2.0 ENVIRONMENTAL SETTING

2.1 SITE LOCATION

The Jones Site (Site 7NC-J-204) was located in far southern New Castle County, the northernmost of the three counties in the State of Delaware (Figure 2-1). The site is approximately 2.75 miles southeast of the town of Blackbird, 2.5 miles north of the New Castle-Kent County, Delaware line,

Figure 2-1. Location of Jones Site in New Castle County, Delaware

2.2 PRESENT ENVIRONMENT

The Jones Site was situated in an open, relatively flat, fallow, agricultural field 100 m north of Clark Farm Road, and 150 m northwest of the new interchange for SR 1 and SR 13 (Figure 2-2). Clark Farm Road was renamed from Smyrna Landing Road in the mid-1990s when the road was severed by the SR 1 on-ramp (personal conversation with Terry Whitham, May 16, 2000). The Delaware State Police Firearms Training Facility was located 500 m to the west of the highway corridor across a shallow drainage ditch and treeline, and the Smyrna Veterinarian Clinic was situated to the northeast approximately 500 m. A tree-covered swamp bounded the site both to the north and to the south. A shallow north/south-oriented drainage ditch formed the defined eastern edge of the site, draining across the field to the northern swamp. A 10 m high large spoil pile, measuring 100 m north to south and 40 m east to west, was present along the SR 1 centerline, placed on the southeastern portion of the site prior to the 1992 UDCAR survey (personal conversation with Dawn Corbett, February, 23, 2000; UDCAR 1992).

The Jones Site was located in the Upper (northern) Coastal Plain of Delaware, which can be divided into three zones: the Bay Coast, the Mid-Drainage and the Drainage Divide (Custer 1989). The Jones Site was located along the interface between the Mid-Drainage and Drainage Divide zones. This part of the Delaware Coastal Plain is underlain by the Columbia Formation consisting of unconsolidated and heavily reworked sands and gravels of Pleistocene age (Groot and Jordan 1999).

The site was situated within the Duck Creek/Smyrna River watershed district, the only archaeological site from the Parsons data recovery phases that was not located in the Blackbird Creek watershed (Figure 2-3). The northern end of the site drained to the northeast through channelized ditches into Sawmill Branch, which arcs to the northeast, then to the southeast into Duck Creek near the Delaware River, where the drainage becomes the Smyrna River. The southern portion of the site drains to the south into Green Spring Run, a tributary of Duck Creek entering the latter just above (west) of Smyrna.

Figure 2-3. The Jones Site on a Topographic Map of the Blackbird to Smyrna Area in 1931 (USGS)

The topography of these respective watersheds differs rather remarkably for a coastal plain setting. Broad, level upland terraces characterize the Sawmill Branch headwater reaches located

to the east of the site. These upland areas are poorly drained and, at present day, remain largely wooded. A large number of bay/basins are present west of the site area. These landform features are particularly numerous in the area of Blackbird State Forest, 1.75 miles northwest of the site. Also defining the landscape are narrow, entrenched and broad swampy stream bottoms. Other locations are characterized by sharply undulating terrace remnants, interspersed between broad, poorly drained and well-drained upland terraces.

This portion of the Delaware Coastal Plain is pockmarked with bay/basin features. Many of these large surface depressions are clearly recognizable on the United States Geological Survey (USGS) quadrangle map, and at present day, many retain surface water. Others are dry while some appear to only seasonally hold water. Surface drainage around some of the larger bay/basins has been altered to claim the land for agricultural use. A shallow low spot was located to the east of the Jones Site, and could be the remnants of a bay/basin, or an undeveloped basin (Figure 2-4). The basin did not naturally drain and a ditch had to be excavated by the landowner to drain the depression to the swamp on the north side of the site. Gleyed soils were encountered at the western edge of the depression during the removal of the Ap horizon in the Phase III investigations, further suggesting the feature was a small bay/basin.

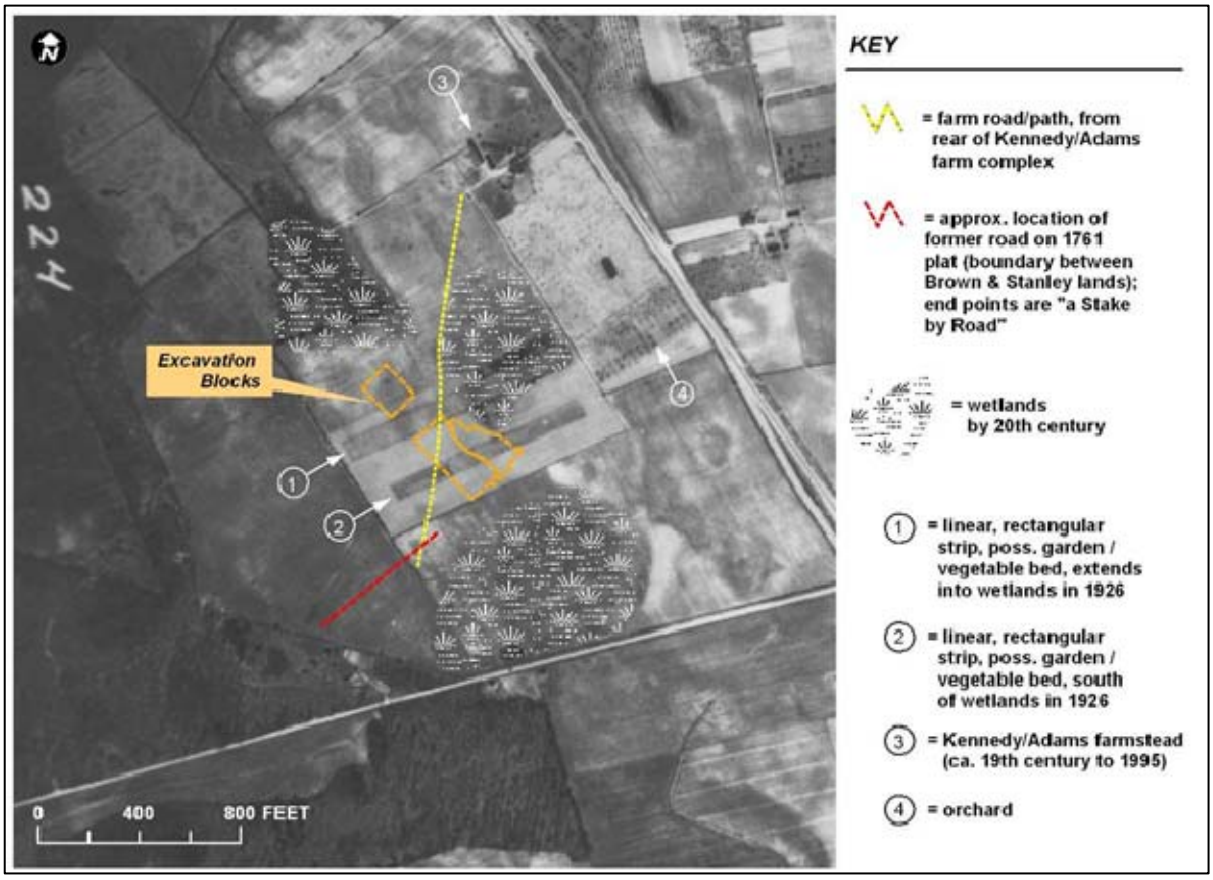

Figure 2-4. Wetlands and Farm Layout on a 1926 Aerial Photo (US Army Air Corps).

New Castle County has a humid, temperate climate typical of Mid-Atlantic coastal areas (Matthews and Lavoie 1970:77). The site is in the southern part of the county; this portion of the county typically receives less rainfall than the rest of New Castle County. The county averages 41.58 inches of precipitation annually and has an average temperature of 55.1 degrees (Southeast Regional Climate Center 2011).

The site was located on soils identified as belonging to the Sassafras-Fallsington Association, which are composed of nearly level to gently sloping, well-drained and poorly drained, moderately coarse textured and medium-textured soils on the uplands (Figure 2-5; Matthews and Lavoie 1970, Map Sheet 54). The northern portion of the site contained a natural low spot where a Woodstown loam (WsA) with zero to two percent slopes and little erosion was observed. Visible around the Woodstown loam was Sassafras sandy loam (SaB2) with moderately eroded two to five percent slopes. The southern end of the site consisted of a nearly level Fallsington loam (Fs), which extended to the south into the swamp. Just to the east of the site was a Fallsington sandy loam (Fa). Both of the Fallsington soils were very level and drained by a series of ditches and terra cotta tile fields probably installed by the Works Project Administration (WPA) in the 1930s (personal conversation with Charles Adams Junior, February 14, 2000).

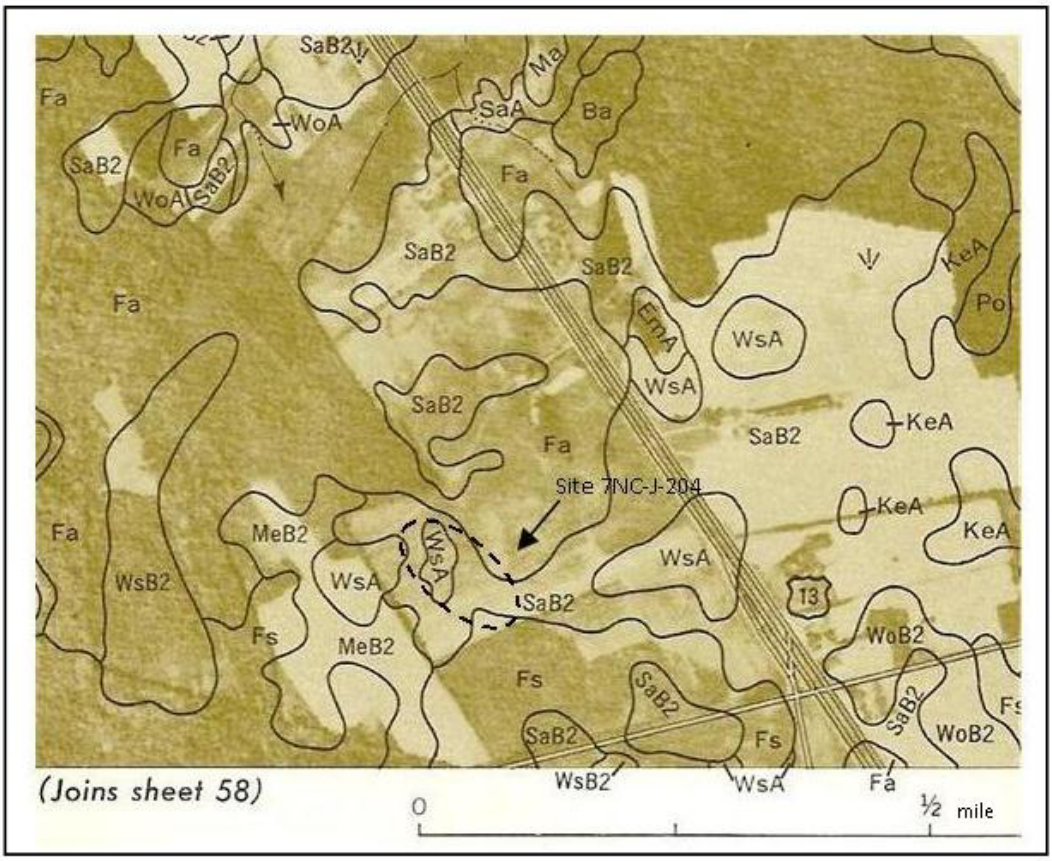

Figure 2-5. Soils in the Vicinity of the Jones Site, 1962 Aerial Photo (Matthews and Lavoie 1970)

Ground surface visibility at the time of the Phase II field investigations was fair to poor (less than 20 % visibility), due to grasses and other vegetation, as the farmer was not cultivating the acreage slated for construction. The field was still grown over with tall secondary growth, mainly grasses, at the onset of the Phase III investigations. The nearby trees covering the swamps were all secondary forests, containing few trees more than one foot in diameter.