3.0 ARCHAEOLOGICAL INVESTIGATIONS

3.1 FIELD METHODOLOGY

Archaeologists employed three survey methods during the archaeological survey for the proposed Milton Bypass corridor: 1) Pedestrian survey, in plowed areas where surface visibility was good; 2) Shovel Test Pit (STPs) excavation, in areas with restricted surface visibility; and 3) Test Unit excavation, in selected areas that yielded cultural materials during the shovel testing. No excavation occurred outside the LOC.

3.1.1 Pedestrian Survey

Parsons visually surveyed those portions of the project area located in agricultural fields, as well as those that possessed low probability for archaeological resources but good visibility. Pedestrian survey extended beyond the LOC only to visually investigate surface extent of artifacts noted within the LOC. Artifact samples were retained.

3.1.2 Shovel Testing

Shovel tests measured approximately 40-50 centimeters (cm) in diameter. Archaeologists excavated stratigraphically, terminating 10 cm into sterile subsoil and screened the soils through ¼ inch hardware mesh. Artifacts recovered were bagged according to their horizontal and vertical proveniences. Results for each test were recorded on standardized forms, including the location of the STP relative to the established grid and/or permanent landscape elements, soil depths, colors, and textures. Use of the Munsell® Soil Color Charts standardized soil color measurements. Despite regional drought conditions, heavy rainfall immediately prior to fieldwork was adequate for measuring soil color without wetting. In order to discern disturbance patterns, field personnel noted natural and artificial surface features in the vicinity of the test. Cultural materials recovered from each STP were retained unless modern, in which case, only notes were taken.

Parsons shovel tested eight areas within the LOC (Figure 6). Archaeological probability determined STPs intervals that ranged from 5 meters in the high potential areas to fifteen meters in the areas of medium archaeological potential. Alphabetic designations A through H distinguished individual survey areas (Figure 6). A total of 76 STPs were excavated.

3.1.3 Test Units

The field crew hand-excavated four test units, each measuring one meter square in selected areas of the proposed corridor. These excavation units increased the artifact sample from the upper horizon in order to assign better temporal affiliation to resources identified during STP excavation and to test for subsurface archaeological features. Test unit excavation also revealed stratigraphic sequences not visible within the confines of an STP.

Test unit excavation followed natural stratigraphy. The upper plow zone horizon constituted a single stratigraphic unit; ten centimeter arbitrary levels, excavated within natural strata, provided

vertical control within horizons encountered below the plow zone. Excavation terminated not less than two arbitrary levels, or 20 cm, below cultural deposits. All soils removed from the test units were screened through ¼ inch hardware mesh. Unit artifact bags contained appropriate horizontal and vertical provenience infomration. Excavators recorded locational, stratigraphic, and artifact data on a standardized form.

3.2 ARTIFACT PROCESSING

The field supervisor delivered Phase I artifacts to the Parsons archaeological laboratory in Fairfax, Virginia for processing. Lab staff washed artifacts and classified them by general category (prehistoric or historical), followed by specific type (debitage, nails, brick, glass, etc.), and prepared a tally of artifacts by horizontal distribution. Since the chronology of occupation for an historical site considers far shorter periods of time than that of a prehistoric site, historical temporal indicators receive one more level of classification. For example, wrought/machine nails are separated from later wire nails; historical ceramics are divided into three groups by popularity dates: 1770-1830, 1830-1880, and post-1880; and automatic machine-made glass, post-dating 1880,was culled from all other glass. A full artifact catalog will be included with the comprehensive technical report. At the conclusion of the project, all artifacts and field records will be transferred to the Delaware State Museum for curation.

3.3 RESULTS

The Phase I archaeological investigation consisted of the excavation of 76 shovel tests and four test units resulting in the recovery of 2,271 historical artifacts (Tables 1 and 2). Test Unit excavation results included identification of two historical features, which represent the only subsurface features located during this investigation. Thirty-nine STPs yielded historical artifacts. One prehistoric artifact, a dark gray chert flake, was recovered from the upper horizon of a test unit. With the exception of limited materials from the two features in one test unit, all of the artifacts from the STPs and the test units came from the topsoil (A horizon) or from the A/B interface. The survey resulted in the identification of four historical archaeological sites; CRS forms are located in Appendix A.

Table 1. Artifact Assemblages from Sites and Non-Site Areas

Survey Area	Site	Non-Site	Total
Area A	283	0	283
Area B	1452	0	1452
Area C	0	141	141
Area D-North	0	23	22
Area D-South	77	15	92
Area E	0	0	0
Area F	0	0	0
Area G	0	172	172
Area H-North	0	3	3
Area H-South	106	0	106
Total	**1918**	**354**	**2272**

Table 2. Artifacts Recovered from Non-Site Areas

		Area C	Area D-North	Area D-South	Area E	Area F	Area G	Area H-North	TOTAL
Domestic									
	Porcelain		1						1
	Whiteware/Ironstone	10	1						11
	Pealware		1						1
	Creamware		1						1
	Flower Pot		2						2
	Redware	1	3	2					6
	Stoneware	5							5
	Glass Vessel Fragments	2	4	1					7
	Machine Made Glass	2							2
	Unidentified Bottle Glass	16	2	1					19
Personal									
	Button			1					
Architectural									
	Cut Nails	2	2						4
	Unidentified Nails			1					1
	Window Glass	6		1				1	8
	Brick/Mortar	11	3	6			172		192
Miscellaneous									
	Bone	2	2						4
	Oyster Shell			1					1
	Clam Shell	2						1	3
	Jews Harp	1							1
	Clinker/Coal							1	1
	Key	1							1
	Misc. Metal	79	1						80
	Audio Record Fragment	1							1
	Agricultural Lime			1					1
	TOTAL	**141**	**23**	**15**	**0**	**0**	**172**	**3**	**354**

3.3.1 Survey Area A

Area A was located on the western side of SR5, north of the SR5/SR319 intersection (Figure 7). Six STPs and one test unit were excavated in this area. Sequential numbering of STPs started at southernmost test. SR5 bounds Area A to the east by, the decline toward SR319 bounds Area A to the south, and the LOC bounds Area A to the north and west. STPs were excavated at an interval of ten meters due to the potential for locating the remains of historical structures in the vicinity. Stratigraphy and artifact distribution, noted during shovel testing determined test unit placement between the two northernmost STPs.

The Plum Site (x-xxxx). The Plum Site was identified in the northernmost four shovel tests. The presence of historical artifacts led to the excavation of Test Unit A-1 between STP5 and STP6. The purpose of the test unit was to collect additional artifact information through vertically controlled excavation, to examine the soil context from which the materials derived, and to expose any cultural features present. Plow scars constituted the only subsurface cultural features observed in the test unit. Stratigraphy within the test unit consisted of a 27.5 cm deep, brown (10 YR 4/4) loamy sand plow zone overlying a light yellowish brown (10 YR 6/4) loamy sand subsoil. The plow zone was excavated in three 10cm levels. The subsoil contained no artifacts. The parcel immediately west of the LOC appears to have been graded, possibly for a structure. The landform suggests that the core of the site is outside the LOC. The artifacts recovered from the Plum Site came from a single mixed stratum, and included early ceramics (e.g., creamware and pearlware) and 20th century amber bottle glass (Table 3).

3.3.2 Survey Area B

Area B was located south of the SR5/SR319 intersection and west of SR 5 (Figure 7). The field crew excavated STPs at a 10 meter interval. Archival research indicated that historical buildings were once located in the vicinity, suggesting a high probability of locating historical resources. The tests were numbered sequentially 1 through 4, starting at the northernmost shovel test. A treeline bounds the area to the north, SR5 to the east, and the LOC to the south and west. Four STPs and two test units were excavated in this area. STP1 revealed a remnant driveway. The first stratum of this test represented sloped overburden. South of STP3, a drainage ditch disturbed all areas within the LOC. Placement of Test Units B-1 and B-2 occurred between these areas of disturbance.

The Driveway Site (x-xxx). The Driveway Site was identified in all four STPs (B-1, B-2, B-3, and B-4) excavated in Area B, in front of the Draper/Bonk House (CRS #S-3527). Two test units were excavated in the area of greatest artifact concentration and of least visible disturbance. Test Unit B-1 had two levels, with the Stratum A producing (latest artifacts) solarized glass, late whiteware and wire nails, and Stratum B producing whiteware, yellowware and wire nails (Table 4). Test Unit B-2 showed greater disturbance, with a single mixed stratum producing late whiteware, ironstone, and bottle (possibly beer) glass. Two features were recorded in Test Unit B-2, both identified as posts. Feature B-1-1 consisted of a large irregular stain below the plow zone. The post mold was indistinguishable from the surrounding posthole. A synthetic, possibly bakelite comb fragment was found in the feature. Feature B-1-2, immediately adjacent to the first, consisted of an 8 inch by 8 inch square stain. No associated hole was evident, and no diagnostic artifacts were recovered.

Table 3. Artifacts Recovered from the Plum Site

		Count	Percent Within Class	Percent of Total
Domestic				
	Bone Chine Porcelain	1	1.04	0.36
	Creamware	2	2.08	0.71
	Pearlware	7	7.29	2.50
	Whiteware/Ironstone	21	21.88	7.50
	Unidentified Refined Earthenware	3	3.13	1.07
	Yellowware	1	1.04	0.36
	Stoneware	2	2.08	0.71
	Redware	14	14.58	5.00
	Flower Pot	1	1.04	0.36
	Glass Vessel Fragments	4	4.17	1.43
	Mold Blown Glass	2	2.08	0.71
	Machine Made Glass	7	7.29	2.50
	Unidentified Bottle Glass	31	32.29	11.07
	Total Domestic	**96**	**98.96**	**34.29**
Architectural			.	
	Wire Nails	2	4.85	1.79
	Cut Nails	19	18.45	6.79
	Unidentified Nails	4	0.97	0.36
	Window Glass	10	9.71	3.57
	Barbed Wire	5	1.94	0.71
	Brick/Mortar	66	64.08	23.57
	Total Architectural	**103**	**100.00**	**36.79**
Miscellaneous				
	Bone	4	4.94	1.43
	Oyster Shell	10	12.35	3.57
	Clam Shell	4	4.94	1.43
	Unidentified Shell	5	6.17	1.79
	Clinker	4	4.94	1.43
	Tin Can Fragments	45	55.56	16.07
	Misc. Metal	9	11.11	3.21
	Total Miscellaneous	**81**	**100.00**	**28.93**
	TOTAL	**283**		**100%**

Table 4. Artifacts Recovered from the Driveway Site

		Count	Percent Within Class	Percent of Total
Domestic				
	Whiteware/Ironstone	108	45.57	7.44
	Unidentified Refined Earthenware	2	0.84	0.14
	Yellowware	7	2.95	0.48
	Redware	14	5.91	0.96
	Flower Pot	1	0.42	0.07
	Glass Vessel Fragments	25	10.55	1.72
	Mold Blown Glass	3	1.27	0.21
	Machine Made Glass	7	2.95	0.48
	Unidentified Bottle Glass	68	28.69	4.68
	Utensil	1	0.42	0.07
	Pos. Small Drawer Handle	1	0.42	0.07
	Total Domestic	**237**	**100.00**	**16.32**
Personal				
	Ball Clay Tobacco Pipe Fragments	13	61.90	0.90
	Thimble	1	4.76	0.07
	Clothing Hook	1	4.76	0.07
	Glass Bead	1	4.76	0.07
	Button	3	14.29	0.21
	Porcelain Dolls Head Fragment	1	4.76	0.07
	Fish Hook	1	4.76	0.07
	Total Domestic	**21**	**100.00**	**1.45**
Architectural			.	
	Wrought Nails	5	0.48	0.34
	Wire Nails	44	4.23	3.03
	Cut Nails	189	18.16	13.02
	Unidentified Nails	35	3.36	2.41
	Screw/nut	3	0.29	0.21
	Window Glass	79	7.59	5.44
	Slate	1	0.10	0.07
	Brick/Mortar	681	65.42	46.90
	Drainpipe	4	0.38	0.28
	Total Architectural	**1041**	**100.00**	**71.69**
Miscellaneous				
	Bone	16	10.46	1.10
	Oyster Shell	49	32.03	3.37
	Clam Shell	16	10.46	1.10
	Charcoal/Wood	6	3.92	0.41
	Ammunition Casing	1	0.65	0.07
	Clinker/Coal	3	1.96	0.21
	Lime	4	2.61	0.28
	Unidentified Glass	7	4.58	0.48
	Misc. Metal	49	32.03	3.37
	Plastic Comb	1	0.65	0.07
	Prehistoric Flake	1	0.65	0.07
	Total Miscellaneous	**153**	**100.00**	**10.54**
	TOTAL	**1452**		**100%**

The features were bisected, profiled and fully excavated. The location of the post features in close proximity to a driveway mound and along SR5 suggests they are road signs or mailbox posts. The parcel immediately west of the LOC, and a visible overgrown road trace, appears to have been graded, possibly for a structure.

3.3.3 Survey Area C

Historical records indicate three structures within this area. There is currently a slight northerly bend in SR319. Construction plans propose straightening this bend. The LOC south of the SR319/SR5 intersection, has the largest surface area of the surveyed portions of the corridor. Thus, more shovel tests were excavated within its boundaries than in any other segment. Eighteen STPs were excavated in Area C (Figure 7). SR 319 bounds Area C to the north, Diamond Pond to the west, and SR5 to the east. The LOC determined the southern survey limit.

A transect was established perpendicular to, and 15 meters south of, the existing SR319 roadway. A second transect was placed 10 meters south of the first transect. All shovel tests were excavated on a 10 meter interval. Because this area consisted of two transects, STPs were numbered according to a grid system. The westernmost STP on the transect closest to SR319 was designated STP N1000 E1000; all subsequent STPs were numbered relative to this test.

Two surface anomalies were recorded in the eastern portion of Area C (Figure 7). Both represented refuse dumps dating from the first quarter of the twentieth century, based upon the presence of machine-made pharmacy bottles (Table 2). Both surface deposits appear to be contemporaneous, possibly deposited by the same person or household. This is suggested by the presence of a chamber pot at one midden and a tea/coffee mug at the other. Both are ivory-tinted whiteware with overglaze decal decoration in a 'Rose' pattern. Ivory-tinted and overglaze decal-decoration appears in the last years of the nineteenth century, remained popular until the mid-twentieth century, and are still produced (Stelle 2001). Although historical maps show three structures in this area, shovel testing indicated that the area had been disturbed and no structural evidence was found. A local bottle collector confirmed that he had dug up the area thoroughly over the past twenty years (Fleming 2002). The scatters appear to be confined to the surface; no subsurface deposits were recorded in nearby shovel tests.

3.3.4 Survey Area D

Area D - North was located north of SR319 and directly across this route from Bangor Lane (Figure 8). A clamshell driveway bounds Area D - North to the east and an agricultural field, in mature corn at the time of the survey, to the west. Drought conditions stunted corn growth, allowing for good surface visibility along field edges. The sharply sloping road cut for SR319 defined the southern boundary and the LOC the northern boundary. Parsons excavated a total of 12 STPs, numbered sequentially west to east one through twelve, in Area D - North. The eastern half of these STPs were excavated at a 10 meter interval, the remainder at 15 meters. The eastern half was more intensively investigated due to its location on a rise above an active drainage and the potential for prehistoric archaeological resources. A non-extant saw mill, identified on historical maps, increased the potential for historical archaeological resources. Archaeologists recovered several artifacts from Area D - North including porcelain, whiteware, pearlware, redware, nails, brick, and shell (Table 2). A creamware sherd was surface-collected

immediately east of Area D - North, near the location of a mill identified on the 1868 Beers map, and is included in Tables 1 and 2. Artifact distribution across Area D - North was widely dispersed and low in quantitiy.

Area D - South was located south of SR319 and west of Bangor Lane. As with Area D-North, the South's proximity to water increased the potential for prehistoric resources. The area was defined by the boundaries of a small wooded stand that divides SR319 from cornfields to the south. The road cut defined the northern boundary and the LOC the southern. The single transect contained a total of 13 STPs placed at a 15 meter interval, numbered sequentially east to west. A slightly sunken disturbance, most likely the trace of a field road, was noted in the area to be tested. Accordingly, the transect was shifted five meters to the south to avoid disturbed soils. Archaeologists recovered several artifacts from Area D - South including redware, a button, nails, brick, agricultural lime, and shell (Table 2). Artifact distribution in Area D - South indicated no clustering and the artifact density was very light, suggesting field scatter.

The Shell Button Site (x-xxx). The Shell Button Site was located in an agricultural field immediately south of SR319, west of Survey Area D - South, and east of a dirt access road (Figure 9). No excavation occurred on this site; it was identified during pedestrian survey. After identification, the survey was expanded in an attempt to roughly define site boundaries. Distribution extended beyond the LOC and survey was terminated prior to identification of a southern boundary.

The site includes refuse from the production of shell buttons, an important regional 'cottage industry' at the turn of the twentieth century (LeeDecker et al. 1992). The primary indicator of this activity was the presence of shell wasters, pieces of shell with circular 'plugs' removed. Archival research indicated no structures in close proximity to the recovered materials. Likewise, archaeological investigation recovered no data consistent with architectural features. It is possible local farmers used shell waste products from Milton's button making industry for agricultural purposes. Other artifacts recovered include four fragments of mold blown, lipping-tooled, manganese-tinted bottle glass (Table 5). American and English glassmakers used German manganese to clarify glass starting in the 1880s; World War I ended manganese imports (Stelle 2001). The majority of the artifacts collected from the site are contemporaneous with this glass type, with two pearlware fragments the exception.

3.3.5 Survey Area E

Area E was located in the northwest corner of the intersection of SR319 and Lavinia Street. Area E consisted of a grassy patch bounded to the north and west by agricultural fields in corn (Figure 10). Archaeologists excavated four STPs in Area E. The proximity of Area E to an historical structure, as indicated by archival research, determined the five meter STP interval. STP numbering was sequential, one through four, east to west. Survey recovered no artifacts and no archaeological sites.

3.3.6 Survey Area F

Area F was located north of SR319 and east of a small marshland/drainage (Figure 11); the area occupied a small rise. The area is bound to the south by SR319 and to the north by the LOC. The eastern boundary is the slope leading to the aforementioned wetland. The proximity to

active wetland increased the potential for prehistoric resources. The STPs were placed at a 10 meter interval due to the landform, and its potential for prehistoric archaeological resources. Tests were numbered sequentially one through four, east to west. Survey recovered no artifacts and no archaeological sites.

Table 5. Artifacts Recovered from the Shell Button Site

		Count	Percent Within Class	Percent of Total
Domestic				
	Chinese Porcelain	1	4.35	1.30
	Whiteware/Ironstone	4	17.39	5.19
	Pearlware	2	8.70	2.60
	Redware	2	8.70	2.60
	Flower Pot	1	4.35	1.30
	Glass Vessel Fragments	2	8.70	2.60
	Mold Blown Glass - Manganese Tint	4	17.39	5.19
	Unidentified Bottle Glass	7	30.43	9.09
	Total Domestic	**23**	**100.00**	**29.87**
Industry				
	Shell Button Wasters	41	100.00	53.25
	Total Industry	**41**	**100.00**	**53.25**
Architectural				
	Cut Nails/Spike	2	25.00	2.60
	Hook	1	12.50	1.30
	Window Glass	3	37.50	3.90
	Brick/Mortar	1	12.50	1.30
	Tile	1	12.50	1.30
	Total Architectural	**8**	**100.00**	**10.39**
Miscellaneous				
	Unidentified Glass	2	40.00	2.60
	Misc. Metal	1	20.00	1.30
	Unidentified Plastic	2	40.00	2.60
	Total Miscellaneous	**5**	**100.00**	**6.49**
	TOTAL	77		**100%**

3.3.7 Survey Area G

Area G was located south of SR319, which served as the northern boundary (Figure 12). The Area F drainage and associated bottomland served as the eastern boundary for Area G. An agricultural field served as the boundary to the west and the LOC defined the southern boundary. A total of eight shovel tests numbered sequentially east to west were excavated. Due to the proximity to an active drainage and increased prehistoric archaeological potential, the easternmost five tests were excavated at a ten meter interval, with the remaining three at fifteen meter interval. STPs 2, 3, and 4 collectively produced 172 brick fragments (Table 2). The fragments were small, together amounting to less the weight of one brick. The area in which the brick was found was visually inspected for signs of a structure, but no such evidence was found. The absence of any other artifact type suggests possible secondary deposit. Survey identified no archaeological sites.

3.3.8 Survey Area H

Area H - North was located in the northeast corner of the intersection of SR30 and SR319. Historical records indicate a dwelling in the vicinity of this area. Three STPs were excavated in this area along a southeast-to-northwest trending transect (Figure 13) numbered sequentially starting in the southeast. No sites were identified in Area H - North. One flat glass fragment, one shell, and one piece of coal were recovered from Area H – North (Table 2). The artifacts are refuse and do not constitute an archaeological site. Area H - South occupied the southeast corner

of the intersection of SR30 and SR319. Historical records indicated a dwelling in the vicinity of this area. Four shovel tests were excavated at 10 meter intervals in this area along a northeast to southwest trending transect (Figure 13).

Two Hills Site (x-xxx). This site occurs at the southeastern intersection of SR319 (Sand Hill Road) and SR30 (Gravel Hill Road). Historical maps of the area indicate a building in the southwestern corner. A local resident, Mrs. Carey, confirmed this research. Evidence of the site appeared in STPs HS-2, HS-3, and HS-4 excavated in Area H-South. The scatter of historical materials continued into the cornfield, beyond the LOC; site boundaries remain indeterminate.

Test Unit HS-1 was placed in between STPs HS-3 and HS-4 (Figure 13). A single stratum was recorded, with a mix of 18th and 19th century artifacts. Artifacts recovered from the Two Hills Site included tin enamel ware, and refined wares such as creamware, pearlware, and later ironstone and whiteware (Table 6). Pedestrian survey identified no artifact concentrations; artifact density was low in quantity and dispersed.

Table 6. Artifacts Recovered from the Two Hills Site

		Count	Percent Within Class	Percent of Total
Domestic				
	Whiteware/Ironstone	2	5.26	1.89
	Pearlware	2	5.26	1.89
	Creamware	3	7.89	2.83
	Unidentified Refined Earthenware	1	2.63	0.94
	Tin-Glazed Earthenware	1	2.63	0.94
	Yellowware	1	2.63	0.94
	Redware	15	39.47	14.15
	Glass Vessel Fragments	5	13.16	4.72
	Machine-Made Bottle Glass	1	2.63	0.94
	Unidentified Bottle Glass	7	18.42	6.60
	Total Domestic	**38**	**100.00**	**35.85**
Architectural				
	Cut Nails/Spike	9	16.67	8.49
	Unidentified Nail	1	1.85	0.94
	Window Glass	1	1.85	0.94
	Brick/Mortar	43	79.63	40.57
	Total Architectural	**54**	**100.00**	**50.94**
Miscellaneous				
	Clinker	2	14.29	1.89
	Clam Shell	8	57.14	7.55
	Oyster Shell	1	7.14	0.94
	Ammunition Casing	1	7.14	0.94
	Misc. Metal	2	14.29	1.89
	Total Miscellaneous	**14**	**100.00**	**13.21**
	TOTAL	**106**		**100%**