CURRENT RESEARCH 7NC-D-70

Introduction & Research Methods

The major research task of the current investigation of 7NC-D-70 was the determination of eligibility of the site for inclusion on the National Register of Historic Places. Determination of eligibility included definition of the site limits and determination of the contextual integrity of the site. The limits of the site as defined by Thomas (1980) were not considered to be indicative of the potential site limits. Consequently, the potential limits were extended to the east and to the south within the ROW (Figure 2 and Plate 2). The site was thus enlarged to measure approximately 35 meters north-south and 130 meters east-west. It was bounded on the west by a small ephemeral stream and included a slope which rose gradually over a distance of 80 meters to a berm. The remainder of the site was a relatively flat area to the east. With the exception of the western 30 meters, which is wooded, all of the site is utilized for agricultural purposes.

The site was lying fallow when excavations began in the first week of April. The site had been regularly plowed for several years and was plowed and planted with corn in the spring, subsequent to the excavations. The surface was well-weathered and ground visibility ranged from 30%-80%. Therefore, as the initial step to determining site eligibility a controlled surface collection was conducted. The purposes of the survey were to aid in the determination of the site limits and to determine the artifact types present, their distribution, and their density. This information was then used to determine the placement of the 1 x 1 meter test units and the post holes of the sub-surface testing. The controlled surface survey yielded 13 artifacts

FIGURE 2

7NC-D-70

SITE MAP SHOWING LOCATION OF 1X1 METER TEST UNITS, POST HOLES, AND ARTIFACTS FOUND DURING CONTROLLED SURFACE SURVEY

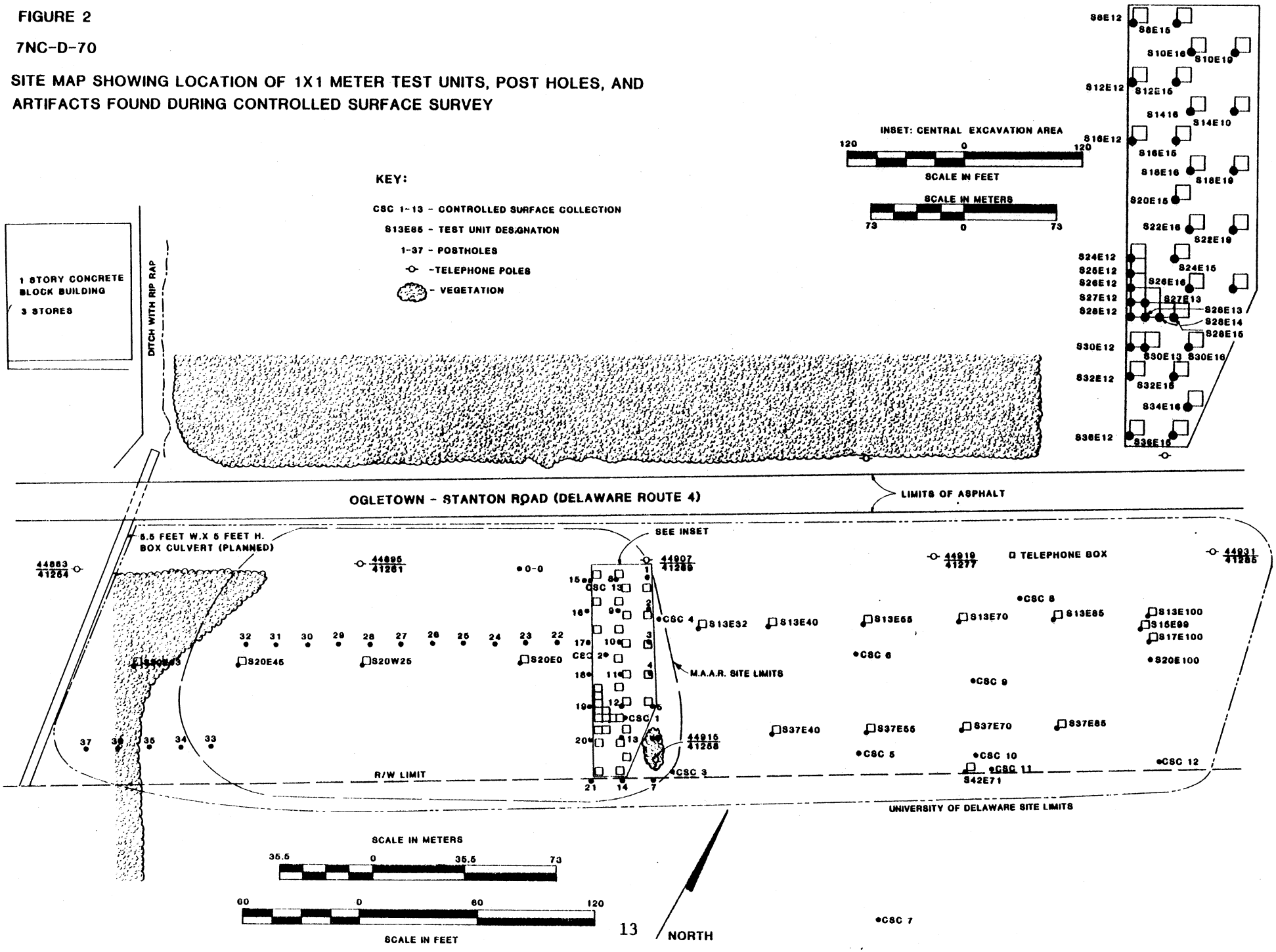
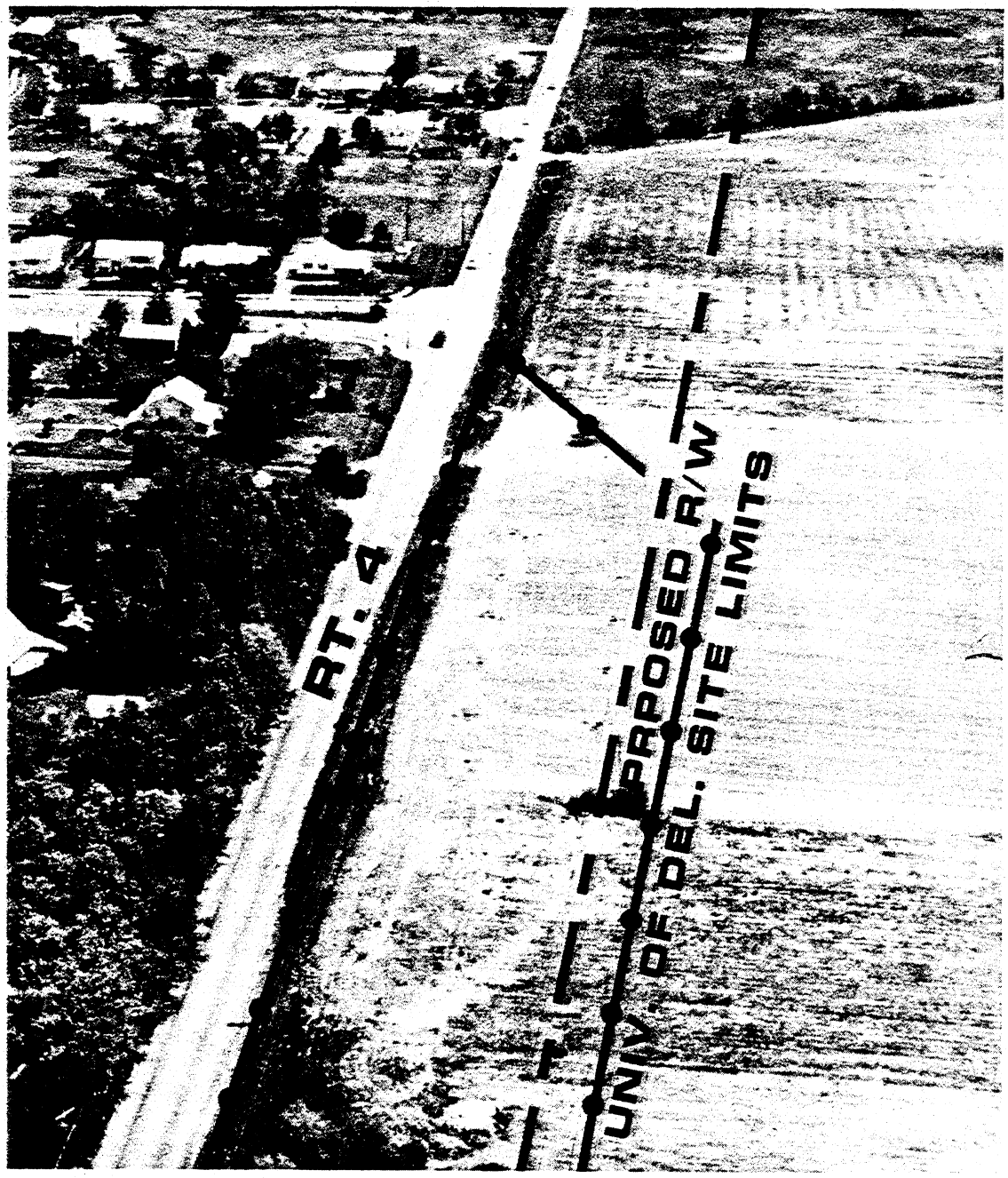


PLATE 2



SITE LOCATION
7NC-D-70

which were widely scattered throughout the proposed ROW (See Figure 2 for locations). These included 10 quartz, chert, and jasper flakes and three projectile points: (1) a chert, basally thinned, fluted projectile point (Plate 3); (2) a stemmed argillite point (Plate 4); and (3) a quartz stemmed point (Plate 5). These artifacts are described in more detail in the results section.

Based on the surface survey, which had revealed little concerning the slope west of the berm, it was decided that a combination of 1 x 1 meter test units and post holes would be employed to test the site. A total of 37 post holes were excavated. Twenty-one of these were concentrated on the berm in three north-south rows of 7 post holes per row, each 5 meters apart. The remaining 16 post holes were spaced 5 meters apart in a single line extending down the slope to the ephemeral stream. This line was offset between post holes #32 and #33 due to vegetation growth (see figure 2). The purpose of the post holes was to ascertain the subsurface integrity of the slope and the berm, including any cultural or natural features of buried organic materials.

The 1 x 1 meter test units were placed to provide a representative and controlled sample of the spatial limits of the site based on the wide distribution of the artifacts found in the controlled surface survey. A total of 18 test units were excavated, 12 on the berm and to the east of it, and 6 down the slope to the ephemeral stream. Three test units (S13E32; S20E15; S20E0) were excavated to investigate artifact distributions found on the berm. One test unit (S42E71) was placed in the vicinity of the argillite point find. The remainder of the units were regularly spaced throughout the site, except for test units S13E100 and S17E100 which were excavated to investigate a jasper flake which was recovered from a sub-surface context in test unit S15E99.

PLATE 3

CHERT PALEO-POINT BIFACE

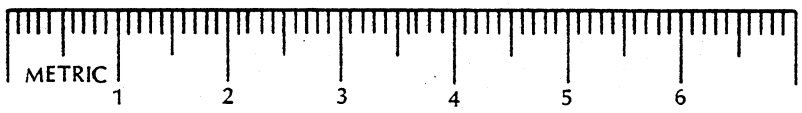
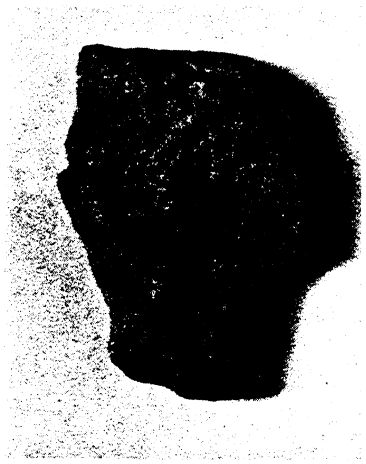


PLATE 4

ARGILLITE STEMMED POINT



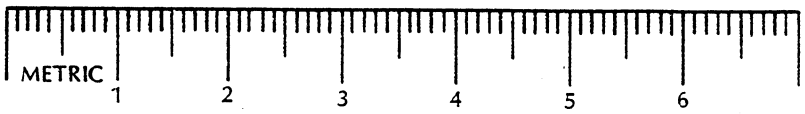
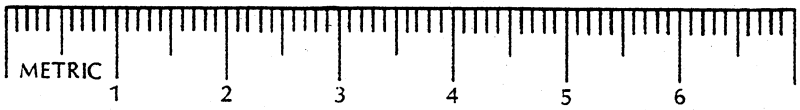


PLATE 5

QUARTZ SIDE-NOTCHED PROJECTILE POINT



The purpose of the test units on the berm and in the field east of it, was to identify the subsurface integrity and to determine artifact distribution in specific areas of the site. The purpose of the units excavated to the west of the berm was to identify subsurface integrity of any cultural materials. Also included would be buried organic deposits and fossil pollen data for analysis of past environments.

In order to more closely examine the buried organic remains encountered on the floodplain of the ephemeral stream, two backhoe trenches 3-4 meters in length were dug near test units S20E45 and S20E63. The purpose of these cuts was to obtain detailed stratigraphic recording and sampling strata for pollen analysis. Unfortunately, very rapid filling with ground water and the collapsing of the trench side walls made the collection of this data impossible. Sampling of the spoils from the trenches did not reveal any preserved organics nor any artifacts. An additional 35 1 x 1 meter test units were excavated in the berm area by members of the Archaeological Society of Delaware and the Society for Pennsylvania Archaeology, under the direction of the University of Delaware (see Figure 2). All of the test units extended to plowzone depth (approximately 20cm). The objectives for these units were to define the limits of distribution of the potential Paleo-Indian artifacts and collect additional artifacts.

Results

The test excavations carried out at 7NC-D-70 revealed a complex stratigraphy across the site (Figures 3 & 4). Profiles from the test excavation units are summarized and listed in Appendix II and profiles from the post hole tests are listed and summarized in Appendix III. Figure 3 shows a

cross-section of the stratigraphy of the site and a generalized block diagram of the site is shown in Figure 4. The soils from the site show a series of depositional events that have occurred in the area since the end of the Pleistocene. In the area between the ephemeral stream and the berm of the field there is evidence of major shifting of the course of the stream. Soils in the area include a modern humus and an older buried humus in the vicinity of the wooded area adjacent to the stream (Horizon H and #1, Fig. 3). In some locations older buried humus, or swamp edge, soils are noted well removed from the present course of the stream (Horizons #4 and 5, Fig. 3 and buried swamps noted on the block diagram). A soil horizon containing grey-orange clays and sands as well as a variety of water-rolled pebbles, gravels, and large cobbles surround the buried swamp soils (Horizons #5 and #6, Figure 3). These soils with water-rolled and sorted deposits represent former stream channels of the present stream and the buried swamps represent old stream edge wooded settings with poor drainage. The reasons for the movement of the stream channel are numerous and include changes in bed load and consequent adjustments of flow and gradient as well as climatic changes that would significantly alter the amount of water present. In some areas of the Middle Atlantic such changes in stream geomorphology have been linked in time to changes in climate (Curry and Custer 1982); however, there are no preserved plant remains or datable materials to allow such a correlation at 7NC-D-70. Nevertheless, it should be noted that most of the shifting of the stream bed took place after the deposition of the Late Pleistocene sediments noted in Figures 3 and 4 (eg. -Horizons #11 and #12, Fig. 3). Therefore, the significant changes in stream channel morphology are all Holocene in age and would have

FIGURE 3

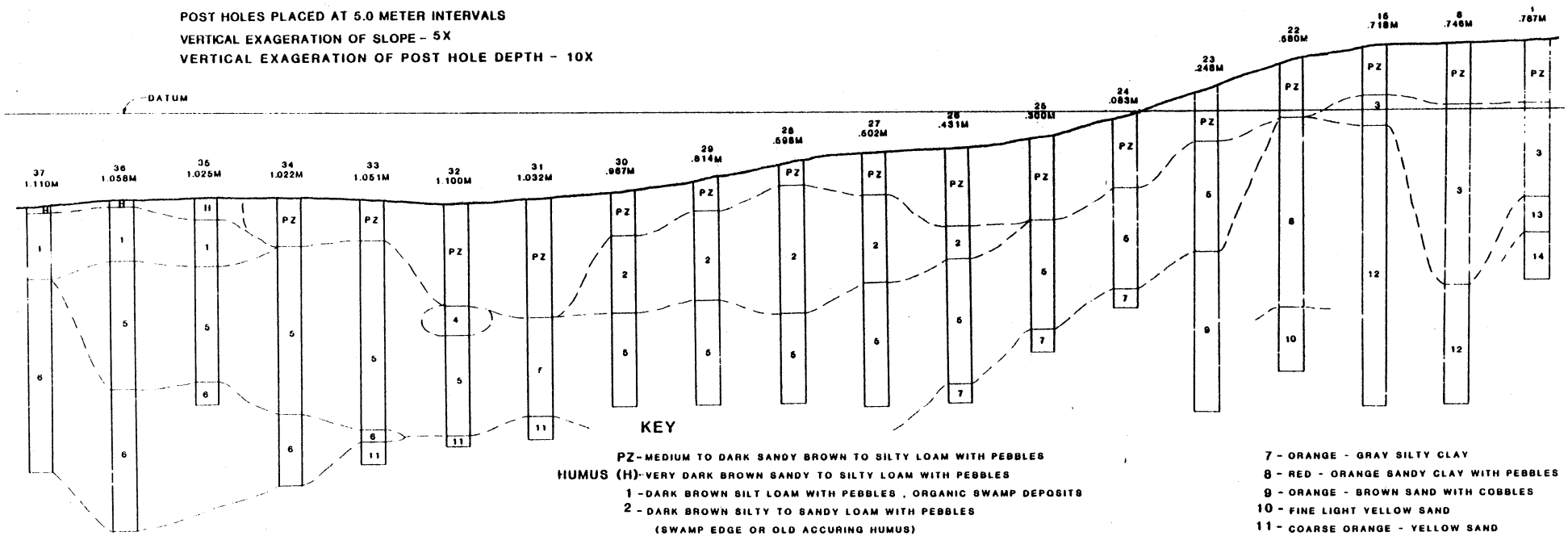
7NC-D-70

PLACEMENT OF POST HOLES 1, 8, 15, 22-37 WITH ELEVATIONS ABOVE AND BELOW SITE DATUM AND SOIL SECTIONS

POST HOLES PLACED AT 5.0 METER INTERVALS

VERTICAL EXAGERATION OF SLOPE - 5X

VERTICAL EXAGERATION OF POST HOLE DEPTH - 10X



KEY

PZ - MEDIUM TO DARK SANDY BROWN TO SILTY LOAM WITH PEBBLES

HUMUS (H) - VERY DARK BROWN SANDY TO SILTY LOAM WITH PEBBLES

1 - DARK BROWN SILT LOAM WITH PEBBLES , ORGANIC SWAMP DEPOSITS

2 - DARK BROWN SILTY TO SANDY LOAM WITH PEBBLES (SWAMP EDGE OR OLD ACCURING HUMUS)

3 - YELLOW, ORANGE, TAN, BROWN, MEDIUM SANDS WITH PEBBLES AND SOME CLAY

4 - VERY DARK BROWN SANDY LOAM

5 - GRAY, YELLOW, TAN SANDY TO SILTY CLAY

6 - MEDIUM TO COARSE SAND WITH PEBBLES AND COBBLES

7 - ORANGE - GRAY SILTY CLAY

8 - RED - ORANGE SANDY CLAY WITH PEBBLES

9 - ORANGE - BROWN SAND WITH COBBLES

10 - FINE LIGHT YELLOW SAND

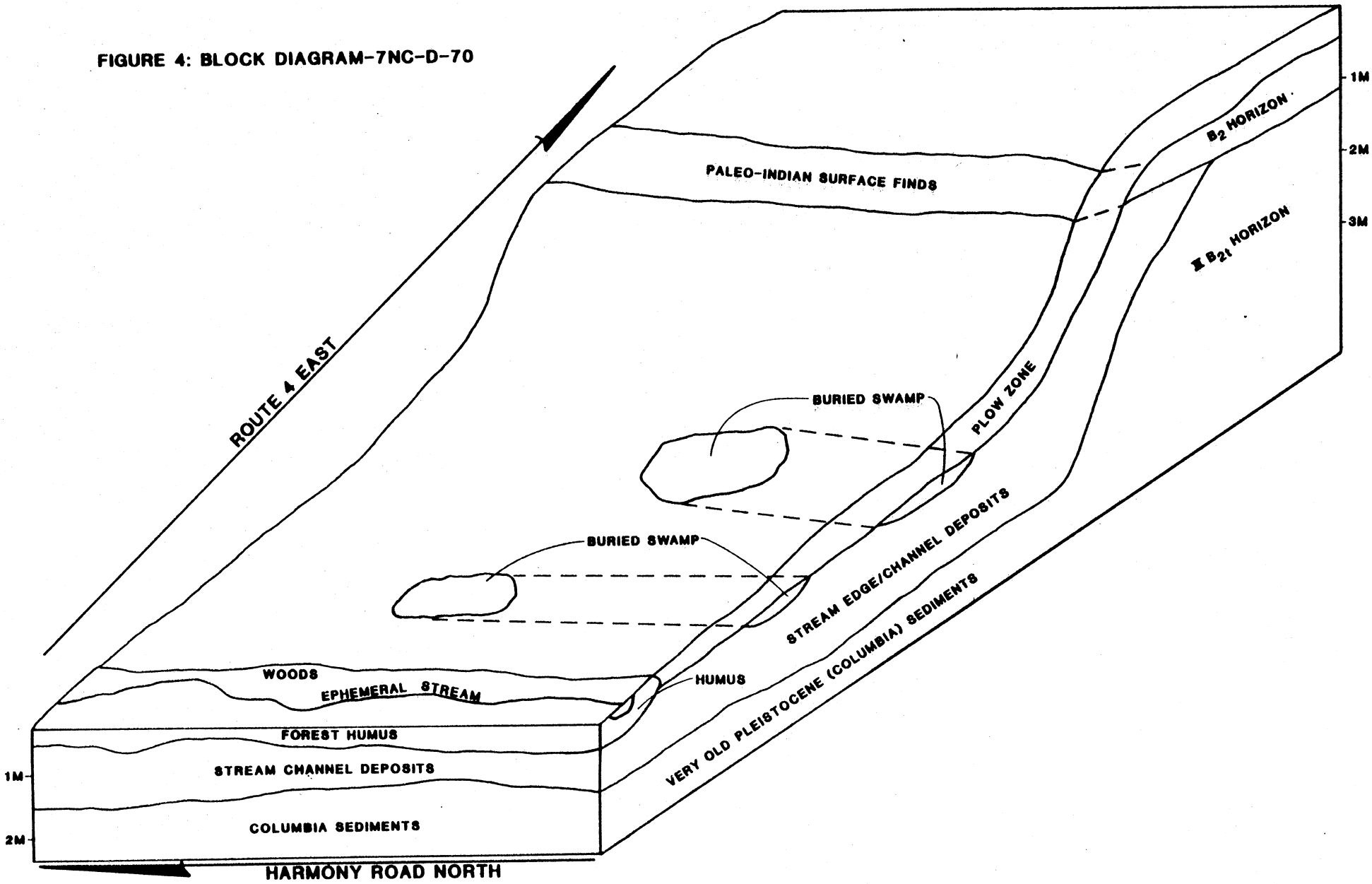
11 - COARSE ORANGE - YELLOW SAND

12 - MEDIUM TEXTURED MULTICOLORED SANDS WITH PEBBLES

13 - COARSE ORANGE SAND WITH SOME CLAY (PEDOGENIC DEVELOPMENT)

14 - MEDIUM BROWN , MEDIUM TEXTURED SAND

FIGURE 4: BLOCK DIAGRAM-7NC-D-70



destroyed any archaeological remains that would be found in this section of 7NC-D-70.

The area of the berm and adjacent flat showed a different set of depositional events through the Holocene. The plow zone, which covers all of the site, in this area overlies a buried argillic horizon (Horizon #3, Figure 3). This buried argillic horizon (noted as B_2 horizon in Figure 4) was probably deposited by aeolian activities. The presence of some structure and development of minor clay skins on individual soil particles is the basis for the designation of the soils as argillic and indicates an age of at least 3-4,000 years, possibly as old as 10,000 years. The B_2 argillic horizon in turn overlies another argillic horizon (Horizons #12 and #13, Fig. 3 and IIB_{2t}, Figure 4). The deeper argillic horizon is badly weathered across its surface and shows a very well developed set of clay coatings on individual soil particles. These features indicate an age of greater than 15,000 years and would not contain any artifacts. The older argillic horizon is in turn underlain by older Columbia (Pleistocene) deposits similar to those seen in the area of the ephemeral stream. In general, the top meter of deposits on the berm and adjacent flat areas is the only area that could contain buried artifacts. However, plowing has disturbed much of this area.

Numerous artifacts were recovered from the controlled surface collection and the excavation units and their age and distribution seem to fit with the estimated ages of soils and the geomorphological processes that deposited them. Appendix IV provides a summary catalogue of the artifacts recovered from the site. No artifacts were recovered from the surface collection and the sub-surface testing of the area adjacent to the stream and the lower

margins of the slope. The presence of buried swamps was originally thought to be a possible indication that exploitative activity areas might be encountered. However, the movement of the stream would have destroyed any archaeological remains and the presence of very poorly drained ground precluded any intensive prehistoric use of this section of the site.

The controlled surface collection and some sub-surface test units did produce artifacts from the berm and the upper margin of the slope. All artifacts were from the disturbed plow zone. Most of these artifacts were waste flakes and chunks from the manufacture of stone tools. Chert and quartz were the most common materials and many of these showed the presence of cortex. Also present from this area are a number of bifaces. One of the bifaces is a large quartzite cobble with a few initial edging flakes (Callahan 1979) removed. Other bifaces are chert and show evidence of manufacturing errors during the process of secondary reduction and thinning. Also present are two rejected and broken projectile points (Plates 4 and 5, 82/6/1/7, 82/6/1/10): an argillite straight-stemmed point and a quartz side-notched point. Neither of these projectile points are diagnostic of any particular time period and may date from anywhere between 6000 BC and AD 1000. Both projectile points show transverse fractures that are indicative of use as knives and cutting implements. The presence of bifaces in various stages of manufacture, flakes, and rejected tools suggests that refurbishing of tool kits was a major activity at the site. The presence of rejected tools with transverse fractures suggests some kind of processing activities.

Three additional artifacts from this area of the site are of special interest. All three artifacts were recovered from the surface and the

plowzone, as were almost all of the artifacts from the area of the berm. Included is a possible fluted point (Plate 3 - 82/6/1/2) of green-grey chert. This point is made from a flake and has shallow basal thinning flakes on the obverse surface. The basal portions of the flakes are slightly ground and the point exhibits a transverse fracture with some resharpening across the fracture. As such, the artifact does not represent a "typical" Paleo-Indian fluted point. Certainly it is not a Clovis point. However, it is more likely from the Paleo-Indian Period than any other time period. Some Woodland I Jacks Reef points have a similar shape and some basal thinning; however, the slightly excurvate shape of the blade of the point and indented base are not similar to Jacks Reef projectile points. Consultation with other archaeologists reinforced the opinion that the projectile point is more likely Paleo-Indian than anything else. However, it should be noted that the point by itself is not complete proof of a Paleo-Indian occupation at the site. Further checking of the literature also revealed that the point is similar to projectile points recovered from a Late Paleo-Indian context at the Turkey Swamp site in the Inner Coastal Plain of New Jersey (Cavallo 1981).

In addition to the possible Late Paleo-Indian point, two other artifacts are noteworthy. These two artifacts are depicted in Plates 6 and 7 (82/6/1/1 and 82/6/13) and represent flake tools. Artifact 82/6/1/1 is a side-scraper with heavy resharpening along the lateral edge and artifact 82/6/13 is an end scraper with heavy wear and resharpening along the proximal end and proximal sections of both lateral edges. These tools are not diagnostic of any time period; however it is not uncommon to find them in Paleo-Indian assemblages. They are indicative of processing activities, particularly processing of game

PLATE 6

RETOUCHED JASPER FLAKE

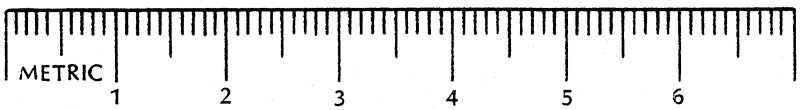
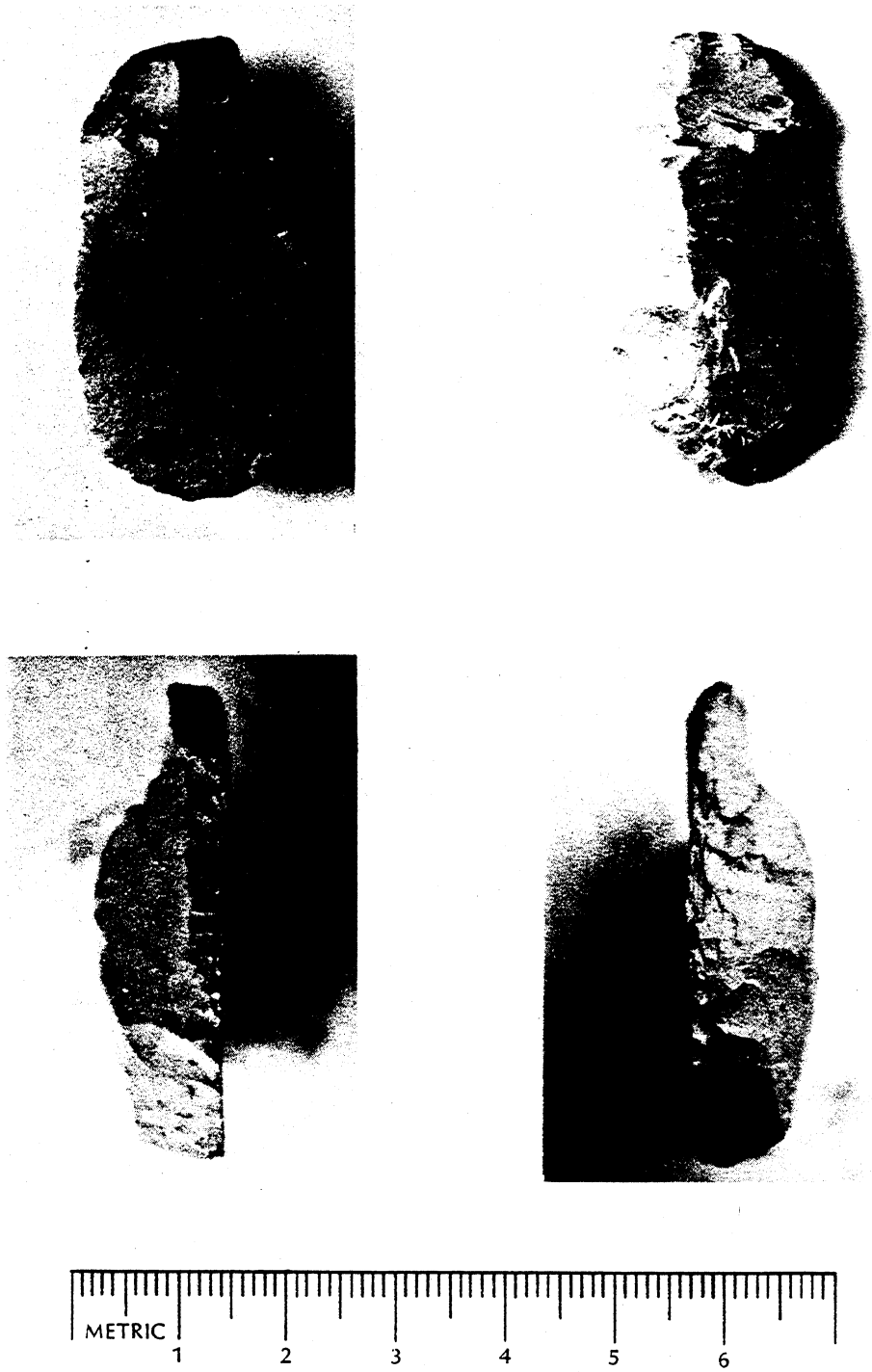


PLATE 7

JASPER END AND SIDE SCRAPER



animal resources, and when their presence is considered in light of the presence of the possible fluted point, the probability of a Paleo-Indian component present at 7NC-D-70 is strengthened.

The depositional context of the artifacts fits in with the previous discussion of soils at the site. The artifacts were recovered from the surface and plowzone on the edge of the berm and slope. As can be seen in Figure 4 the B_2 horizon outcrops in the plowzone in this section of the site. The estimated age of the soil based on its pedogenic characteristics was between 3000 and 10,000 years old. Such an age would be consistent with the presence of Late Paleo-Indian artifacts. However, in this section of the site all of the artifacts would be disturbed from their original context by plowing. It would be possible for some artifacts of this age to be present in situ in the older soils east of the berm.

Testing of the older soils west of the berm revealed few artifacts. Some Woodland I artifacts were recovered from the surface of the site by University of Delaware researchers and local collectors. No artifacts from either the Archaic or Paleo-Indian Period were recovered from the surface in this area. Sub-surface testing recovered only one artifact: a jasper flake in the B_2 horizon approximately 80 cm deep. This artifact was recovered in the initial stages of the testing and was seen as a possible indication of in situ, buried archaeological remains from the Archaic, or possibly, Paleo-Indian Period. Although additional test units were excavated in the area, no additional artifacts were recovered. These findings indicate that if there are any buried older artifacts in the area, they are very scattered and indicative of only ephemeral use of the site. Also, the top of the older argillic horizon was

weathered and eroded. If any artifacts were deposited on this surface, erosion of the surface, and the artifacts, could have taken place as the aeolian soils were deposited. In this scenario, the deeply buried flake would be only the remnant of an eroded and destroyed site.

Summary and Conclusions

The research at 7NC-D-70 recovered a variety of artifacts and revealed a number of varied depositional settings. In no areas of the site were prehistoric archaeological remains present in undisturbed contexts. In the section of the site closest to the ephemeral stream, natural erosion has disturbed most of the potential locations for prehistoric activity areas. Also, the poorly drained nature of this section of the site throughout most of the Late Pleistocene and Holocene makes it an unlikely location for intensive prehistoric activities. Nevertheless, the presence of backwater swamps and surface water makes the general locale a game-attractive area that would be an excellent site for hunting. The most likely place for prehistoric activities would be the berm of the field on the upper end of the slope. This area would represent the nearest well-drained surface adjacent to the good hunting locale. Indeed, in this section of the site a number of artifacts were recovered. The artifacts seem indicative of refurbishing of tool kits and processing activities, and would fit with the inferred use of the site as a hunting camp or processing camp. However, plowing and natural erosion along the berm have destroyed the context of any archaeological remains in this area. Moving away from the poorly drained area to the east of the berm, prehistoric activities associated with the swampy stream would be expected to diminish in frequency and the

artifacts show such a patterning. The buried flake from this area is most likely a remnant of such infrequent use of this area. Surely, if there was extensive prehistoric use of this section of the site the sub-surface testing program should have recovered more artifacts. Consequently, it is concluded that moving east of the berm artifacts are infrequent and the information potential of this section of the site is low.

Given the fact that there are no in situ archaeological remains at 7NC-D-70, and given the fact that continued research at the site is unlikely to significantly add to our understanding of the site's role in the local archaeology, the site is not considered to be eligible for the National Register of Historic Places and no further work is recommended. The research carried out to determine the eligibility of the site and previous work has produced useful information and further data gathered from the site is most likely to be redundant.

The role of the site should be considered in light of local prehistory. The environmental setting of the site from the Late Pleistocene through the Holocene suggests that the area was attractive to game and a good hunting site. Archaeological remains from the site indicate that the site was used for the hunting and processing of game animals between 10,000 BC and AD 1000. Tools broken in use at the site were discarded and new replacements manufactured from the locally-available cobble deposits. Throughout the history of its use it is unlikely that the activities carried out at the site varied greatly, although the location of various activities shifted slightly as the course of the stream and the location of buried swamps moved in response to climatic changes. In sum, the site represents a very specialized set of

activites and use of the site remained relatively consistent for at least 10,000 years.

Although the site use remained the same for this period of time, its role in regional settlement patterns may have been altered through time. During the Paleo-Indian Period this site may have been a stopping point in a migratory round that visited a series of varied hunting and quarry source locations. Similar patterns probably persisted well into the Archaic; however, as societies became increasingly sedentary throughout the Woodland I Period the site would no longer represent a stop in a seasonal movement cycle. By the Woodland I Period, 7NC-D-70 was probably an outlying hunting station that helped to support a more sedentary population at one of the nearby base camps, such as the Clyde Farm Site near Churchmans Marsh. As such, the role of the site in regional settlement patterns would have changed dramatically even though the actual activities at the site itself would have changed very little. Nonetheless, although the archaeological remains at 7NC-D-70 reveal interesting patterns of human land use during the prehistoric past, the absence of in situ remains with good context precludes both its inclusion on the National Register and further work at the site.

Current Research 7NC-D-72

Introduction and Research Methods

The research objectives for the current investigation of 7NC-D-72 were identical to those for 7NC-D-70. They were directed towards the determination of eligibility of the site for inclusion on the National Register of Historic

Places. Determination of eligibility included the definition of the site limits and the determination of the contextual integrity at the site. As indicated earlier in this report, 7NC-D-72 (Figure 5 and Plate 8) is located on a poorly drained area adjacent to a small stream. The original site limits as defined by Thomas (1980) described an area approximately 50 meters from the small stream, on both sides of Route 4. Current investigation of the site expanded the boundary south of Route 4 to include the better drained high ground east of the stream. This extended the site limits eastward 110 meters to the Omega hospital construction access road within the proposed right of way.

The excavation at 7NC-D-72 consisted of ten 1 x 1 meter test units, 160 post holes, and one stream bank strata cut (see Figure 5). Since the proposed ROW was only 8 meters wide north of Route 4, five 1 x 1 meter test units were placed in that area, 6 meters north of the road and 10 meters apart. This placement insured adequate coverage of this area of the site with regards to our research objectives. One of these units, test unit E, was placed in the ROW but out of the site limits. Its location was to help determine the extent of the cobble deposits in the area. South of Route 4 the ROW was 36 meters wide. Only two test units were placed here. One, test unit F, was 17.5 meters south of the road, and the other, test unit G, was 32.6 meters south. The reduced number of units was due to the very poorly drained nature of the soils in the vicinity. When the site limits were extended to include the high ground east of these units, a post hole grid was established to afford adequate stratigraphic coverage of the slope. Later, test units I and J were excavated to correlate the soil stratigraphy of the poorly drained area with the soil stratigraphy of the slope. The final test unit, unit H, was placed north of

FIGURE 5

7NC-D-72

TEST UNIT & POST HOLE GRID LOCATION MAP

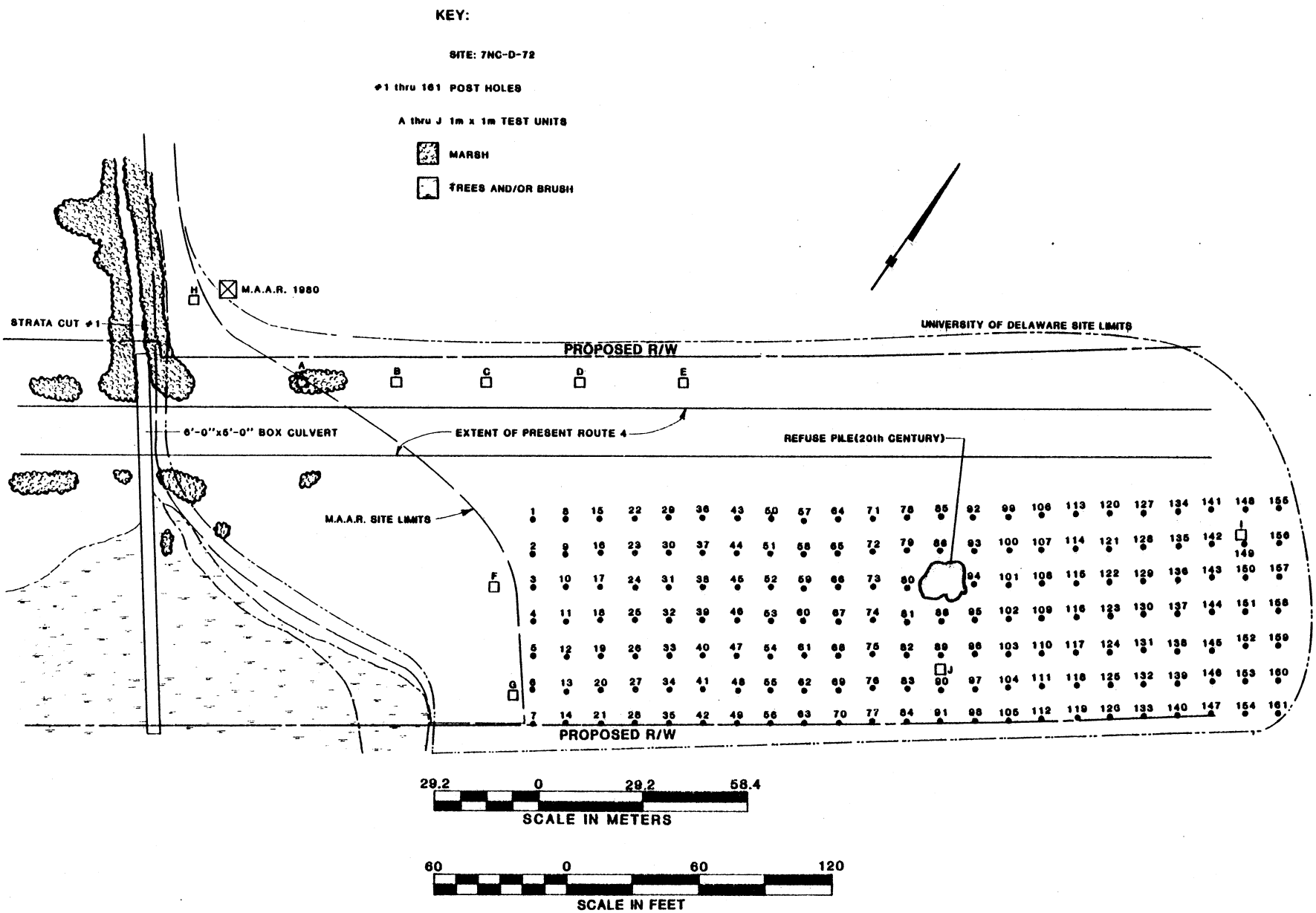
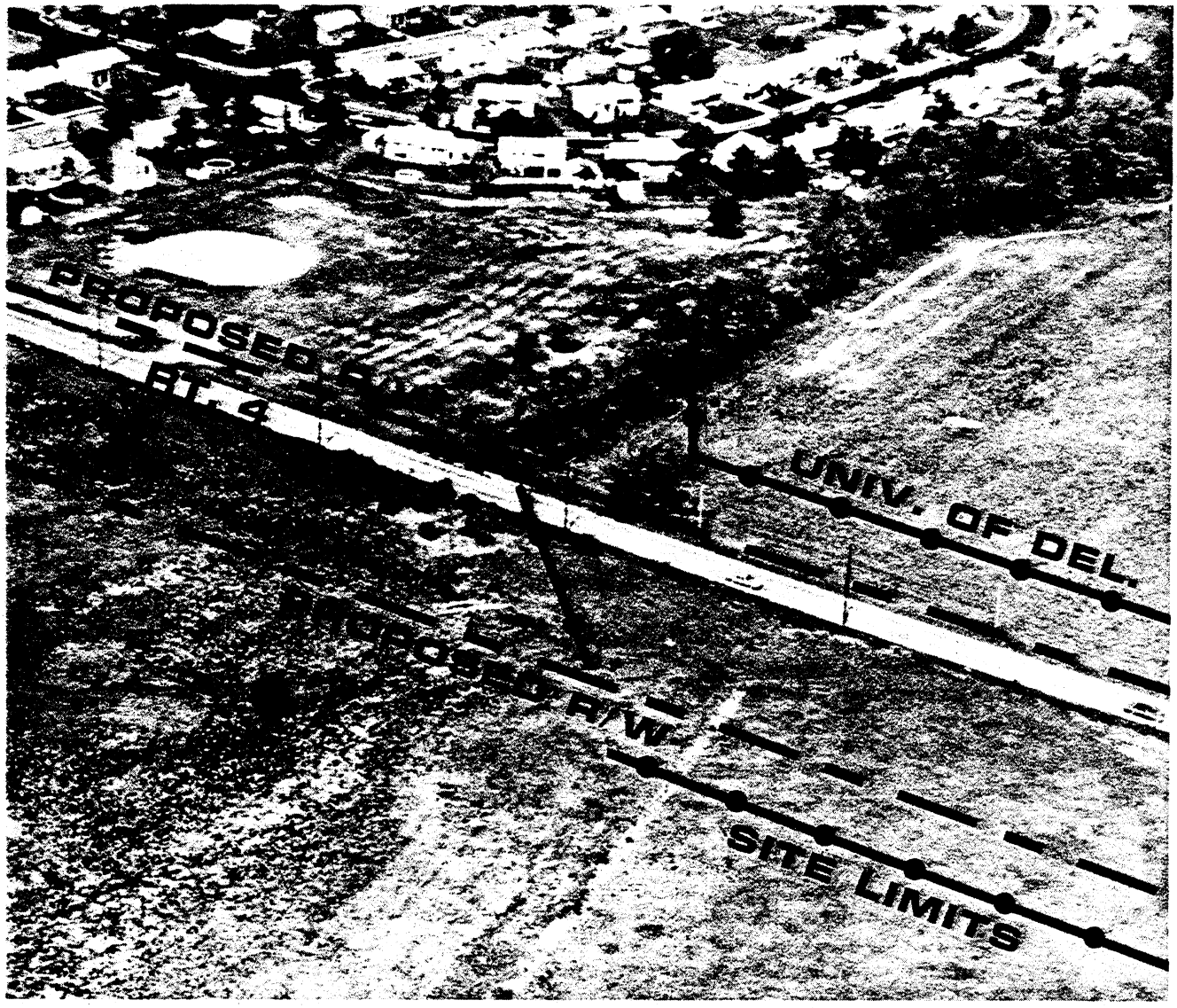


PLATE 8



SITE LOCATION
7NC-D-72

Route 4 and out of the ROW, but within the site limits. This unit was excavated for the purposes of identifying the subsurface stratigraphy and determining the extent of the cobble deposits north of Route 4.

The investigation was undertaken between the months of February and March, 1982. Throughout the project, climatic conditions (ie.; snow, sleet, ice, winds) hampered the execution of the work. Recent snowmelt had raised the area's already high water table to virtually ground level, particularly south of Route 4, making excavation difficult and, as previously stated, influencing the placement of test units.

Results

Profiles from all excavated test units, post holes, strata cuts are listed in Appendices V, VI, and VII. A summary catalogue of the few artifacts recovered is included as Appendix VIII. Of the items listed in Appendix VIII, less than 10 are clear cut examples of waste materials from the manufacture of stone tools. The remainder do not show good evidence of distinctive flake morphology indicative of human tool manufacturing activities. Although the manufacture of stone tools from cobbles produces debitage that does not show good flake morphology, some clear-cut flakes and rejected bifaces should be present. For example, site 7NC-D-70, described earlier in this report, contained evidence of tool manufacturing from cobble deposits and in addition to flakes with well-defined morphology, a variety of broken bifaces were present. However, at 7NC-D-72 no similar assemblage was encountered. Even when the artifacts from the previous study of the location are considered, there is an insufficient number of flakes with well-defined morphology to

consider the location an archaeological site of anything but the most ephemeral use. Given the total context of the assemblage from 7NC-D-72, it can be stated that the current excavations produced less than 10 artifacts scattered throughout the limits of the site within the ROW.

The profiles from the various test units in the main area of the site defined by Thomas (1980) reveal poorly drained conditions. Gleyed horizons are common and soils beneath the plow zone contain large amounts of clay development around extensive pebble and cobble deposits. The extensive clay skins and cobbles are indicative of soils of Late Pleistocene age and there are no buried landscapes present in the site area that could support archaeological sites. Profiles from the well drained areas east of the main site area defined by Thomas (1980) are similar to those of the poorly drained area with the addition of some wind-blown deposits of Holocene age. No artifacts were discovered from these deposits and the presence of any undiscovered sites given the extensive posthole testing is unlikely.

Summary and Conclusions

Fewer than 10 reliable artifacts were recovered from 7NC-D-72 and most of the site has been poorly drained throughout the Late Pleistocene and Holocene. In the few well-drained areas of the site, no artifacts were recovered. Although cobble reduction sites often contain flakes without well-defined morphology, site 7NC-D-72 lacks even the minimal number of flakes and biface fragments to consider it a cobble reduction site. At best, the site was the location of one or two tool manufacturing activities. Plowing has destroyed most of the Holocene landscapes and poorly drained conditions make

the presence of other buried landscapes unlikely. Indeed, the presence of cobble deposits near the surface, which supposedly make the site an attractive location, preclude the existence of buried land surfaces of Holocene age. Given the absence of reliable artifact assemblages and the absence of any buried landscapes, the site is not eligible for nomination to the National Register of Historic Places and no further work is recommended.