subsistence patterns. As with Badin phase sites, inferences are made based on site location within prescribed ecological zones. A large circle of overlapping Yadkin hearths at the Town Creek site, however, does suggest long periods of occupation among Yadkin groups (Ward and Davis 1999:83-85).

### ***Late Woodland (AD 800 - 1100)***

Early Late Woodland (AD 800–1000) cultural development remained relatively consistent in terms of the gradual trends of site locations and cultural material seen during the Early and Middle Woodland periods. However, by AD 1000, cultural transformations developed in the form of the Piedmont Village Tradition. During this time, populations consolidated into larger villages that were often surrounded by stockades to protect themselves from hostile neighbors.

The Uwharrie phase (AD 800–1200) is the earliest manifestation of the Late Woodland period in the Piedmont and is considered the “mother” of the Piedmont Village Tradition (Ward and Davis 1999:100). Material culture included small, triangular Uwharrie projectile points and Uwharrie pottery tempered with clay, crushed quartz, and sand. The pottery displayed fabric-impressed or net-impressed exterior surfaces with incised rims. While Uwharrie groups continued to hunt and gather, archaeobotanical data from storage pits indicates domesticated plants, including corn, played a growing role in the overall subsistence regime. Settlements typically occurred within fertile floodplains, further indicating a reliance of plant domesticates (Ward and Davis 1999:100-102).

The first half of the Haw River phase (AD 1000-1400) marked a continuation of trends identified during the preceding Uwharrie phase. Material culture included small, triangular PeeDee projectile points and Haw River pottery tempered with clay and crushed quartz. The pottery displayed brushed, cord marked, net impressed, and plain exterior surfaces. Settlements were typically scattered in small hamlets adjacent to fertile floodplains. By AD 1200, the dispersed settlements give way to compact palisaded villages (Ward and Davis 1999:103-105).

The Hillsboro phase (AD 1400-1600) continued the tradition of small hamlets and nucleated villages within fertile riverine floodplains seen at the end of the Haw River phase. By the end of the phase, settlements became more dispersed and moved out of the broad floodplains to valley margins and associated uplands. These sites typically lacked evidence of stockades that helped define the Piedmont Village Tradition. Material culture included small, triangular Caraway projectile points and Hillsboro pottery tempered with crushed feldspar and sand. The pottery displayed simple-stamped, check-stamped, and plain exterior surfaces (Ward and Davis 1999:112-117).

### **3.3 HISTORICAL CONTACT AND POST-CONTACT CONTEXT**

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#### **3.3.1 Native Groups during the Age of Exploration**

When Europeans first arrived in the New World, they were met by Native groups that had lived on these lands for millennia. In the central Piedmont of North Carolina, archaeologists have identified three phases (Mitchum, Jenrette, and Fredricks) attributed to contact-period Native groups.

The Mitchum phase (AD 1600–1670), defined by excavations at the Mitchum site (31CH452), is attributed to the Sissipahaw Indians that occupied the Haw River valley in the seventeenth century. Excavations yielded evidence of a stockade as well as an oval-shaped structure, storage pits, smudge pits, and hearths. Material culture included pottery tempered with sand and crushed feldspar, like Hillsboro pottery, along with English trade items such as brass bells and rolled brass, copper, and glass beads. Although no gun parts were encountered, the use of guns was inferred by the recovery of gunflints (Ward and Davis 1999:233-237).

The Jenrette phase (AD 1600–1680), defined by excavations of the Jenrette site (31OR231a) on the Eno River, is attributed to the Shakori Indians. Excavations produced evidence of a stockade and several houses around an open plaza. Additional features included storage pits and large roasting pits or earth ovens. Fauna and archaeobotanical analyses have demonstrated the importance of wild and domesticated resources. Pottery is like types found at the Mitchum site in terms of temper; however, exterior surfaces were typically plain or roughly smoothed or simple stamped. The Shakori also continued to utilize small, triangular projectile points (Ward and Davis 1999:237-242).

The Fredricks phase (AD 1680–1710), defined by excavations at the Fredricks site (31OR231) is attributed to the Occaneechis, a Native group that moved out of the Roanoke valley to the Eno River after Bacon's Rebellion in 1676. Excavations revealed a small, stockaded village with at least 11 structures. Fredricks phase potters tempered their wares with sand and applied a check stamp or smooth/plain exterior finish to the vessel. Native lithic tools included small, triangular projectile points, drills, gravers, scarpers, and perforators. In addition to the English ornamental

trade items like beads encountered at the Mitchum and Jenrette sites, archaeologists found utilitarian English goods and tools such as knives, hoes, kettles, tobacco pipes, and guns at the Fredricks site (Ward and Davis 1999:242-246).

### **3.3.2 European Arrival and Early Settlement 1524 - 1729**

The first Europeans to “discover” present-day North Carolina arrived in the early sixteenth century. The French requisitioned Giovanni da Verrazano to explore the western Atlantic Ocean and to locate a northerly route to China. Verrazano reached the coast of North Carolina in March 1524, briefly visiting the mouth of the Cape Fear River and making landfall in the Bogue Banks area. During his expedition, Verrazano encountered Native Americans living along the coast. Accounts of these travels described the inhabitants as friendly, tan in color with dark black hair, well built, dressed in animal skins, and adorned with bird feathers (Powell 1989:15).

Later in the century, the English initiated plans for the establishment of a permanent colony in the New World. In 1584, Walter Raleigh, under the auspices of the Queen of England, sent Philip Amadas and Arthur Barlowe to reconnoiter a suitable location for a North American colony. Before the reconnoiter expedition returned, Raleigh had begun preparations for a second expedition to North America. Barlowe’s journal of the expedition, along with John White’s drawings and Thomas Harriot’s notes from the 1585 Ralph Lane expedition to the New World, provide invaluable descriptions of the Native people and their daily lives and interactions with the English. The Native population proved invaluable for the survival of early attempts at New World colonization. However, frustrations and misunderstandings strained the burgeoning relationships.

Lane’s colony was unsuccessful and returned to England in 1586, just as Raleigh was preparing a much larger and more permanent colony for the Chesapeake Bay region. Unlike the previous attempt, this colony would include women and children. Under the leadership of John White, the colonists set sail in May of 1587 and arrived near Roanoke Island on 22 July. As the captain of the ships proved unwilling to press forward, the colonists established themselves at the site of Lane’s 1585 colony, finding many of the structures in good repair. Arriving too late for the growing season and in desperate need of supplies, White returned to England. Untrustworthy ship captains and threats of Spanish invasion delayed White’s return to the Roanoke colony. In August 1590, White and a small group of men made their way to the settlement only to find it abandoned. White found the word CROATOAN carved in a tree, but no trace of the colonists (Powell 1989:44-48).

Settlement of the region continued over the course of the seventeenth century, primarily focused along the coast due to potential threats from powerful Indian tribes farther west (Mobley 2003:26-27). In 1663, Charles II of England granted eight English noblemen and their heirs all of present-day North and South Carolina. The eight noblemen, known as Lord Proprietors, received the Carolina Charter which extended from the Atlantic Ocean “to the west as far as the south seas” (Murray 1983:13). Most of the early records of present-day Wake County are from reconnaissance efforts by various Englishmen. In 1701, English adventurer and surveyor John

Lawson led the first known expedition into present-day Wake County. Lawson and his party of Englishmen traveled eight weeks inland from Charles Town in South Carolina (Murray 1983). According to Lawson's journal of the trip, the party made it to the Neuse River between present-day Durham and Wake Counties, where they crossed with the help of the Tuscarora tribe (Bayley 2006; Barlowe 2002 [1584]). The Lawson expedition proceeded to the Falls of the Neuse River in northern Wake County where they camped for the night (Lawson 2001 [1709]). For the next forty years, the land comprising present-day Wake County remained mostly wilderness, and few European ventured into the area.

During this period, the Tuscarora continued to be the predominant demographic in the region. The Tuscarora established their primary towns on or near the Pamlico, Neuse, Roanoke, and Tar Rivers, though they migrated with the seasons. During the summer, members of the group lived in short, round houses with circular floors and domed roofs made of bark and cypress or cedar wood. During the winter, the Tuscarora migrated to a different location where they built houses close to each other and insulated with gathered plant material. The Tuscarora hunted game and grew small crops including corn. In the middle of the seventeenth century, the Tuscarora and northern Virginian settlers started a fur trade. However, as more settlers began establishing communities further inland, the resulting conflict became known as the Tuscarora War which lasted from 1711 to 1714 (Martin 2016).

The Tuscarora War ushered in the next recorded exploration of Wake County. At least two expeditionary militia passed through present-day Wake County on their journey from South Carolina to assist the white coastal settlers. The fur trade flourished between the Native Americans of the interior and the English settlers on the coast both before and after the Tuscarora War. William Byrd recorded trading paths which crossed Wake County in 1728 when surveying the Virginia-Carolina dividing line. The "Green's Path" and the "Pee Dee Trail" are two well-known trading routes which crossed present-day Wake County (Murray 1983).

### **3.3.3 Settlement and Colonial Period 1729 - 1776**

Despite incentives to families to make the journey, settlement remained slow and satisfied neither the Lords Proprietors nor the king. In 1729, all but one of the heirs of the original proprietors agreed to sell their shares back to the then reigning monarch, George II. Between 1729 and 1746, early settlers in Wake County received their land grants from George II through the royal governors of the North Carolina Colony. The remaining heir, the Earl of Granville, retained the entire northern half of present-day North Carolina. All residents in this Granville District, including the present-day Wake County, paid, and received land grants from Lord Granville's agents. The four earliest known grant holders in present-day Wake County never actually settled in the area (Murray 1983).

The earliest known settlers in present-day Wake County began arriving in 1739 and established their homes near waterways. These new settlers used animal and plant names to identify locations such as Redwood or Oak Grove. By the end of the 1750s, over fifty families had moved into present-day Wake County, but the area remained remote, and larger, predatory animals

became a problem for the few residents (Murray 1983:26-27). Officials passed a law that rewarded anyone who brought in animal skins such as wolves and panthers. Records from 1764 show a man received a bounty of ten shillings for a wolf scalp. The problem remained even after the Revolution, as the Wake Court paid two men double the bounty for wolf scalps in 1779.

Most of the settlers in early Wake County owned no enslaved Africans and African Americans and remained relatively self-sufficient. Eventually the practice of sharing work with neighbors led to a diversification of labor and skills. One of the results of this diversification included the establishment of grist mills along the waterways. After 1758, all water grist mills were public and new mills had to be permitted by the county court. Grain growers could take their harvest to the mills to be ground and would pay the miller in a percentage of the processed grain (Murray 1983).

Officials founded Wake County on March 12, 1771, from the surrounding counties of Johnston, Cumberland, and Orange and named for Margaret Wake Tryon, the wife of the royal governor William Tryon (Powell 2006). At the time of the county creation, no cities existed yet and as such, officials struggled to decide on a location for a county seat. The only site which seemed appropriate for the County seat was the crossroads of the main east-west road to Hillsborough and a highway from South Carolina to Virginia. Officials eventually chose a plantation near the crossroads belonging to Joel Lane, one of the commissioners tasked with establishing the county seat. While initially called Wake Crossroads and Bloomsbury, the area eventually became known as Wake Courthouse. The first session of the county court occurred in June 1771 in Joel Lane's personal home nearby while the courthouse remained under construction (Murray 1983).

While Wake County representatives attended the assembly in New Bern in 1771 and 1773, there were no representatives from Wake County listed in the records for the session held in April 1775. Instead, the Wake men joined the Second Provincial Congress which accepted the First Continental Congress's statement asserting the people's right to hold meetings and present their complaints to the king. A second meeting in August declared that the British government had no right to impose taxes on North Carolinians without representation and established a temporary government. Officials tasked Wake County with raising two companies of fifty men for the continental army. However, many in the county remained divided on the question of independence and revolution (Murry 1983).

### **3.3.4 Revolutionary War and Early Statehood 1776 - 1800**

Wake County men fought in the Battle of Moore's Creek in February 1776 resulting in the defeat of Tory forces from the upper Cape Fear Region and the end of British plans for invading the South. In 1776, the new government adopted the Constitution of North Carolina, which served the state for the next six decades. Wake County provided both men and supplies for the war effort. Records indicate in 1779, 795 men enlisted from Wake County and the courthouse served as meeting point for soldiers from other counties (*News and Observer*, 06 June 1926:9M).

As early as 1779, officials began considering Wake County for the seat of the new state government. Initial deliberations on the subject occurred at Wake Courthouse in 1781, 1783,



1788, and 1791. During this period, the Revolution ended, and then President George Washington commented on the delay in choosing a state capital in 1791 on his trip through North Carolina. In 1792, after years of debating, the state government purchased a tract of land belonging to Joel Lane adjacent to Wake Courthouse for £1,378. The name chosen for the capital, Raleigh, honored Sir Walter Raleigh, who had sent the first English settlers to North Carolina to the ill-fated Roanoke colony (Murray 1983; Powell 2006). It would take an additional two years to complete the statehouse.

The establishment of the state capital brought an increase in population and business to Wake County. New residents purchased lots to be nearer to the capital and existing residents opened hotels and entertainment venues. In 1794, the only post office in Wake County opened in Raleigh. From 1790 until 1800, Wake County grew from 10,192 to 13,437. Raleigh, which had not existed in 1790 had 669 residents by 1800. However, the majority of Wake County remained rural. It would take nearly four decades to incorporate another town after the establishment of Raleigh. In 1800, 12,768 people lived in the vast rural areas of Wake County (Federal Writers Project 1939; Forestall 1996).

### **3.3.5 Antebellum Period and Civil War 1800 - 1865**

In June 1804, the United States Circuit Court in the Wake County Courthouse heard a suit brought against the North Carolina landholders in Wake and several other counties. The plaintiffs in the case were the heirs of Lord Granville, who sought to regain title to, or reimbursement for, thousands of acres of land that had been confiscated as loyalist property following the Revolutionary War (Leonard 2019). After losing in Wake County Court, the Granville heirs appealed the case to the United States Supreme Court, where it was postponed and ultimately dismissed in May 1818, based on a technicality (Coulter 1913). During this time, settlement slowed and many families in the area began moving to locations where their land titles would not be in doubt.

During the first third of the nineteenth century, agriculture remained the predominant business in Wake County. No large-scale production of cotton existed in Wake County. The land proved better suited to corn and grain production, and Wake County lacked the enslaved labor required for extensive cotton plantations. Most farms remained small and operated by families. However, many moderately rich planters lived in the county and owned between ten to twenty enslaved African Americans, with a few larger estates owning more than 100 individuals. Only in Raleigh were non-agricultural businesses the norm, and most supported governmental functions and served those people in service to the state and county governments. This included law enforcement and a volunteer fire company, established in 1813 and 1819, respectively. The population of Wake County steadily grew, reaching 20,102 by 1820 (Forestall 1996). However, in Raleigh, the population dropped from 2,674 in 1820 to 1,700 in 1830. Plans to make Wake County a commercial center failed when the nearby Neuse River proved to be impossible to navigate reliably. Many people pressed for the capital to relocate to a more developed location, especially after a several fires destroyed not only buildings but also official records.

In the effort to rebuild Raleigh after the fires, private citizens introduced the first railroads, by building a tramway to connect the local quarry to Raleigh to demonstrate how easily stone could be moved for rebuilding. Construction of the tracks finished on New Years Day 1833, just days after the railroad company incorporated. In November 1833, legislators attended a statewide internal improvements convention in Raleigh which prompted interest in more railroads. During the remaining years of the 1830s many railroad companies were chartered by the state but only two lines operated in Wake County by 1840—one from Raleigh to Gaston, and the other from Wilmington to Weldon. Other railroads would follow, including the North Carolina Railroad chartered in 1849. This new railroad connected Raleigh to other major cities throughout the state (North Carolina Railroad Company 2021). Raleigh continued to grow as it rebuilt. The construction created new jobs and attracted new businesses and craftsmen. Census records from 1850 show cabinet and carriage makers, tanneries, and a burgeoning turpentine industry among others. A special census in 1857 listed multiple physicians, hotel keepers, ministers, printers, and international residents in the city, despite ranking as the fourth largest in North Carolina (Murray 1983:413,416).

In 1860, the total population of Wake County reached 28,627, including 10,733 enslaved African Americans (Forestall 1996). When President Lincoln called on North Carolina Governor John Willis Ellis to send troops to help suppress the insurrection at Fort Sumter by Confederate forces, the governor refused. Secession became inevitable in North Carolina from that point, with Wake County and Raleigh serving as a focal point for mustering and training troops for the Confederate cause. On May 20, 1860, North Carolina separated from the Union by unanimous vote. Even before secession, four companies from Wake County were ready to march. By the end of the war, at least fifteen units consisted almost entirely of men from Wake County.

The only battle in the county happened at Morrisville Station on April 13-15 in 1865. No major battles occurred in the capital of Raleigh, though officials ordered the fortification of the city with earthen mounds. In April 1865, Union General William T. Sherman marched towards Raleigh while chasing General Joseph E. Johnston's Confederate Army of Tennessee. On April 12, then Governor Zebulon Vance sent a commission to meet with Sherman to offer the surrender of the city with the promise that it would not be destroyed. On April 26, 1865, Sherman received the unconditional surrender of Johnston's army in present-day Durham. News of the surrender reached Raleigh the following day (Howard 2016).

### **3.3.6 Reconstruction and Late Nineteenth Century**

In preparation for his departure, General Sherman established the military government for the central counties made up of Union troops staying in Raleigh, which lasted until the end of the year. Military rule would be re-imposed on North Carolina from March 1867 until July 1868 under the Congressional Reconstruction Acts, though some federal troops would remain until 1870. Life began to return to a new normal. The Freedman's Bureau in Raleigh was officially called the Bureau of Freedmen, Refugees, and Abandoned Lands and as such, it helped both newly freed Blacks as well as poor Whites. Most of the newly freed African Americans remained on the land of their masters. In compliance to the new 1868 North Carolina constitution, the counties were

surveyed and divided into townships to replace the antebellum captains' districts. While the township plan only lasted until 1875, they remained convenient for voting, taxes, and maintaining the roads within their jurisdiction, which had previously been the responsibility of property owners near the road.

Many residents turned to tenant farming and sharecropping. Crops included cotton, corn, wheat, oats, and sweet potatoes but cotton and tobacco dominated agriculture in the county. Not until 1870s and 1880s would a tobacco market begin to materialize in Raleigh (Murray 1983:560). In 1870, Wake County had a population of 35,617 and grew to 47,939 in 1880 (Forestall 1996). However, an act of the General Assembly removed a portion of northwestern Wake County to form the new county of Durham the next year. In the census of the following year, Wake County had 49,207 residents (Forestall 1996).

### **3.3.7 Twentieth Century to the Present**

By 1900, Wake County had reached 54,626 residents. The county continued to grow in part due to small communities, which blossomed in the rural areas. By 1912, North Carolina had roughly 77,248 km (48,000 mi) of roads, nearly all of them dirt and maintained by the individual counties. Only 2,100 were surfaced with gravel, and none connected one county to another (Mims 2014). Beginning in 1921, the state took sole responsibility for the construction of hard-surfaced roads to connect all county seats and an extension in 1931 made it responsible for a system of secondary roads (Southern 2006).

With the beginning of the Great Depression, the federal government established several new programs to help employ Americans. In 1934, the then newly formed Resettlement Administration assembled over 2,023 hectares (5,000 acres) northwest of downtown Raleigh. The Civilian Conservation Corps and Works Progress Administration recruited laborers to plant forests, dam creeks to create lakes and institute formal land management practices. These laborers then constructed outdoor recreation areas including rustic-style group camps, bridges, roads, trails, and picnic areas between 1936 and 1941. This site eventually became The Crabtree Creek Recreational Demonstration Area (National Park Service n.d.).

By 1931, several flight facilities operated in Raleigh at Curtiss Field and Eastern Air Transport. With the threat of war growing in Europe, the military began using Curtiss field with the Army Air Corps commandeering aircraft and painting them camouflage. However, Curtiss Field had no room for expansion because a railroad, highways, and a cemetery surrounded it. As a result, in 1940, the state purchased 361 hectares (891.7 acres) to open a modern airport. However, within days of breaking ground at the site, the bombing of Pearl Harbor thrust the US into World War II. The secretary of war and the secretary of the navy chose the new airport site for a training facility (Rains 2006).

The federal government took over in 1942 and completed its construction. The base was designated Raleigh-Durham Army Air Field in January 1943. Barracks and three runways were operational in less than 5 months. The base served as a training facility for the Army Air Corps

(Raleigh-Durham Airport Authority 2022). The military only occasionally used the site. As a result, the Raleigh-Durham Aeronautical Authority (later the Raleigh-Durham Airport Authority), persuaded the federal government to allow commercial airline service to continue. In 1946, the federal government returned the 495 hectares (1,223 acres) of land at Raleigh-Durham Airport acquired and used during the war (Raleigh-Durham Airport Authority 2022).

In 1950, Wake County had a population of 136,450 with 65,123 living in Raleigh (Forestall 1996, US Bureau of the Census 1950). Raleigh quickly outpaced its water supply. The city suffered severe water shortages in 1951 and 1953, which resulted in mandatory water-use restrictions. During this same time, the city of Raleigh requested use of the Neuse River as a water supply but were refused by the state health officials because Durham dumped raw sewage into the river upstream (Hartzer 1984). A federal survey completed in 1964 recommended thirteen possible projects for the Neuse River basin. The primary project called for the constructions of a dam near Falls Village costing \$18.6 million, which would create a reservoir. The reservoir lake could meet the critical water supply shortage in Raleigh.

During the 1950s North Carolina ranked second to last in the nation in per capita income, and tobacco dominated the state economy as well as the economy of Wake County. Graduates from the schools of North Carolina left the state in search of better jobs (Research Triangle Park 2021). In the mid-1950s, several prominent figures began approaching business and academic leaders to form a university-related industry called the “Research Triangle” after its geographic shape between Raleigh, Durham, and Chapel Hill. The committee formally incorporated in 1956 and became a non-profit in 1958. By 1965, the Research Triangle Park was firmly established with an ever-growing list of businesses in residence (Williams 2006). With new industry in the cities of Durham and Raleigh, the population only grew as new jobs attracted more people. In Wake County, between 1950 and 1964, the total number of farms decreased by fifty percent. The jobs brought by the Research Triangle including technology and research would come to dominate the economy of Wake County and concentrated in Raleigh (Edwards-Pittman Environmental, Inc. 2007).

Meanwhile in the city of Raleigh, water shortages continued and plans for use of the new lake were underway. In 1967, construction began on a \$7.6 million intake facility for sourcing water from the Neuse River. Raleigh officials planned the completion date to coincide with the initial completion date given for the federal reservoir project. As a result of the delays and the reoccurring water shortage, the city resorted to building a \$2.5 million temporary reservoir to serve the city. By 1981, the temporary reservoir failed to provide enough water and US Army Corps of Engineers (USACE) Wilmington District partially completed the nearby Falls Lake project. Approximately 30 million gallons of water were supplied to Raleigh daily. On December 3, 1983, the District impounded Falls Lake to full conservation pool level for the first time (Hartzer 1984; USACE, Wilmington District 2021).

The Research Triangle Park and the manufacturing industries it attracted dominated Wake County economy by the 1990s. During this time, many of the remaining agricultural-based industries were further diminished as they failed to compete with larger markets. Wake County

developed a land use plan to manage the rapidly shrinking amount of open space and farmland as Raleigh and its suburbs expanded leading to Wake being one of North Carolina's most urbanized counties (Wake County Government 2021, Powell 2006).

Throughout the 1980s and 1990, the Raleigh-Durham Airport continued to grow with multiple new airlines operating from the airport. To adapt to the ever-increasing travelers utilizing the airport, officials added new terminals, park-and-ride systems, and new concessions in the 2000s. With the addition of more carriers, the airport also began offering a variety of destinations for travelers. Today the airport consists of several renovated or newly constructed terminals. Wake County had a population of 1,111,761 in 2020 (US Bureau of the Census 2021).

### 3.4 HISTORIC MAP REVIEW

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A selection of historical maps and aerial photographs dating between 1871 and 2023 were reviewed to gain an understanding of historical land use, occupation history, events, and other features of the Survey Area and its surroundings over time. These maps have been georeferenced to create **Figures 3.3** through **Figure 3.8**.

The earliest detailed maps consulted were of Wake County. These maps show townships, landowners, churches, retail stores, schools, mills as well as waterways and transit links. No development is illustrated within the Survey Area in 1871. Three roads and three buildings are outside the Survey Area (**Figure 3.3**) (Bever 1871). By 1938, no further development is depicted within the Survey Area (North Carolina State Highway and Public Works Commission 1938; Shaffer 1887; Spoon 1911). The 1938 map shows that a large area around Crabtree Creek to the east of the Survey Area had been demarcated as the Crab Tree Creek Recreational Area (**Figure 3.4**).

A topographic map created in 1943 shows a northwest-southeast road intersected the Survey Area. Two shorter east-west roads connected two buildings within the Project area to the central road (**Figure 3.5**) (US Geological Survey [USGS] 1947). By 1951, the roads and buildings are no longer evident within the Survey Area (**Figure 3.6**) (USGS 1951).

Aerial photographs taken in 1964 show much of the Survey Area covered in dense foliage. The remnants of the northwest-southeast road are apparent intersecting the northern Survey Area border (**Figure 3.7**) (USGS 1964). By 1972, a major roadway south of the Survey Area has been constructed but no roads or buildings are within the Survey Area. Most of the dense foliage has been removed within the Survey Area (**Figure 3.8**) (USGS 1972). Presently, considerable infrastructural development associated with the RDU has resulted in the addition of roads and buildings to the north and west, the existing PE-3 Parking Lot in the center, and reservoirs in the east and west of the Survey Area, along with the reduction of native forest cover (see **Figure 1.2**).

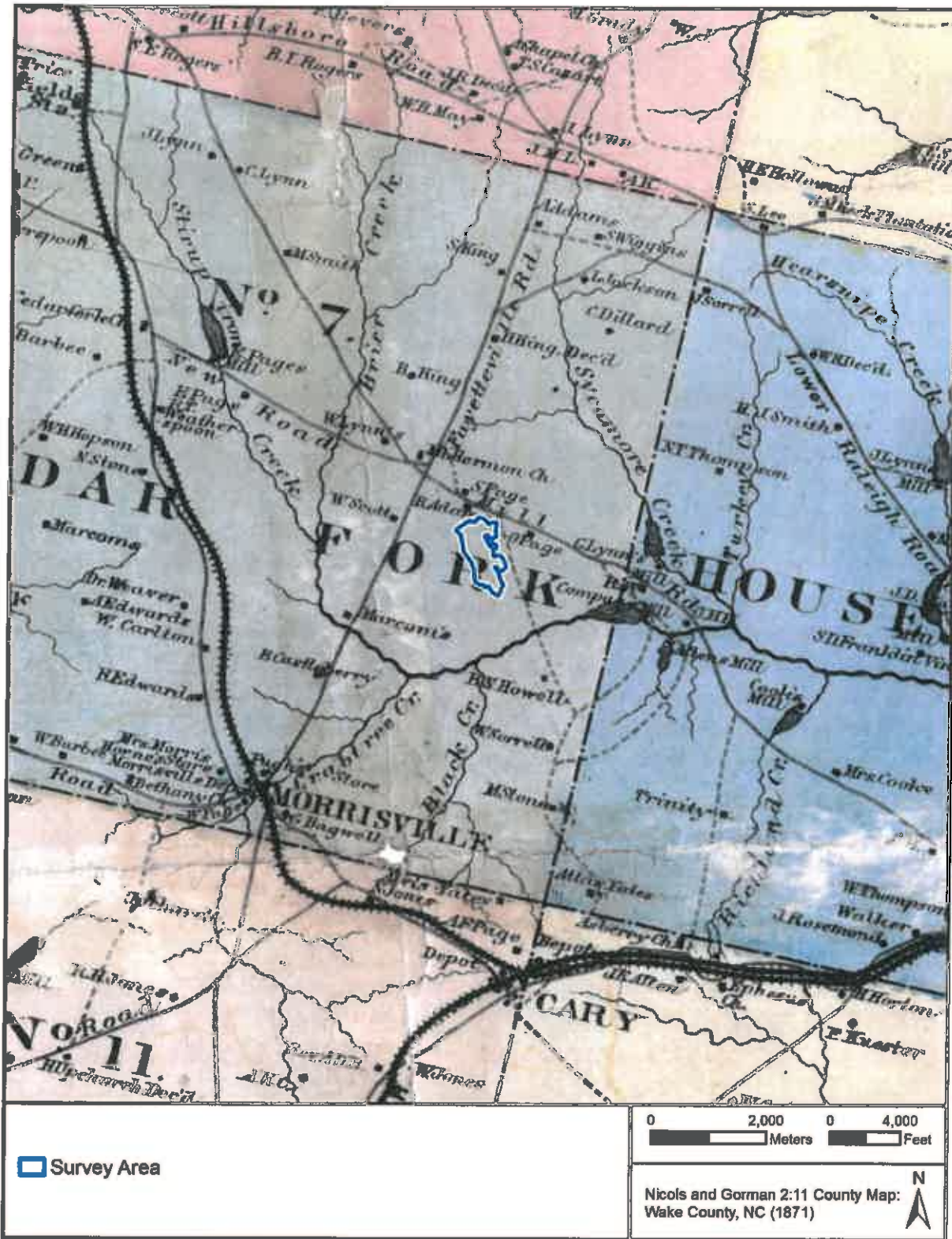


Figure 3.3. 1871 Map of Wake County showing the area surrounding the Survey Area. Source: State Archives of North Carolina.



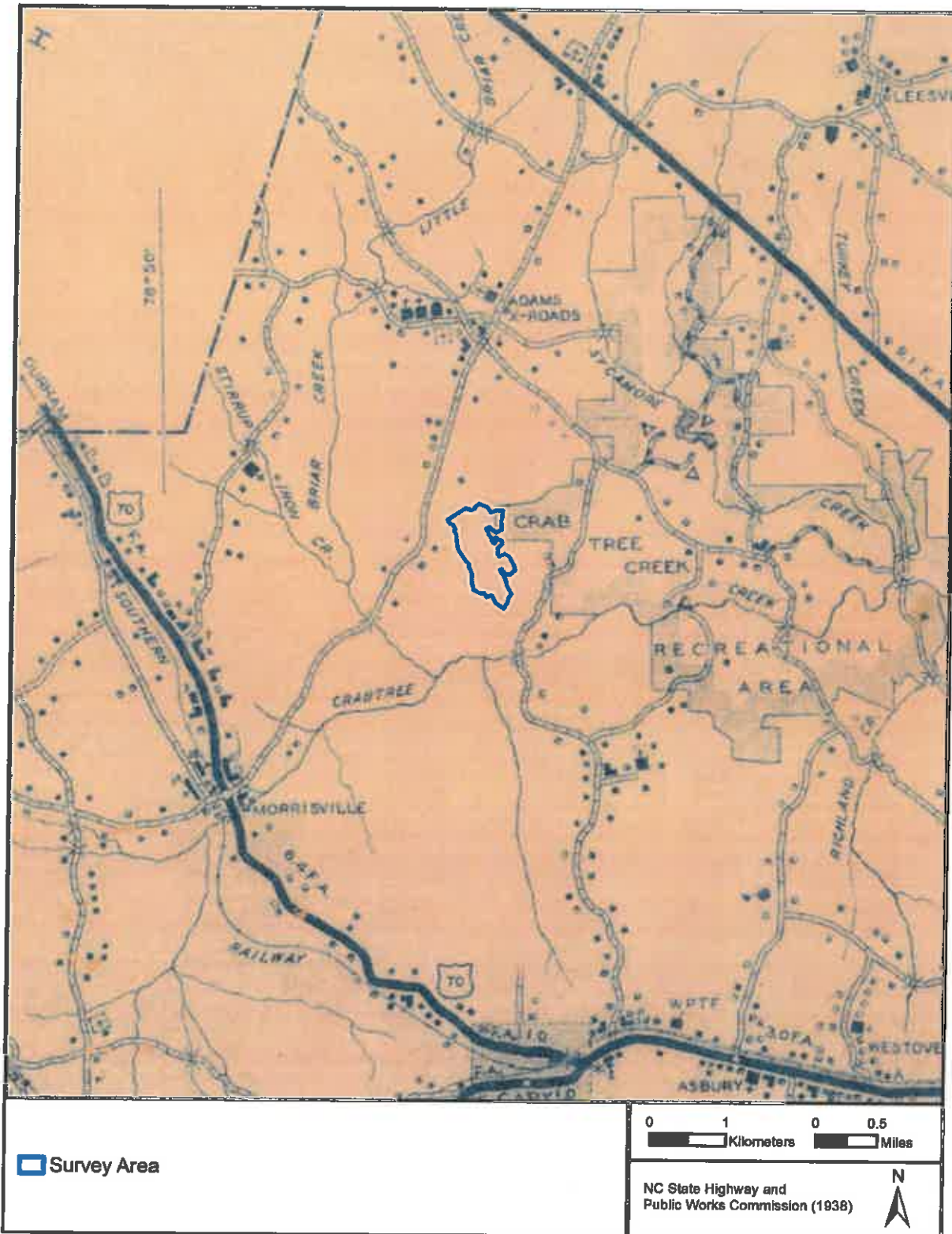


Figure 3.4. 1938 map of Wake County showing the area surrounding the Survey Area. Source: State Archives of North Carolina.





Figure 3.5. 1943 topographic map of the Survey Area. Source: U.S. Geological Survey.



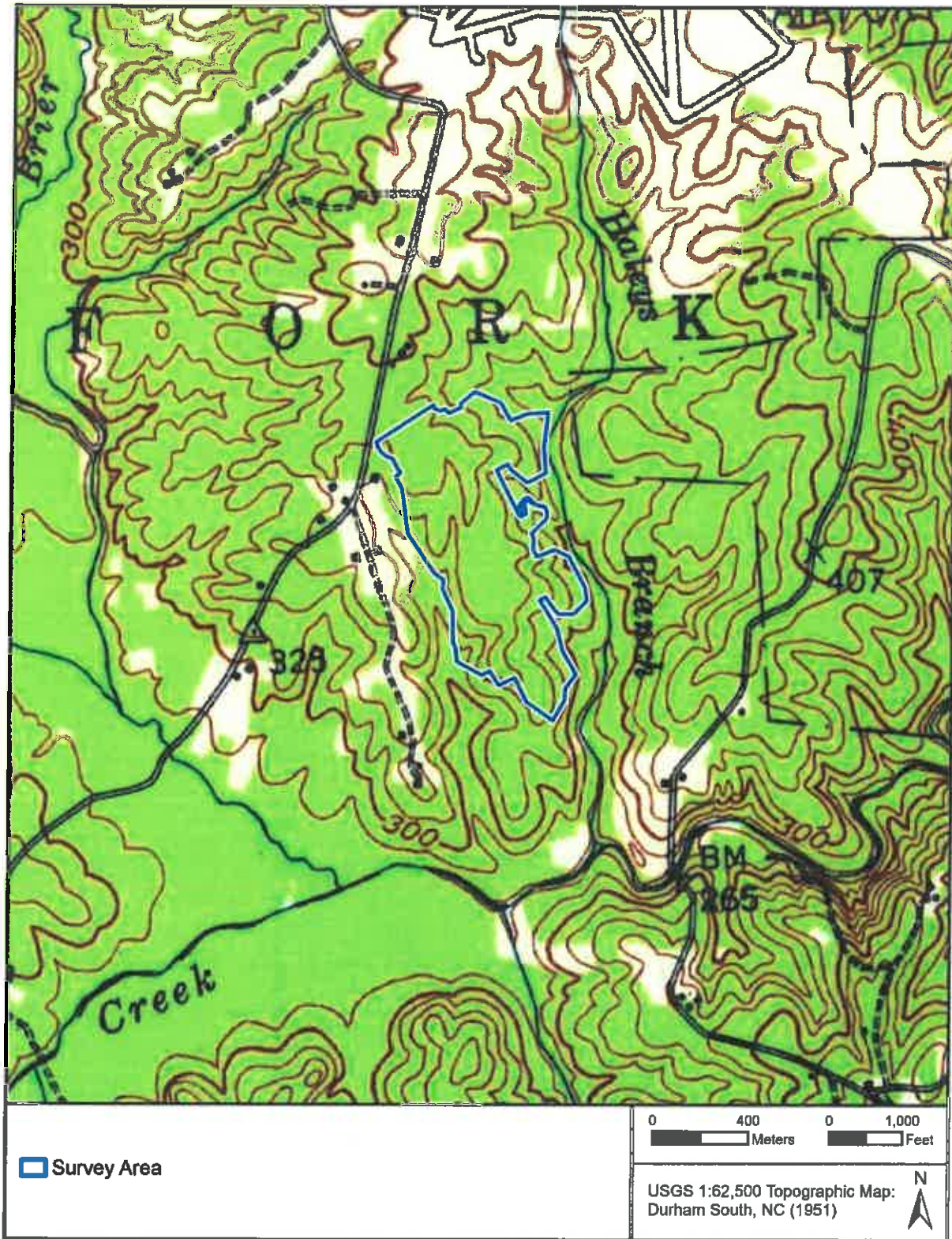


Figure 3.6. 1951 topographic map of the Survey Area. Source: U.S. Geological Survey.



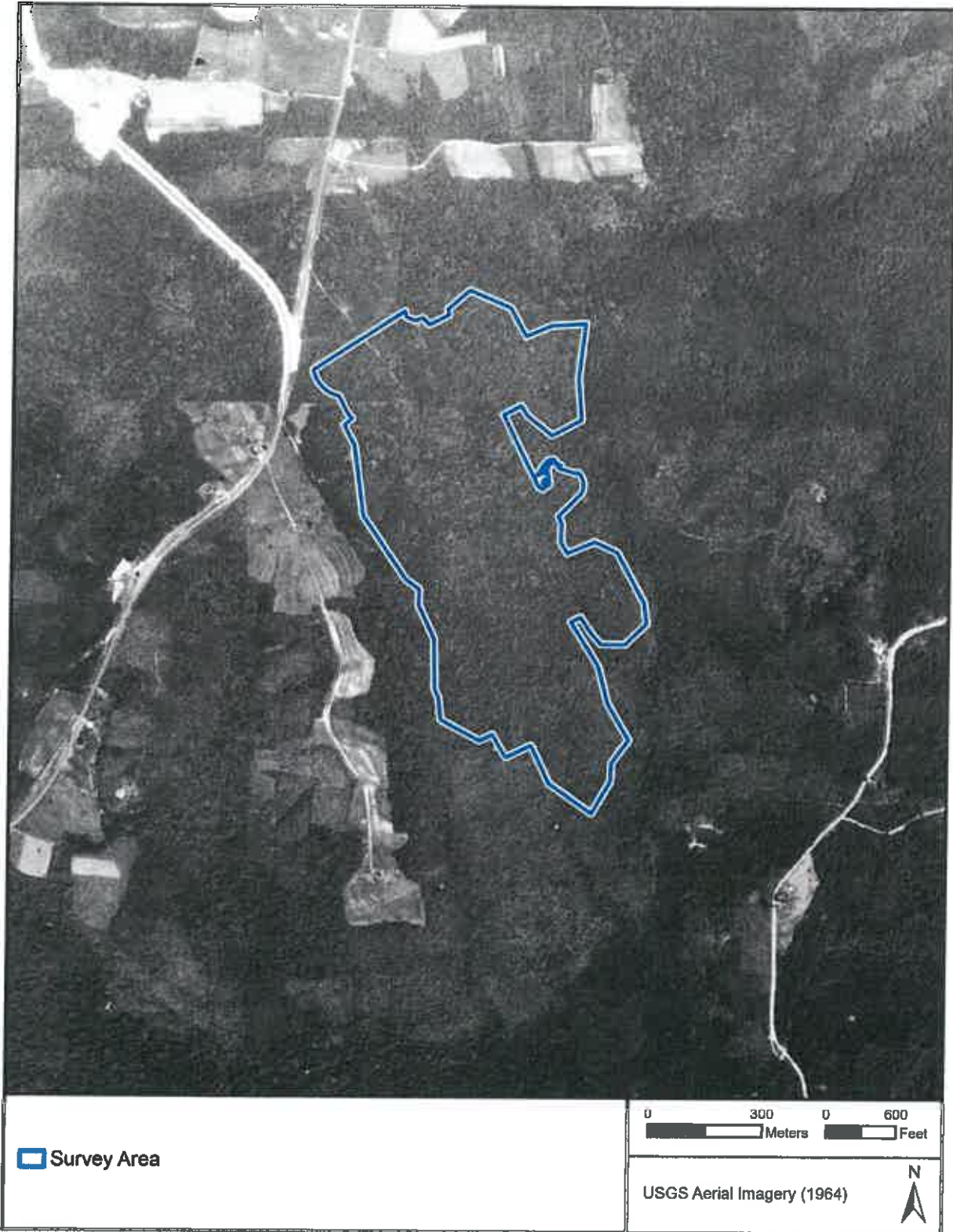


Figure 3.7. 1964 aerial Imagery of the Survey Area. Source: U.S. Geological Survey.

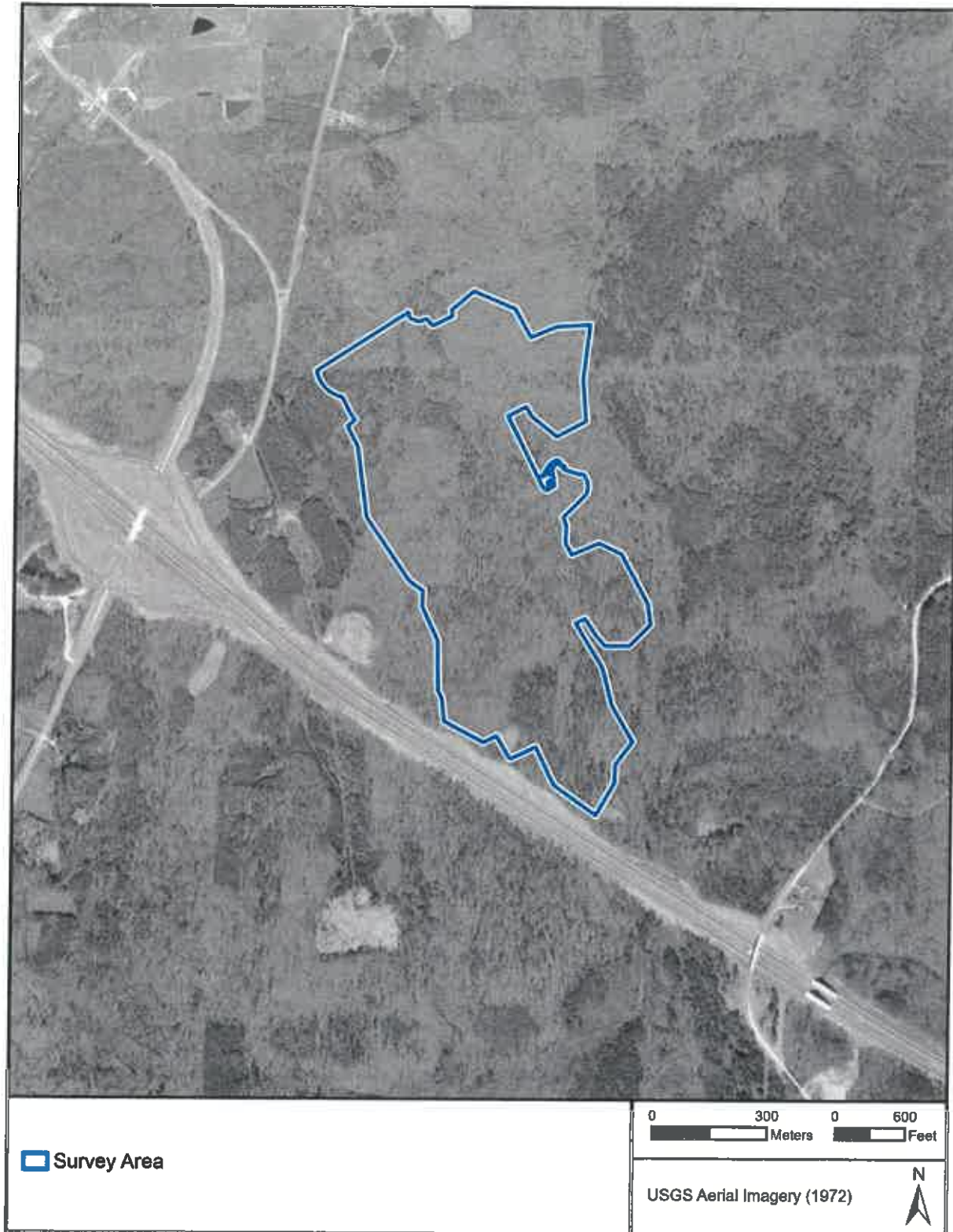


Figure 3.8. 1972 aerial imagery of the Survey Area. Source: U.S. Geological Survey.

## CHAPTER 4. RESEARCH DESIGN AND METHODS

The research strategy for this reconnaissance survey consisted of a background investigation, a historic document search, and field survey. The background research has been presented in earlier chapters, and included literature search, review of the North Carolina Office of State Archaeology (NCOSA) survey and site data, and analysis of pertinent environmental, archaeological, and historical data, including a map and historic photograph review. Geospatial data describing vegetation, physiography, soils, geology, and hydrology were consulted to properly characterize the region.

The primary goals of this investigation were to characterize the landscape and soil types and inventory archaeological resources within the defined Survey Area. The background investigation and field methods employed for this reconnaissance survey provided the ability to assess the potential for archaeological sites by discerning zones of high probability or low probability for cultural resources within the Survey Area. In consultation with the client, an architectural history survey was not conducted as a part of this reconnaissance investigation. While no recommendations for NRHP eligibility are provided from reconnaissance surveys based on their nonsystematic nature (NCOSA 2017), the information acquired through this study reduces the need for further investigations in the Survey Area. The following section outlines the methods employed during fieldwork.

### 4.1 ARCHAEOLOGICAL INVENTORY METHODS

The cultural resources investigation for the Project consisted of (1) pedestrian survey; (2) photography of landscape features and of general conditions across the Survey Area, and (3) subsurface shovel testing. This reconnaissance survey was designed to assess the surface and subsurface of landforms, determine zones with high and low probability of having intact archaeological deposits, and to identify cultural resources within the Survey Area.

Systematic pedestrian survey and shovel testing in the state of North Carolina typically occurs along transects spaced no greater than 30 meters (m) (98 feet [ft]) apart with individual shovel tests placed on intervals no greater than 30 m (NCOSA 2017). However, the current Project is not subject to Section 106 of the National Historic Preservation Act (NHPA) or other state or federal historic preservation regulations, so in consultation with RS&H, the field effort consisted of extensive surface inspection, photographic documentation, and shovel tests judgmentally placed throughout the Survey Area.

Shovel tests measuring 30 cm were judgmentally placed at approximately 100-150 m (328-492 ft) intervals throughout the Survey Area and in locations considered to be areas of high probability for cultural resources, including areas with favorable landforms for human use (ridge tops, knoll, and ridge toes), well-drained soils, less than 15 percent slope, limited natural and anthropogenic disturbance to archaeological contexts, as well as areas associated with cultural

resources on historic maps. On a few occasions during this reconnaissance survey, interval spacing was reduced to under 50 m (164 ft) for better coverage of a presumed high probability area. No shovel tests were excavated within improved surfaces and multiuse trails or in areas with existing or marked utilities, drainage channels and culverts, standing water, visible surface disturbance, and steep slope exceeding 15 percent. These low probability areas were visually inspected for the presence of artifacts and/or features and photographed. The archaeological survey methods were consistent with the *Archaeological Investigation Standards and Guidelines for Background Research, Field Methodologies, Technical Reports, and Curation* issued by the North Carolina Office of State Archaeology in 2017 (NCOSA 2017)

All excavated sediments were screened through 1/4-inch (in) (0.6 cm) mesh hardware cloth. The soil strata and texture, predominant Munsell color, degree of disturbance, and environmental setting were recorded on standardized shovel test forms using ArcGIS Survey123 via mobile devices. Photographs were taken of representative soil profiles. Locations of shovel tests were recorded with mobile devices and an EOS Arrow 100 with sub-foot accuracy using ESRI applications, including ArcGIS Field Maps. Information like areas of disturbance, photo locations and other data was precisely recorded in space with the GPS. After data was collected, locations and descriptions for shovel tests and photographs were checked for accuracy.

## CHAPTER 5. SURVEY RESULTS

SEARCH conducted a cultural resources survey of the Survey Area adjacent to the RDU PE-3 Parking Lot from February 6-10, 2023. Overall, the surveyed area consists mainly of moderately well-drained to somewhat excessively drained soils along with a few somewhat poorly drained areas amidst hilly and forested terrain with slightly to moderately sloping topography.

A total of 50 shovel tests were excavated in judgmentally placed locations within the Survey Area (Figure 5.1). No cultural materials were identified. The following section provides more detail.

### 5.1 SURVEY AREA FINDINGS

The Survey Area is adjacent to the RDU property to the north, Hayley's Branch and William B. Umstead State Park to the east, and I-40 (Dan K. Moore Freeway) to the south and west. The Project area encompasses 154 ac (see Figure 1.2). Vegetation consists of moderately dense hardwood (pine, oak, and others) forest with smaller saplings and shrubs amidst low rolling hills with lower lying drainage channels (Figure 5.2). Overall, the landscape in the Survey Area appears to have been minimally modified and disturbed from activities in the vicinity, including pine tree cultivation, forest clearing for accessways in the northwest and west central portions of the Survey Area, the maintenance of the ground surface for multiuse trails in the south and east portions of the Survey Area, and the construction of airport infrastructure like improved surfaces for roads, parking lots, and drainage systems (Figure 5.3 and Figure 5.4). The most notable forms of disturbance documented in the Survey Area were from infrastructural development including drainage reservoirs on the southeast and southwest sides of the existing parking lot and the steep artificial slope from the eastern edge of the parking lot. Pink flagging tape tied to trees was noted throughout the Survey Area, presumably from previous surveys associated with the proposed expansion of the RDU. Pedestrian survey and shovel testing within this relatively well-preserved natural landscape was aimed at identifying potential archaeological sites including precontact Native American settlements like temporary encampments and/or resource extraction sites as well as historical homesteads.

Subsurface testing included 50 shovel tests judgmentally placed throughout the Survey Area. In general, shovel tests were plotted at 100-150 m intervals to ensure effective coverage of the entire Survey Area. Areas deemed to be of low probability for archaeological sites and/or exhibiting disturbance on the ground surface from various natural and anthropogenic forces were visually assessed and photographed but were not excavated. In certain situations, the interval for shovel testing was reduced to 50 m and below to properly test landforms and other areas assumed to be of high probability for cultural resources. For instance, four shovel tests were clustered in a 40 x 50 m area in the western portion of the Survey Area to determine the presence of a historical structure identified on a 1943 USGS topographic map (see Figure 3.5 and Figure 5.1). This map-identified resource was not located through surface inspection and subsurface testing in this lower-lying area with poorly drained soils.



Shovel testing revealed a relatively uniform soil profile comprised of two to four main strata of sandy loam to sandy clay loam. A typical soil profile in the Survey Area consisted of a thin black (10YR 2/1) sandy loam topsoil layer with decomposed pine needles and many fine roots to approximately 7 cm below surface (cmbs; 2.8 inbs), over a layer of dark grayish brown to brown (10YR 4/2, 4/3) sandy loam with many small to medium-sized roots to approximately 20 cmbs, on top of two strata of subsoil, with one layer of light yellowish brown (10YR 6/4) sandy clay loam to approximately 40 cmbs, over a more compact brownish yellow (10YR 6/8) sandy clay loam to approximately 50 cmbs (Figure 5.5). Evidence of redox was noted in the sandy clay loam subsoil layers with iron accumulations and staining increasing with depth. Most shovel tests were excavated to 40 cmbs and terminated where subsoil was observed. The deepest shovel tests reached depths between 55 and 72 cmbs, while a few shovel tests were halted at approximately 20 cmbs due to large roots and rocks. Minimal variation was observed among the documented soil profiles, primarily based on drainage and stone/gravel inclusions. Moderately well to poorly drained soils were identified throughout the Survey Area (Figure 5.6). Low probability areas with poorly drained soils were primarily in lower lying locations at the base of hills, including the area in the west of the Survey Area with a map-identified cultural resource that was more extensively tested. Additionally, more gravelly soils were documented in the southern and eastern portions of the Survey Area. These profiles exhibited 10-25% subangular pebble to cobble sized inclusions of stones naturally occurring in the region like quartz/quartzite, sandstone, and naturally degrading bedrock.

No cultural features or artifacts were documented during the surface inspection and subsurface shovel testing of the Survey Area. The lack of archaeological evidence in the Survey Area suggests this region was not a popular location for past human settlement and activities until more recent times.



Figure 5.1. Overview of survey results for the Survey Area.



**Figure 5.2. Left: Small rolling hills with a drainage channel at the base amidst a hardwood forest in the southern extent of the Survey Area. Right: Lower lying area with drainage channel and hardwood forest within a zone associated with a map-identified historical structure in the western portion of the Survey Area.**



**Figure 5.3. Left: A cleared unpaved access road leading from the southwest of the RDU PE-3 Parking Lot to an artificial reservoir in the west central extent of the Survey Area. Right: Pink flagging tape from a previous survey marking an old barbwire fence line in the northwest portion of the Survey Area.**

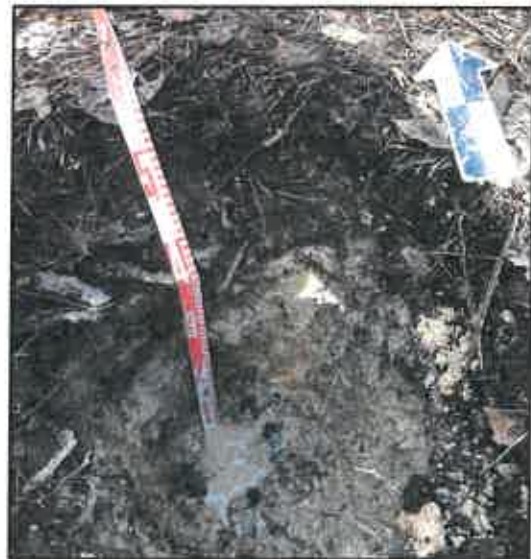




**Figure 5.4. Left: A close view of a maintained multiuse trail lined with a quartz boulder in the southern portion of the Survey Area. These trails run through much of the forested and hilly landscape comprising the Survey Area, resulting in minimal ground disturbance. Right: The extensively modified landscape in the eastern portion of the Survey Area with an artificial reservoir and the existing RDU PE-3 parking lot atop a steep slope.**



**Figure 5.5. Typical shovel test profile with three main strata of sandy loam topsoil over layers of sandy clay loam.**



**Figure 5.6. An inundated shovel test excavated within the area of a map-identified historical resource.**

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## CHAPTER 6. CONCLUSIONS

SEARCH completed the fieldwork for this cultural resource reconnaissance survey in support of the RS&H, LLC, PE-3 Parking Lot expansion between February 6-10, 2023. The Survey Area is adjacent to the Raleigh-Durham International Airport (RDU) and William B. Umstead State Park in northwestern Wake County in central North Carolina. The Survey Area was assessed through a methodology combining background investigation with nonsystematic surface inspection and shovel testing.

The results from the survey of the Project area demonstrate the relatively intact nature of subsurface soils and a minimal degree of natural and anthropogenic disturbance. Soil profiles were moderately deep consisting of two to four primary strata comprised of sandy loam and sandy clay loam layers with varying textures and colors. Additionally, areas of low probability for archaeological evidence were identified, including areas disturbed from infrastructural development near the existing parking lot, including reservoirs near the southeast and southwest sides of the lot, as well as areas with wet conditions and poorly drained soils at the base of hills present throughout the Survey Area.

No archaeological deposits or cultural features were documented during the reconnaissance of the Survey Area, suggesting this locale was not a popular location for human activities in the distant past.

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