

3.0 ARCHAEOLOGICAL RESOURCES PREDICTED FOR THE PROJECT APE

3.1 Pre-contact

The following is a summary of previously identified pre-contact period archaeological sites in the general vicinity of the School Bell Road Improvements project archaeological APE, and a discussion of the potential for the project APE to contain pre-contact period archaeological sites.

The Paleoindian period started with the arrival of the earliest inhabitants of Delaware, ca. 15,000 years ago, and ended with the emergence of essentially modern environmental conditions at approximately 6,500 years ago. Paleoindian archaeological remains in Delaware include fluted projectile points attributable to the Clovis, Mid-Paleo, and Dalton-Hardaway phases, as well as early side and corner notched projectile points such as Palmer, Amos, and Kirk types (Broyles 1971; Coe 1964; Custer 1986:32). Types of Paleoindian sites include quarries, quarry reduction stations, base camps, base camp maintenance stations, outlying hunting sites, and isolated projectile point finds, with isolated projectile points the most common site type (Custer 1984:52-53). The majority of the Paleoindian site types as defined by Gardner (1979) are directly related to lithic resource procurement and lithic tool manufacturing. "Three major concentrations of Paleo-Indian sites are noted for the northern portion of the Delmarva Peninsula" (Custer 1984:56). The School Bell Road Improvements project archaeological APE is not located within any of these three Paleoindian site concentrations, and primary sources of high-quality lithic raw materials are not present within the archaeological APE. However, secondary lithic resources would be proximal to the archaeological APE; therefore, the likelihood of Paleoindian period remains being present in the archaeological APE is moderate. No Paleoindian archaeological remains have been previously identified within or adjacent to the School Bell Road Improvements project archaeological APE.

"The beginning of the Archaic period coincides with the emergence of Holocene environments in Delaware and is characterized by a shift in human adaptation strategies" (Custer 1984:61). This adaptation strategy shift occurs at approximately 6,500 years ago with the emergence of bifurcate projectile points such as St. Albans, LeCroy, and Kanawha types (Broyles 1971; Chapman 1975). Based on preliminary information gleaned from excavated archaeological sites in locations surrounding Delaware, a variety of stemmed projectile point types characterize the Archaic period from approximately 6,000 B.C. to 4,000 B.C. (Custer

1984:62). Indicators of the new adaptations include the addition of new tools, such as groundstone, to the tool kit; the addition of alternative lithic raw material sources (e.g., secondary cobble sources) for tool making; replacement of direct procurement systems by embedded systems; reduction in the range of activities carried out at special purpose site; less reliance on cryptocrystalline lithic raw materials; increased floral resource use; reduced emphasis on hunting; and site location preference to a wider variety of environmental settings different from Paleoindian preferences. "In the overall picture the variety of site types and activities seems to represent a diffuse adaptation (Cleland 1976) to an increasing variety of environmental settings as well as the increasing variety of resources available due to increased seasonality" (Custer 1986:65). This seasonality is reflected in the macro/micro-band/procurement site settlement types postulated for the Archaic period in Delaware. A variety of environmental settings, including swamps/marshes and their associated terraces, and floodplains of major streams would have been preferred locations for macro-band camps. The School Bell Road Improvements project archaeological APE does not contain these types of environmental settings; however, the Churchman's Marsh and the Christiana River areas north of the School Bell Road Improvements project archaeological APE have yielded Archaic period sites. By 3,000 B.C., in Delaware, significant changes occurred in lifeways, climate, and environment, and signaled the end of the Archaic period. The potential for the School Bell Road Improvements project archaeological APE to contain Archaic period archaeological remains is moderate based on the presence of previously recorded Archaic period archaeological sites nearby, and the small size of the archaeological APE. If Archaic period remains are identified, they will most likely not be stratified or intact due to the heavy historic use, especially for agriculture, of the areas peripheral to the existing roadway which comprise the archaeological APE.

The Woodland I period begins approximately 3,000 B.C. when the rate of sea level rise slowed and riverine and estuary environments began to stabilize (Emery and Edwards 1966:733). An increase in population is posited for the period, along with the development of sedentism. Many large base camp sites, with associated large numbers of people, are evident in many parts of the Delmarva peninsula during the Woodland I period (Custer and Gatts 1991:19). The overall trend was towards more sedentism with increases in local populations. Woodland I period lifeways varied from the Archaic period and included increases in plant processing tools; the introduction of stone and then ceramic containers; the development of incipient ranked societies; the addition of fishing gear such as netsinkers; increases in broad-

bladed knives; and the development of trade and exchange networks/systems. Settlement during this period commonly consisted of repeated use campsites and semi-sedentary to sedentary village sites along major drainages (Morin *et al.* 2001:3.3). The close of the Woodland I period is dated to approximately A.D. 1000. Due to the lack of major drainages within the School Bell Road Improvements project archaeological APE, there is a low probability of identifying Woodland I period macro-band sites; however, due to the proximity of large streams to the archaeological APE, associated Woodland I micro-band sites may be present.

The Woodland II period is dated from A.D. 1000 to the contact period, *ca.* A.D. 1600. The period is marked by the alteration of Woodland I lifeways (Custer 1984:146) "The basic changes noted in Delaware include the breakdown of trade and exchange networks, alterations of settlement patterns, the development of sedentary lifestyles, and the appearance of agricultural food production to varying degrees in different areas" (Custer 1984:146). Horticulture became very important across the Middle Atlantic region during the Woodland II period, although little archaeological evidence for it has been identified in Delaware (Morin *et al.* 2001:3.3). "Exploitation of sites with Woodland I components continued during Woodland II" (Brown *et al.* 1990:9). Small triangular projectile points and various styles of ceramics are temporally diagnostic Woodland II period artifacts. Two basic varieties of ceramics, Townsend and Minguannan wares, are distinguished in Delaware (Custer 1984:148). Townsend ceramics are described as shell tempered, fabric impressed exterior surface wares (Griffith 1982), while Minguannan wares exhibit sand, grit, or quartz temper with smoothed, corded, or smoothed-over corded surfaces (Custer 1981). Other items of material culture include bone and antler tools, stone celts, clay pipes, and shell beads (Brown and Basalik 1984). "No major changes are seen in social organization for the Woodland II Period of northern Delaware;" therefore, if Woodland II sites are identified in the School Bell Road Improvements project archaeological APE, they will most likely be micro-band sites associated with macro-band sites located to the north along the Christiana River or Churchman's Marsh.

According to the predictive modeling accomplished by Custer (n.d.) for pre-contact period archaeological resources in Delaware, the archaeological APE is contained within low probability areas (Custer *et al.* 1984). This is mostly due to the upland topographic setting of and lack of streams and/or marshes in the School Bell Road Improvements project archaeological APE. More specifically, Custer (1986:195) indicates that the research significance for the archaeological APE is moderate and that the project APE "includes areas with medium to high significant site probabilities and medium numbers of sites and data quality."

Background research revealed numerous previously completed cultural resources surveys in the immediate vicinity of the School Bell Road Improvements project archaeological APE (Catts *et al.* 1988:54). The northern portion of School Bell Road, between S.R. 1 and S.R. 7, was surveyed as part of the Route 7 South Corridor by the University of Delaware Center for Archaeological Research and the DeIDOT in 1981-1982 and 1985-1986 (Catts *et al.* 1988). This survey identified seven pre-contact period archaeological sites (7NC-E-9, 7NC-E-16, 7NC-E-32, 7NC-E-50, 7NC-E-52, 7NC-E-54, and 7NC-E-81) ranging in age from the Archaic to the Woodland II periods, and five historic period sites (Union African Methodist Church and Cemetery, three sites in the Patterson Lane site complex, and the Nowakowski site) ranging in age from the mid-eighteenth through twentieth centuries (Catts *et al.* 1988:i). "Prehistoric site location data indicate a very ephemeral utilization of upland interior areas in the southern portion" of the Route 7 project area located closest to the current School Bell Road Improvements project archaeological APE (Catts *et al.* 1988:i).

Review of the Delaware archaeological site files did not yield any previously recorded pre-contact period archaeological sites within the archaeological APE; however, several previously recorded archaeological sites are located near the archaeological APE. A summary of these sites is included in Table 1. All information contained in Table 1 is taken from the Cultural Resource Survey (CRS) forms.

Table 1.
Previously Recorded Pre-contact Period Archaeological Sites Located
Within 0.8 Km (0.5 Mi) of the School Bell Road Improvements Project Archaeological APE

Site	Location	Description
7NC-E-32	ca. 182.9 m (600.0 ft) south of farm lane south of S.R. 273 and 243.8 m (800.0 ft) east of S.R. 7 northeast of woods.	22 non-diagnostic quartz chunks whose status as artifacts is dubious.
7NC-E-44	ca. 213.4 m (700.0 ft) southwest of the intersection of S.R. 7 and S.R. 273.	large knoll overlooking the Christiana River; badly disturbed open site; surface collection and excavation; large camp of unknown cultural or temporal affiliation; heat altered rock; projectile points, bifaces, and a ceramic.
7NC-E-50	ca. 15.2 m (50.0 ft) south of School Bell Road and 304.8 m (1,000.0 ft) east of the intersection of S.R. 7 and School Bell Road.	slope of a knoll; cultivated field; surface collection and excavations; thin lithic scatter of mainly quartz debitage; bifaces; historic artifacts, as well.

Additionally, numerous pre-contact period archaeological sites are located within 2.4 km (1.5 mi) of the School Bell Road Improvements project archaeological APE. A summary of these sites is included in Table 2.

Table 2.
Previously Recorded Pre-contact Period Archaeological Sites Located Within 2.4 Km (1.5 Mi) of the School Bell Road Improvements Project APE

Site	Distance and Direction from Archaeological APE*	Description**
7NC-E-9	ca. 1.1 km (0.7 mi) north-northwest.	surface collection; Wolfe Neck and Hell Island ceramics; Woodland I.
7NC-E-25	ca. 1.0 km (0.6 mi) east.	surface collection; heat altered rock; lithic flakes and quartz chunks.
7NC-E-27	ca. 1.1 km (0.7 mi) northwest.	surface collection; bifurcate and narrow blade/contracting stem projectile points, bifaces, and flakes; Piedmont Archaic.
7NC-E-47	ca. 1.9 km (1.2 mi) southwest.	fallow field; surface collection; 3 loci projectile point, quartz blade fragment, core fragment, and flake; Late Archaic/Woodland I.
7NC-E-48	ca. 1.3 km (0.8 mi) southeast.	agricultural fields; surface collection; debitage, quartz chunks, biface fragment, corner-notched projectile point fragment, anvil stone; Middle Archaic.
7NC-E-122	ca. 2.3 km (1.4 mi) southwest.	terrace overlooking the Christiana River; excavations; lithic procurement; Rossville projectile point, flakes, core, biface, and Wolfe Neck ceramics; Woodland I.
7NC-E-123	ca. 2.3 km (1.4 mi) southwest.	terrace overlooking the Christiana River; excavations; lithic procurement; flakes.
7NC-E-125	ca. 1.5 km (0.9 mi) west-northwest.	wooded finger of terrace overlooking Christiana River; shovel test pits; pre-contact and historic contexts; fire cracked rock and flakes.
7NC-E-182	ca. 1.6 km (1.0 mi) west.	wooded finger of terrace overlooking Christiana River; shovel test pits; pre-contact and historic contexts; fire cracked rock and flakes.

*Interpolated from CRS forms and SHPO mapped locations.

**Information taken from CRS forms.

Based on the presence of numerous previously recorded pre-contact period archaeological sites nearby the archaeological APE; the information contained in the statewide contexts, including a categorization of the area as having good site potential in concert with a need for research; and the presence of soils of appropriate age to contain pre-contact period archaeological remains, the School Bell Road Improvements project archaeological APE is considered to have a moderate potential to contain pre-contact period archaeological remains. Based on the archaeological APE's topographic setting, if pre-contact period archaeological remains are identified, they will most likely represent ephemeral transitory use (procurement sites according to Custer 1986) of this upland area as part of a more general settlement pattern which included larger more permanent base camps along the lower Christiana River and in the vicinity of Churchman's Marsh (Catts *et al.* 1988:196). For additional pre-contact period context of the project area, the reader is referred to *A Management Plan for Delaware's Prehistoric Cultural Resources* (Custer 1986), *Delaware Prehistoric Archaeology, An Ecological Approach* (Custer 1984), and *Chesapeake Prehistory* (Dent 1995).

3.2 Historic

The following is a summary of previously identified historic period archaeological sites in the general vicinity of the School Bell Road Improvements project archaeological APE and a discussion of the potential for the archaeological APE to contain historic period archaeological sites. For an extensive description of Delaware's Euro-American history, especially agriculture, the reader is referred to *The Archaeology of Agriculture and Rural Life, New Castle and Kent Counties, Delaware, 1830-1940* (De Cunzo and Garcia 1992), and the *Management Plan for Delaware's Historical Archaeological Resources* (De Cunzo and Catts 1990) and "Neither a Desert Nor a Paradise:" *Historic Context for the Archaeology of Agriculture and Rural Life, Sussex County, Delaware, 1770-1940* (De Cunzo and Garcia 1993). Several historic period archaeological sites are recorded near the School Bell Road Improvements project archaeological APE. They are summarized in Table 3.

**Table 3.
Previously Recorded Historic Period Archaeological Sites Located Within
2.4 Km (1.5 Mi) of the School Bell Road Improvements Project Archaeological APE**

Site	Distance and Direction from Archaeological APE*	Description**
Union African Methodist Church and Cemetery	ca. 0.3 km (0.2 mi) northwest.	Negro Religious Context; last half of the nineteenth century; demarcated cemetery with some gravestones.
Allen site (7NC-E-78)	ca. 1.1 km (0.7 mi) north-northwest.	Mid-nineteenth century domestic residence, which probably belonged to George Allen who engaged in local commercial and industrial activities.
7NC-D-191	ca. 1.0 km (0.6 mi) southwest.	Early eighteenth to twentieth century iron mine.
Partridge House Cemetery site (7NC-E-149)	ca. 1.0 km (0.6 mi) southwest.	House site with cemetery.
Nowakowski site	ca. 0.3 km (0.2 mi) northwest.	Mid- to late eighteenth century historic artifact scatter.

*Interpolated from CRS forms and SHPO mapped locations.

**Information taken from CRS forms.

Historic period mapping of the School Bell Road Improvements project archaeological APE indicates that the area has remained rural throughout the historic period, but has been subject to intense continued development since ca. 1946 when the Fair Winds housing development began. On an 1850 (Rea and Price 1850) map of the archaeological APE, only one structure is shown adjacent to School Bell Road within the limits of the current project (Figure 3). School House Number 49 is located on the western corner of the intersection of School Bell Road and the Frenchtown Turnpike (S.R. 40). The location of the schoolhouse is currently occupied by a restaurant building and paved parking lot. A second structure, the African Church, is shown along the south side of School Bell Road northwest and outside of the existing archaeological APE (Rea and Price 1850). The Beers (1868) map shows these same two structures, but the Union African Methodist Church is now placed on the north side of School Bell Road (but still outside of the current project APE) (Figure 4). In addition, two residences (E.T. Holcomb's Silver Hill and G. Morrison) are shown near School Bell Road, but not immediately adjacent to it. The locations of these two residences appear to fall outside

of the current archaeological APE for impacts. A third residence (L. Reynolds) is located above the north side of School Bell Road at the intersection of School Bell Road and U.S. 40 and within the archaeological APE. Baist's 1893 map of New Castle County indicates several different landowners for the archaeological APE, including George Whitfield, A. Lofland, Moody, and McAlister (Figure 5). Baist (1893) also shows the Union African Methodist Church and School House Number 49 in their same locations as the 1868 map.

The 1904 Wilmington, Delaware and 1940 New Castle County, Delaware topographic quadrangles show structures on both corners of the intersection of School Bell Road and S.R. 40 (USGS 1904, 1940), but the building in the location of the former school house is no longer designated as a school. In addition, the 1904 and 1940 maps do not show the African Church; therefore, sometime between 1893 and 1904 it appears that the African Church building was razed or destroyed, and the school house went into disuse for educational purposes (Figures 6 and 7). Although none of the existing historic maps indicate a cemetery associated with the African Church, one is currently located near the site where the church building is depicted in the historic maps. This cemetery is located approximately 0.3 km (0.2 mi) northwest and totally outside of the School Bell Road Improvements project archaeological APE, as it is currently configured. By 1953, the Newark East, Delaware USGS topographic quadrangle shows the Fair Winds housing development along the southeast end of School Bell Road within the archaeological APE, as well as two roads intersecting School Bell Road with attendant buildings further to the northwest. This map (USGS 1953) shows the beginnings of the suburbanization and modern development of the archaeological APE (Figure 8).

Catts *et al.* (1988) and De Cunzo and Catts (1990) present an in-depth discussion of the history of the project area, as well as the statewide historic contexts within which identified historic period resources may be evaluated. De Cunzo and Catts (1990:28, 172) place the School Bell Road Improvements project archaeological APE within the Ft. Casimir/New Amstel/New Castle areas of seventeenth and early eighteenth century exploration and frontier settlement (1630-1730±). The archaeological APE is also squarely located in the New Castle/Christiana Bridge/Cantwell's Bridge triangle of overland transportation networks, and the New Castle urbanization/suburbanization (1880-1940±) area (De Cunzo and Catts 1990:173,176). The School Bell Road Improvements project archaeological APE is also threatened by modern development by virtue of its location adjacent to the S.R. 40 corridor. Based on the information contained in historic mapping, Catts *et al.* (1988), and De Cunzo and Catts (1990), it appears that the area surrounding the School Bell Road Improvements project

archaeological APE has a moderate potential to contain historic period archaeological resources dating from the early seventeenth century to the recent past.

Skelly and Loy personnel recently conducted a historic architectural survey of the School Bell Road Improvements project area (Hyland and Kuncio 2004). One previously identified and five newly identified above-ground resources built prior to 1954 are located within the project area (adjacent to the archaeological APE). None of the structures associated with the six 50 year old or older resources is located within the archaeological APE. However, the property boundaries of five of them do cross into the archaeological APE, indicating a slight potential for historic period archaeological resources to be present. Deep historic cultural features such as wells or privies would not be expected in the archaeological APE based on the locations (well off of School Bell Road), orientation (front yards or agricultural fields), and age (Fair Winds would have been developed after centralized water and sewer systems were in use) of the historic structures. Therefore, the six 50 year old or older properties identified during the historic architectural survey do not contribute significantly to the potential for historic period remains to be present in the archaeological APE.

Due to the long-term rural nature of the archaeological APE, and based on the numbers of different types of previously identified historic archaeological sites located within New Castle County, if historic period archaeological sites are identified in the archaeological APE they will likely be related to rural agricultural and/or domestic activities, including family burial, potentially with African American associations, early one-room school house education, or early suburbanization. However, given the constricted size and positioning of the archaeological APE, as well as the expected ephemeral or non-existent archaeological signatures that most of the likely historic contexts yield, it is likely that generalized historic artifact scatters or isolates will be the norm recovered during the Phase I survey. Generalized/fragmentary temporally and functionally non-diagnostic historic period artifacts do not permit specific contextual associations such as those mentioned above, nor do the interpretations of them contribute significant information to the specific land-use history of the archaeological APE.

Table 4 is a modified version of the table previously provided in the Phase I Survey Work Plan (Gundy *et al.* 2003). The table was produced as a graphic representation which summarizes and integrates the results of the archaeological background research and the geomorphological reconnaissance for the archaeological APE with predictions regarding the testability of and expected resources in all portions of the archaeological APE. Table 4 was

Table 4.
School Bell Road Improvements Project Phase I Archaeology Survey Strategy

Archaeological APE Segment	Testing Methodology*	Expected Resources	Justification
A Stations 14+00 to 25+50	no testing	none	scalped and graded areas, paved driveways, previously excavated biofiltration swale, adjacent to existing shoulder disturbance.
Test Area 1 Stations 25+50 to 30+25	19 STPs at 15.0 m and 5.0 m intervals and one 1.0 x 1.0 m test unit	pre-contact - isolates; small artifact scatters; temporary, single to multiple use sites historic - rural domestic artifact scatters	<i>in situ</i> soils of appropriate age; upland topographic setting; well drained soils (Matapeake silt loam); minor disturbance from existing roadway; minor erosion of Matapeake soils. no historic documentation of structures; rural land-use throughout historic period.
B Stations 30+25 to 46+00	no testing	none	paved driveways; extensive housing development with associated fencing, landscaping, and paving; excavated water retention area; ditches and subsurface road drainage structures; buried utilities; adjacent to existing roadway shoulder disturbance.
Test Area 5 Stations 46+00 to 51+50	7 STPs at 15.0 m intervals	pre-contact - isolates; small artifact scatters; temporary, single to multiple use sites historic - rural domestic artifact scatters	<i>in situ</i> soils of appropriate age; upland topographic setting; well drained soils (Matapeake silt loam); minor disturbance from grading; minor erosion of Matapeake soils; short grassy area. no historic documentation of structures; rural land-use throughout historic period.
C Stations 51+50 to 55+00	no testing	none	paved driveways; disturbances by landscaping; adjacent to existing roadway shoulder disturbance.
Test Area 3 Stations 55+00 to 67+75	23 STPs at 15.0 m intervals	pre-contact - isolates; small artifact scatters; temporary, single to multiple use sites historic - rural domestic artifact scatters	<i>in situ</i> soils of appropriate age; old agricultural field with potential localized modern disturbances; moderately well-drained soils (Mattapex silt loam). no historic documentation of structures; rural land-use throughout historic period.
Test Area 4 Stormwater Management Area Stations 67+75 to 75+00	76 STPs at 15.0 m intervals	pre-contact - isolates; small artifact scatters; temporary, single to multiple use sites historic - rural domestic artifact scatters	<i>in situ</i> soils of appropriate age; agricultural field with potential localized modern disturbances; moderately well-drained soils (Mattapex and Matapeake silt loams). no historic documentation of structures; rural land-use throughout historic period.

Table 4.
School Bell Road Improvements Project Phase I Archaeology Survey Strategy
(Continued)

Archaeological APE Segment	Testing Methodology*	Expected Resources	Justification
Test Area 6 Stations 75+00 to 108+50	19 STPs at 15.0 m and 5.0 m intervals and one 1.0 x 1.0 m test unit	pre-contact - isolates; small artifact scatters; temporary, single to multiple use sites historic - rural domestic artifact scatters	<i>in situ</i> soils of appropriate age; agricultural field with potential localized modern disturbances; moderately well drained soils (Mattapeke and Mattapeake silt loams). no historic documentation of structures; rural land-use throughout historic period.
G Station 108+50 to Appleby Road	no testing	none	extensively disturbed from emplacement of a culvert under U.S. 40; wet area with standing water; grading and movement of sediments within this portion of project APE; adjacent to existing roadway shoulder disturbance.
D Stations 17+64 to 33+00	no testing	none	paved driveways and roadway; housing with associated fencing, landscaping, and paving; scalped and graded areas; excavated water retention ditches; adjacent to existing roadway shoulder disturbance.
E Stations 31+80 to 48+00	no testing	none	paved roadway; extensive housing development with associated fencing, landscaping, and paving; excavated water retention ditches; adjacent to existing roadway shoulder disturbance.
Test Area 2 Stations 48+00 to 52+80	17 STPs at 15.0 m intervals	pre-contact - isolates; small artifact scatters; temporary, single to multiple use sites historic - rural domestic artifact scatters	<i>in situ</i> soils of appropriate age; agricultural fields with minor plow disturbance; moderately well drained soils (Matapeake silt loam); minor disturbance from existing roadway. no historic documentation of structures; rural land-use throughout historic period.
F Station 52+80 to U.S. 40	no testing	none	paved driveways and roadways; commercial establishments and housing with associated fencing, landscaping, and paving; scalped and graded areas; excavated water retention ditches; utilities; adjacent to existing roadway shoulder disturbance.

modified to its current form and used during the Phase I survey to limit testing to those areas that had potential to contain pre-contact and/or historic period archaeological resources.