

III. Geomorphological Evaluation

The geomorphological investigations (*Appendix B*) conducted for State Bridge 503 involved an initial pedestrian reconnaissance of the entire archaeological APE followed by the placement of six deep auger probes. The locations of the auger probes were mapped using a handheld GPS unit and are graphically depicted in *Figure 2*.

The northeast quadrant of the APE is comprised of two distinct landforms. The easternmost is confined to the upland landform located to the southwest of the St. Anne's Church Cemetery (*Photograph 1*). Auger probe 1 was placed on this landform; its profile revealed an initial fill stratum approximately 0.08 meter (0.26 foot) in thick overtop a dark brown sand A horizon and a gravelly sand C horizon, respectively. Based on this profile, archaeological potential on this landform extends to the upper 0.20 meter (0.65 foot) of the C horizon. Moving west, the upland landform drops abruptly down to the T1 terrace associated with Deep Creek (*Photograph 2*). Pedestrian reconnaissance of this landform revealed that the ground surface of the T1 terrace is flood scoured. This is evidenced by the presence of a number of deep swales that cut through the terrace, particularly near the northern edge of the APE, in closer proximity to Deep Creek. The swales are bounded by higher, preserved portions of the terrace. The auger probes excavated on this landform revealed that the swales contain recent or late Holocene coarse sands and gravels. The auger probes placed on the higher preserved portions of the terrace exhibited an initial 0.10 meter thick A horizon that overlaid a 0.20 to 0.40 thick Bw horizon. The Bw horizon was found to rest on lateral accretion deposits. Dr. Vento noted that archaeological potential on T1 terrace extends to the top of the lateral accretion deposits.

The northwest quadrant of the APE also contains two distinct landforms. The first, which lies to the west of the existing railroad tracks, contains the heavily disturbed old Middletown landfill (*Photographs 6 and 7*). This area was investigated by Tetra Tech during their Phase II Environmental Investigation for a proposed storm water retention pond (*Appendix C*). Seventeen test pits were excavated to depths ranging from 2-16 feet in the area of the landfill during their study. The results indicated that landfill material ranged in thickness from 2 to 4.5 feet (0.6-1.4 meters), therefore archaeological investigations were not recommended in this portion of the APE. An agricultural field lies west of the wooded area containing the landfill (*Photograph 8*). Auger probes placed in this field exhibited two distinct profiles. Auger probe 3, placed closest to the tree line, contained an initial 0.25 meter (0.82 foot) thick plowzone which rested on a Bw horizon that was approximately 0.8 meter (2.62 feet) thick. The Bw horizon was found to overlie lateral accretion deposits, which represent the vertical limit of archaeological potential in this portion of the APE. Moving to the west and slightly upslope of auger boring 3, auger borings 4 and 5 revealed a more typical upland profile consisting of a 0.20 meter thick plowzone over a gravelly sand C horizon, the latter of which marked the elevation of cultural sterility.