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A SURVEY OF CULTURAL RESOURCES IN THE AREA OF THE PROPOSED
POINT PLEASANT PUMPING FACILITIES, COMBINED TRANSMISSION
MAIN, BRADSHAW RESERVOIR, NORTH BRANCH MAIN AND PERKIOMEN
MAIN, BUCKS COUNTY, PENNSYLVANIA

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INTRODUCTION

In this report, we have concentrated on several aspects of the prehistoric-historic cultural resources survey; the methods and results of on-the-ground archeological research; the pertinent archival information; and the evaluation of the projects possible effects, with recommendations for alleviation. This statement does not include a general review of the prehistory and history of Bucks County, or the two townships through which the project will pass. Such a review would have lengthened an already long report; and the lack of very specific information on the regions to be effected indicated to us a corresponding lack of utility adhering to such a review.

In the course of our work we were assisted by many individuals and institutions. We would like to thank William Taylor of the Neshaminy Water Resources Authority for his tour of the Authority's properties and his kind assistance in other areas. The Parks Department provided us with digging equipment, and cleared a feature on the Point Pleasant property. We would also like to thank the librarian of the Bucks County Planning Commission's library, and the staffs of these offices: the Neshaminy Water Resources Authority; the Bucks County Conservancy; and the Mercer Museum. Kathleen O'Connell advised us on mills in the county, and Olga Chessler offered invaluable comments on the work. Finally, a general thank-you to the land owners who permitted our digging and answered our questions.

PREVIOUSLY RECORDED CULTURAL RESOURCES

Archaeological survey in Bucks County, Pennsylvania has a long, albeit sporadic, history of occurrence. While in recent years systematic attempts have been launched to locate and assess the significance of historic and prehistoric sites in this county, e.g. the work of the Bucks County Conservancy, much of the earlier studies were carried out on a casual and part-time basis (see Witthoft 1950). Despite this style of research, however, certain potentially significant features have been identified through the years which must be kept in mind in the construction of the proposed water-main and related facilities. In the following presentation, prehistoric locales situated near the line of the proposed pipeline will be dealt with first, followed by a consideration of historic structures.

In the area of Point Pleasant, 4 archaeological sites were identified by Henry Mercer working in the late 19th century, from the late 1880's to the early 1890's (Mercer 1897). One of these, the Lower Black Eddy site, possibly first discovered by John Ruth in the 1870's (Witthoft 1950:302-303), is located on/in a low rise between the Delaware River and the Pennsylvania Canal, c. 300-350 feet southeast of the proposed line of the pipe linking the Point Pleasant Pumping Station with the Intake structure on the Delaware (Mercer 1897: 70-85; see Figure 1). The position of this site may be as

much as 500-600' from the proposed line of the pipe, however, as Mercer's map, drawn in 1893, does not provide sufficient information from which to derive the precise location of his site. A field reconnaissance in the area (see the Field Research Section below), while discovering no surface remains, did locate a rise of comparable dimensions and in the same relative location with respect to the Pennsylvania Canal lock and Inn as described by Mercer. The location of this rise seems to support the situation of this site at the approximate distance noted above.

The extent of the site was never determined by Mercer, though his excavations did reveal that it consisted of two culture-bearing levels: an upper layer extending from the surface down 2 $\frac{1}{2}$ -3 $\frac{1}{2}$ ' and a lower, blackened level 1 - 1'10" thick. These levels were separated by a deposit of sterile sand, perhaps deposited by flooding, c. 1 $\frac{1}{2}$ - 3' thick (Mercer 1897:70-72). While no detailed lists of Mercer's finds seems to exist, the upper cultural level apparently contained fragments of aboriginal pottery, fire-cracked rocks, celts, net sinkers, animal bones, jasper and argillite chips, hammerstones, charcoal, stone "blades", tool blanks or pre-forms ("turtlebacks") and 5 triangular projectile points. The latter items are considered diagnostic of the Late Woodland period of occupation in Eastern North America (c. 1000-1550 A.D.) (Mercer 1897:74-77; Witthoft 1965:24-26,32). "Mixed in" with this indigenous material were several glazed

pottery sherds and a possible gun fragment, possibly indicating that this level corresponds in time with the period of contact between the local Indians, presumably the Lenni-Lenape, and the newly arrived Europeans. While such a date would correspond well with the presence of triangular projectile points in the assemblage, we, unfortunately, do not know the exact stratigraphic location of these "colonial pieces" and, hence, their association with the aboriginal material. The lower cultural level, while containing fewer artifacts, still reproduced the range of materials found in the upper level, with the exception of European-related items and triangular projectile points, both of which were absent (Mercer 1897:78-80). The completely prehistoric nature of this stratigraphic unit is supported by the few illustrated projectile points recovered from it (Mercer 1897:79,83). The general shape of these points would seem to be similar to types associated with the Early Woodland (c. 1000-500B.C.) or, perhaps, the Late Archaic (c. 4000-1500 B.C.) periods (Witthoft 1965:16, 25). The nature of the illustrations and the fact that we do not know what percentage of the total sample of such finds the illustrated pieces represent, makes any dating of the lower unit very tentative at best. The presence of 2 fragments of pottery in this level might, however, suggest an Early Woodland as opposed to Late Archaic date for this unit (Witthoft 1965:19,23).

In sum, while Mercer's report is often vague and his work did not possess the strict stratigraphic control necessary to

determine the nature and period of occupancy of this site in detail, the Lower Black Eddy site does appear to represent a locus of prehistoric occupation utilized during two, possibly discontinuous periods of prehistory.

In addition to this site, 3 other loci in the area of Point Pleasant were noted by Mercer (see Figure 1). 1.) The "blade factory" was situated c. 200' back from the south bank of Tohickon Creek near its confluence with the Delaware River (Mercer 1897:63-64). Mercer did not excavate here and based his interpretation of this site as a tool workshop on the presence of argillite "blades", hammerstones, debitage chips, and tool blanks found on the surface. 2.) The "cornfield site", located on a small flat area on the north bank of Gaddes Run, c. 800-900' west of the junction of this creek with Tohickon Creek (Mercer 1897:62). Here, again, the site was identified on the basis of surface finds of fire-cracked rocks, an argillite point, retouched flakes, stone tool debitage and pre-forms in a small corn field. 3.) The argillite quarries, sunk into the steep cliffs on the south bank of Gaddes Run, c. 5/8 of a mile west of the junction of Gaddes Run and Tohickon Creek in the area where the present Danboro-Point Pleasant Pike now runs (Mercer 1897:34-60). These quarries apparently consisted of holes dug short distances into the slope until the bed of argillite was encountered. Thirteen excavations carried out here by Mercer in 1893 revealed large quantities of stone chips and a few "rejected" tool blanks and hammerstones. At present, these sites do

not appear to be datable.

In addition to Mercer's work, other reports of artifacts from the general Point Pleasant area are noted in the literature, though the type and location of these finds are often not given in any detail (Shoemaker 1944:60).

Beyond the area of Point Pleasant, evidence of aboriginal activity along the proposed line of the water main becomes far scarcer and more equivocal. "Indian" finds which are assignable to the general area of proposed construction are reported from the following locations: scattered in a linear fashion along the north bank of Hickory Run; at the far eastern end of the North Branch of the Neshaminy Creek; on the west side of the last eastern branch of Deep Run; and an ethnohistorically known "Indian village" of 9 huts located near the headwaters of the southeast branch of Deep Run Creek (Mercer 1897:38; Rivinus 1965: Map; Shoemaker 1944:59-62,65,71; see Figure 2). In none of these cases is the exact location, nature or a list of materials recovered from these sites given. Through a combination of deed and literature research, however, it was possible to very tentatively relate an area in which "banner stones, hatchets and relics" were reported found on the north bank of the North Branch of the Neshaminy to the area of property 34-15-40 on the modern tax maps (Shoemaker 1944:60). This is the property across which the proposed North Branch Transmission Main would run en route to emptying into the North Branch Neshaminy Creek. This location is, however, a questionable one as Shoemaker is not precise in

placement of these finds, e.g. whether they were on the ridge overlooking the creek or on the flats next to that body of water. Furthermore, the repeated division of the lands in this area since the finds were recorded has led to uncertainty in equating older land parcels with modern land divisions.

Aboriginal material, apparently deriving from several different prehistoric periods, has also been reported from the area of the Perkiomen Valley, though it would all seem to have originated far to the west of the projected pipe line (Huber 1931).

Beginning again in the area of the Point Pleasant Pumping Station, the most outstanding historic feature located on the line of proposed construction is the Pennsylvania Canal which, at this point, roughly parallels the course of the Delaware River c. 400-450' to the east. Opened in 1830 as a coal-carrying route, this feature has already been entered on the National Register of Historic Sites (Baker 1974:50). Another less obvious historic feature in the area is the site of Pearson's Ferry which was first established as a means of crossing the Delaware River in 1739 and continued in operation until 1855 (Ely 1932:97-98). What permanent facilities, if any besides a dock, were associated with the ferry when it was first opened are not given in the sources researched. We do know, however, that soon after the Cave Banks Fishery Cooperative took over the running of the ferry in 1748 they set up a "fishery" and "hotel" on the ferry site (Ely 1932:98).

The location of this site is generally given as having been directly opposite the point where Ferry Road joins River Road, or, c. 400-600' north of the projected site of the Point Pleasant Pumping Station.

Beyond Point Pleasant, the historical situation is somewhat clearer than was the case with the archaeological materials as a result of the recent work of the Bucks County Conservancy. The following houses and outbuildings are presently on their Inventory of Historic Sites in Bucks County, compiled in 1976. All are at least 100 years old.

The format used below will be as follows: each historic property will be identified by its tax map number, present (1976) owner and its address. A brief statement of what the property consists of will also be included.

Sites along the Combined Transmission Main

34-18-11

Nowicki, Victoria Est.

Pipersville Road and Point Pleasant Pike, Point Pleasant, PA

House and barn

34-18-8-1

Myers, Clarence R. and Elizabeth

Bradshaw Road, Gardenville, PA

House, 4 outbuildings and barn

34-18-136-2

Moran James A. and Doris W.

Tollgate Road, Point Pleasant, PA

House

34-18-148

Dobron

Ferry Road, R.D. #1, New Hope, PA

House

34-18-149

Muller

Ferry Road, Point Pleasant, PA

House and smoke house

34-18-150

Klenert, William

Ferry Road, ?, PA

House

34-18-153

Demusz, Alex and Stephen

Ferry Road, R.D.#1, New Hope, PA

House and smoke house.

Sites along the North Branch Transmission Main

34-15-40

Lear, Clarence S., Hattie

Durham and Bradshaw Roads, Gardenville, PA

House, barn, many outbuildings

Sites along the Perkiomen Transmission Main

34-4-10

Youngbroder, John E.

Route 611, Pipersville, PA

House, shed, barn

34-4-11

Kassel Corp., c./o. Thomas Maxaniff

Route 611, Box 428, Doylestown, PA

House, barn

3 4 5 6 7 8 9 10 11

34-4-17

Seidle, Vantentine V.

Stump Road (East of Plumsteadville)

House

Additional historic information relevant to the location of historic properties in Plumstead Township was provided by a map produced in 1859 and which delineated properties and structures standing as of that date. The map itself is stored in the Mercer Museum, Doylestown, PA. By comparing this map to the maps showing the lines of the proposed transmission mains, it was found that the Combined, Northern and Perkiomen Transmission Mains did not traverse any of the listed constructions.

Unfortunately, the Bucks County Conservancy had no information on the location of historic sites in Bedminster Township. The land through which the Perkiomen Transmission Main will run, beginning in the area of Cabin Run in Bedminster Township and extending north to the East Branch of the Perkiomen has been designated as an historic area (Auerbach 1978:personal communication). A detailed historical survey of this area is presently being carried out by Pauline Cassell. At this time, it appears that no known historic sites are in the path of the proposed pipeline.

in Bedminster Twp.

FIELD INVESTIGATIONS

Field survey was limited to the areas of direct impact by proposed construction, i.e. those land that would be directly disturbed by water main, reservoir and/or pumping station excavation and construction.

The first step involved examination of the relevant maps, after which we drove from Point Pleasant along the line of the Combined and North Branch Transmission Mains to the North Branch of Neshaminy Creek, guided by Mr. William Taylor of the Neshaminy Water Resources Authority. This preliminary inspection on August 23 provided the basis for planning the more detailed survey which began that afternoon and was finished on September 8. Field operations were carried out exclusively by Edward Schortman and Patricia Urban. Adverse weather conditions and the need to obtain permission to walk on and excavate in lands along the Perkiomen Transmission Main Right of Way regrettably slowed the progress of work more than had been anticipated.

In the following presentation the total project is divided into 5 sections: the Point Pleasant Pumping Station; The Combined Transmission Main; the North Branch Transmission Main; the Bradshaw Reservoir; and the Perkiomen Transmission Main.

General Methodology

The entire pipe line right-of-way and associated construction sites, unless otherwise noted, was walked over and examined for signs of historic and prehistoric occupation. The areas walked varied in vegetation cover from low, dense grasses, to high dense grass, to open woodland to plowed and planted fields. In cases where the ground was heavily overgrown, small areas were periodically cleared to obtain a view of the ground surface. Despite these efforts, however, visibility tended to be poor in areas of medium to high dense grass and observations were, thus, more limited in these zones. Where plowed fields prevailed every 4th - 8th row would be walked to the limits of the right of way examining the cleared ground for signs of previous human occupation. In situations where the owner of the land crossed could be located we would question him as to whether he had found historic or aboriginal artifacts on his land in the past; if so, where and when; and if he knew if any of his neighbors had found such materials. Shovel tests were employed to quickly probe for subsurface deposits of material in areas judged to be possible locations of historic/prehistoric occupation. Test pits (7) were excavated at points where: permission was granted; the owner reported finding artifacts in the past; and/or a conjunction of favorable circumstances seemed to provide an environment conducive to the location of human occupation. In general, these latter conditions might consist of easy access to water and possession of a well-drained site for settlement. Notes were taken during

the walking survey; notes and drawings were used to record the excavations; and black and white photographs were taken of certain selected features.

Point Pleasant Pumping Station

The area of the pumping station, the intake structure and the connecting pipe line were thoroughly walked on foot over the course of four separate visits. As the projected area encompassed by these facilities was in high grass and weeds, periodic clearing with the machete was necessary to inspect the ground surface. In addition to this walking and clearing, a wall was thoroughly cleared by two members of the Parks Department and two test pits were dug, one in the area of the proposed pumping station and the other on the east side of the Pennsylvania Canal along the line of the pipe leading to the intake structure. The features recorded during the course of this work were as follows. An inset from the Pennsylvania Canal was found immediately (c. 8-10') southeast of the point where the pipe line is to juncture with the west bank of this canal. The walls of this construction stood to a height of c. 1.17 - 1.27 m, were built of concrete facing over a core of rough, unfaced stones and were best preserved on the north side. On the basis of different methods of wall construction between the canal and this feature, it would appear that the latter was a secondary addition to the former.

Approximately 3.5 m northwest of this feature a long, curving wall was noted (see Figure 3). This feature, which

was thoroughly cleared of all vegetation, apparently served as the downslope wall of a terrace, with the ground gradually rising to the west. It was constructed of flat-sided rectangular fieldstones ranging in size from 16 x 5 cm to 40 x 17 cm. and set in cement. The wall runs for c. 13.0 m in a northwest-southeast direction and then forms a curving corner and continues for c. 6.0 m in a northeast-southwest direction. This feature, on its downslope side, presently stands to a height of c. 88-97 cm. and varies in thickness from 25-45 cm. In examining the wall it was found that the southern and northern sections were of slightly different construction (see Figure 3). The southern portion seemed better constructed, employing larger, better faced rocks set in a higher quality concrete with well-finished pointing between the stones. The northern section possessed coarser concrete, smaller, more roughly faced stones and showed a lack of care in pointing between the stones. In general, this feature seems to have served as a terrace used to create an area of level ground close to the Pennsylvania Canal. As no foundation lines were discernible on the surface, this construction might have supported a perishable structure.

No excavations were carried out within this construction, though after it was cleared certain artifacts were noted embedded in the rough stone fill which backed the wall. These items included: an old, rusted car bumper, c. 1.67m long; a brass house ornament, possibly a lantern hanger, bent into

an "L" shape; and a concrete pillar into which had been set an iron pipe. Notes, photographs and drawings were used to record this feature.

Approximately 6.0 m east of this wall is the Pennsylvania Canal itself. Both the east and west banks of the canal at the point at which the pipe line would pass beneath this feature would seem to be devoid of standing walls. While this does not preclude the possibility that remnants of such construction might be preserved beneath the sloping layers of thick grey clay which have been deposited in this area, it would still appear that little of the original stone construction of the canal is presently preserved here. In addition to notes, photographs were taken of this section of the canal.

1.0 x 0.75 m test excavation (designated Op. 1B) with its corners oriented to the cardinal directions was dug in the area of the proposed pumping facility (see Figure 4). A large rock covering almost the entire area of the pit was encountered at a depth of c. 36 cm. below the west corner and was overlain by two distinct soil levels containing a high proportion of small, flat, shale-like rocks. The artifacts recovered from this excavation were found almost exclusively in the upper level, the "A" horizon (see Table 1). With the possible exception of 1 chert(?) flake, all of the material found appears to be of relatively recent (20th century) origin. Probes with the machete over the remaining area of the pumping facility indicated a similar situation, with a high density

of rocks being encountered near the surface. As it seemed unlikely that any aboriginal or historic material would be well preserved in such a matrix, further digging was discontinued.

A second excavation (designated Op. 1C) 1.0 x 1.0 m in size with the sides oriented on the cardinal directions, was opened on the east side of the Pennsylvania Canal (see Figure 4). The purpose of this excavation, in addition to testing the area to be crossed by the pipe line, was to determine if any traces of the aboriginal occupation identified by Mercer to the southeast would be encountered by construction in this area (Mercer 1897). As a result, an attempt was made to locate the pit along the same contour line that Mercer's site occupied. The only artifacts found were modern glass and metal objects on the surface and in the initial humus layer.

In connection with this work, a brief reconnaissance was made off the Point Pleasant Pumping station property to locate Henry Mercer's site noted above. We believe that we found it c. 350' to the southeast of the line of the proposed pipe line. A rise similar in its relative position and general configuration^{to Mercer's site} was found under heavy growth and adjacent to a modern garbage dump. No artifacts were found on the surface. More detailed examination of this site was frustrated by the dense growth and the garbage.

In sum, the majority of the cultural material uncovered in the immediate impact area of the proposed construction would seem to date to the 20th century; the only features suggesting a period of earlier occupation are the Pennsylvania Canal

and the one possible flake of chert (?) located in Op. 1B.

Combined Transmission Main

After leaving the area of the proposed Point Pleasant facilities the pipe line climbs rapidly up a high bluff. We followed the pipe line on foot across River Road and over the very rocky terrain which continues to the foot of this sheer rise. At this point we left the pipe line and rejoined it on top of this cliff. The course of projected construction along this main is largely across unoccupied terrain with few natural or cultural features to serve as a guide in locating oneself "on the ground". As a result, much use was made of a hand-held Brunton compass here to ensure that we stayed on the line of the projected main.

The first portion of this main, from the pumping facilities to the foot of the sheer rise, is through well-spaced woodland with the ground cover being fallen leaves. Projecting up through these leaves were large masses of rocks, apparently a continuation toward the cliff of the dense concentration of stones noted in the test pit, Op. 1B. Above the rise the land levels off and the predominant vegetation from here to the junction of the main with the Danboro-Point Pleasant Pike (L.R. 920) consists of high, dense grass growing in now-abandoned corn fields interspersed with sections of well-spaced woodlands, where the ground cover was primarily of fallen leaves. Flowing across this area, particularly in the section between Tollgate and Pipersville Roads, are a number of shallow, small streams whose relatively linear appearance and consistent

northwest-southeast orientation might suggest that they represent either canals or canalized natural watercourses. Because of the nature of the ground cover, periodic clearing as well as walking was necessary to view the ground surface. From the Danboro-Point Pleasant Pike to the Bradshaw Reservoir the vegetation consists mostly of low, dense grass with one section of very high dense grass located c. 1/2 way between the road and the reservoir and comprising c. 1/4 of that distance. All of the area of low grass was walked as was c. 1/3 of the high grass.

Over the total length of the main no signs of aboriginal activity were encountered and only one possible historic feature was found. The latter was located c. 550° east of Tollgate Road and consisted of an oval, deep depression, possibly an artificially constructed pond, and the remains of what might have been a formal garden in the vicinity of this depression. While the area was examined on foot, no sign of a structure was noted and the size and condition of the ornamental shrubs would seem to suggest a relatively recent period of use.

In addition to the foot survey, a 1.5m north-south x 1.0 m east-west test excavation was dug near the peak of the ridge overlooking the Delaware River in open woodland (see Figure 5). Half of the pit, designated Op. 3A, was excavated down to 50 cm. while the rest was left at 35-40 cm. No cultural material was found in this excavation.

Two informants from the Point Pleasant area remarked that "Indian" material was only rarely recovered from on top of

the ridge, the majority of all artifacts found in this neighborhood coming from the flat lands bordering the Delaware River. Unfortunately, neither of these informants could specify where such materials were usually found.

North Branch Transmission Main

The first c. 1/3 of this section travelling west from the Bradshaw Reservoir was planted in beans with the ground cleared between the rows. The rest of the proposed pipe line was in medium to medium-high grass growing in presently abandoned corn fields. As before, periodic clearing away of the grass with the machete was necessary to see the ground. No signs of aboriginal or historic occupation were noted on the surface of the primary impact area.

Because of the report of finds of aboriginal material near the north bank of the North Branch of Neshaminy Creek a series of 4 shovel tests, spaced approximately one every 100', were dug over the last c. 400-450' of the proposed line of the main where it approaches the creek. The area in which these excavations took place was covered by a very dense grass, apparently part of an old cattle pasture. The shovel tests (designated Ops. 8A-D) were dug down to an approximate depth of 30 cm over an area of roughly 40 x 20 cm. The excavations revealed the presence of a level of dark brown silty humus overlying a slightly lighter, more clayey soil at a depth of c. 20-25 cm. No cultural materials were found.

One informant, a Mrs. Jeanne Morwald, reported finding "wagon wheels" and an "old gun" when cleaning a shallow

drainage which bounds her land on the west, c. 1200-1300' east of the junction of Bradshaw and Durham Roads. While Mrs. Morwald did not specify the area exactly from which these materials were recovered, she seemed to indicate that that they came from the general vicinity of where this drainage junctions with Bradshaw road, north of the proposed transmission right of way. This historic material may be associated with the house and outbuildings located on the corner of Bradshaw and Durham Roads which are presently listed on the Inventory of Historic Sites in Bucks County (property number 34-15-40). This was the only historical or aboriginal material Mrs Morwald knew of from this area.

Bradshaw Reservoir

The vegetation cover in the area of this proposed construction consists of fields planted in high corn encompassing, approximately, the northwestern quarter of the area; an area of closely spaced pine trees surrounded by very dense undergrowth covering the southern $1/3-1/2$ of the construction site; and the remainder is taken up with well-spaced open woodland with a ground cover of fallen leaves. Two possibly man-made ponds were located in the northeastern $1/4$ of the site. The cornfield and open woodland were walked completely. A line heading first southeast-northwest and then shifting to southwest-northeast was cut through the area of densest undergrowth. A more thorough examination of this area was precluded at this time by the almost impenetrable nature of the ground cover. In general, no surface evidence of historic or aboriginal occupation was noted in this area.

In addition to this walking survey, a 1.5m x 1.5m test pit (designated Op. 2A) was excavated in the open woodland at the approximate center of the proposed reservoir (see Figure 6). The sides of this excavation were oriented with respect to the cardinal directions. Half of this pit was taken down to 50 cm. while the rest was left at 35-40 cm. No cultural materials were found.

Perkiomen Transmission Main

This section comprises, by far, the longest single distance covered by any of the transmission mains surveyed. In general, plowed cornfields and open woodlands predominated

in terms of vegetation cover, with a much lower percentage of land covered in medium to medium-high grass as compared to either the Combined or North Branch Transmission Mains. Because this water main abuts for the vast majority of its total distance the clearly marked route of the pre-existing Texas and Eastern gas line, locating ourselves on the ground was relatively easy. The only area presenting any difficulty along these lines was the last c. 1.1 - 1.4 miles where the proposed line of the Perkiomen Main diverges from that of the Texas and Eastern before entering the Perkiomen Creek. Along this latter route we relied heavily on the use of the hand-held brunton compass to determine the route of survey.

Beginning at the Bradshaw Reservoir, the land between Bradshaw Road and the south branch of Gaddes Run is fairly level and planted in beans with the ground visible between the rows. One piece of white china was found c. 80 m west of the road, and several pieces of glass were located c. 13m from the road. The glass appeared to be of fairly recent date and was not collected. The piece of china appeared to date from the late 19th century at the earliest and was collected. The land slopes gradually down to the area of the south branch of Gaddes Run where the ground cover is high grass and reeds. This area is presently quite marshy. As the land begins to rise to the west of this area, long, rectangular plots of high closely spaced corn running roughly north-south are encountered. These plots are separated by slightly narrower strips of low to medium high dense grass. No evidence of historic or prehistoric

occupation was noted in these fields or in the immediate vicinity of Gaddes Run.

A series of six shovel tests (designated Ops. 7A-F) were dug in the grassy strip near the crest of the rise overlooking Gaddes Run on the west. These tests were run in two parallel lines, c. 30' apart and spaced at c. 30' intervals across the proposed right of way. In general, the topsoil here consisted of a dark brown earth containing a few stones and changing at c. 25 cm. in depth, to a more yellow, clayey soil. The shovel tests, again, were dug to an approximate depth of 30 cm. over an area of roughly 40 x 20 cm. All were sterile of cultural materials.

Approximately 200' northeast of the proposed right of way, c. 1/2 to 2/3 the way up the slope west of the south branch of Gaddes Run there appears to be the shell of an old barn built of wood and stone. While we have yet to locate this structure on the Inventory of Historic Sites in Bucks County and it does appear to have fallen into disuse, it still might be of sufficient age to qualify for the Register.

Continuing westward, we crossed Durham Road and passed for c. 800-1,000' through several fields planted in high corn separated by narrower strips of low to medium-high dense grass. No cultural materials were found in this area. This finding was further substantiated by the owner's son who plows these fields. He stated that, while he does hunt for "Indian" artifacts as a hobby, he has never found any on his own land.

After leaving the cornfields the ground slopes down fairly

rapidly to the north branch of Gaddes Run. Here the right of way runs principally through open woodland with a thin ground covering of leaves. The only potential cultural feature noted was a long, linear pile of earth and rocks located c. 30' north of the Texas and Eastern right of way. No other cultural features were noted in the area and this pile may represent detritus left over from the construction of the Texas and Eastern gas line.

The north branch of the Gaddes Run is narrow and shallow though it was carrying flowing water at the time crossed it. The bed was well-defined and contained the usual plated, shale-like rocks which are found in so many streams and on so many fields throughout this area.

Ascending the rise west of this branch of Gaddes Run the vegetation cover changes to low to medium-high grass. Considerable bulldozing activity is taking place in this area, from Gaddes Run to within c. 400' of Stump Road. A large pit, c. 50' in diameter and 10' deep, has been dug out immediately west of Gaddes Run and seems to be in the area of the proposed Perkiomen right of way. In addition to this excavation, numerous roads have, in some cases, been dug down c. 6"-1'6" below ground level and, in others, have been raised above that surface an equal height by the deposition of backdirt. In several cases these "roads" cross or run close to the proposed right of way. We walked the edges of the large pit - ongoing bulldozing forbade a closer examination - and along several of the "roads" as well as across country. The soil here seems to consist of a reddish-

orange fine clay with gray mottling and containing, at least in its upper levels, a high proportion of the ubiquitous plated, shale-like rocks. No cultural materials were noted.

The last c. 400' to Stump Road were covered in low, recently mown grass.

The section from Stump Road to U. S. Route 611 was primarily through open woodland with ground cover consisting of fallen leaves giving way in sections to dense bramble. The last c. 1/3 of this distance is through medium-low dense grass with fairly good visibility. The land itself tends to be uneven and somewhat swampy, a low marsh or creek being encountered in high grass immediately west of Stump Road. This wet area may represent the far southwest end of a Cabin Run tributary.

Two potential historical features were noted in this section. The remains of what seems to have been an old field wall made of dry-laid, rectangular, unfaced stones was located. The wall presently stands, at its highest point, c. 78 cm., though, for the most part, it is merely a line of stones barely visible beneath the fallen leaves. The stones appear to be the plated, shale-like stones seen quite commonly in this area and to be roughly coursed and packed around with chinking stones. This wall was c. 40-50 cm. thick, oriented N40 0°W, and extended c. 70-80' into the woods north from the Texas and Eastern line before it was lost in the dense undergrowth.

Approximately 25' west of this wall and c. 80' north of Texas and Eastern right of way a now abandoned well was found.

The well opening was c. 1.3-1.4 m. in diameter and was, in turn, surrounded by a large depression, c. 3.2 m. in diameter. Construction was difficult to determine as the feature was largely filled-in and capped by a large flat stone. Apparently the well was lined with the same type of stones used in the aforementioned wall, though we could not determine in what sort of matrix these stones had been laid.

Both of these features were located on the map by pacing along a known compass azimuth, first to the west toward U.S. Route 611 and, later, to the east to Stump Road. The result is that these features seem to be situated at the junction between properties 34-4-14 and an unnumbered property, c. 1850' east of U. S. Route 611 and approximately the same distance west of Stump Road. No artifacts or other standing features were noted in this area.

The small section between U.S. Route 611 and Applebutter Road is densely overgrown and appears to have been heavily disturbed, with much rock rubble presently covering the area.

After crossing Applebutter Road the land slopes gradually down to the southern branch of Cabin Run, a shallow, narrow stream carrying, at the time of investigation, running water. Ground cover between Applebutter Road and this branch of Cabin Run consisted of low, dense grass and widely spaced trees. Piles of loose rock and earth were noted adjacent to the southeast bank of the creek. These appeared to be the result of fairly recent excavations carried out somewhere in the area.

Heading WNW from this branch of Cabin Run, ground rises

rapidly before levelling off. The ground cover changes to fields planted in high corn. In these fields, a fragment of china and a fragment of glazed pottery were found. After travelling for c. 475-500' over this land, vegetation conditions change to open woodlands interspersed with small fields of low, dense grass. The land is fairly level over this distance, gradually sloping down in the immediate area of the north branch of Cabin Run. No artifacts or features were noted over this latter distance. Immediately WNW of this branch, the ground again rises and is planted in high, densely spaced corn, continuing up to the edge of Scott Road. Again, no artifacts or features were noted.

Two informants, a Mr. Leatherman, the owner, apparently, of property 1-12-16 between Applebutter and Scott Roads, and his son reported that a few arrowheads were found on their property "back up towards the woods" c. 20-30 years ago. None have been reported found since then.

Because of this report and because the land in between the two branches of Cabin Run seemed a likely spot for aboriginal habitation, a 1.5 m. north-south x 1.0m east-west pit was placed in an open portion of Mr. Leatherman's cornfield on a relatively level piece of land between the two branches of Cabin Run (see Figure 7). The excavation, (designated Op. 5A), was located c. 350-360' ESE of the present line of the woods. The only material found was 1 fragment of bone found on the surface of the pit and 2 recovered from the interface between soil levels A and B (see Table 2 for a more detailed description of these remains.) In addition, 8 shovel tests were also

carried out (Ops. 5B-I). Op 5B was situated c. 2 m west of Op. 5A and was dug to determine if a continuation of bone in this direction might be noted - sterile; 5C was c. 6m northwest of Op. 5A - sterile; 5D was c. 70m WNW toward the woods from Op. 5A - 1 piece of bone was found, again, at the A/B interface (see Table 2); Op. 5E was WNW of Op. 5A along the proposed right of way, c. 10m ESE of the woods - sterile; 5F was c. 100m WNW of Op. 5A - sterile; Op. 5G was c. 45m WNW of Op. 5A - sterile. All of these shovel tests were excavated to a depth of c. 30-35cm. over an area of. c. 60 x 40 cm. and revealed the same change in soils from the A to B levels noted in Op. 5A at a depth of approximately 20-35 cm. below ground surface.

Ops. 5H and 5I were excavated on the southeast and northwest sides of the south branch of Cabin Run respectively, and were situated c. 2-3 m back from the edge of the stream. Both showed a topsoil of reddish-brown earth overlying overlying to a depth of c. 25 cm. a very rocky lower level. Examination of the stream banks also showed a 50 cm. thick level of similar soil overlying a layer of red rocks with a layered, plate-like structure.

The section between Scott and Deep Run Roads runs through equal portions of fairly open woodland and medium-low dense grass. The ground is relatively level, from Scott to Keller's Church Road though it drops off fairly rapidly after crossing that thoroughfare down to the level of several small streams which appear to be minor tributaries of Deep Run Creek.

Approximately 100-150' west of Deep Run Road the ground begins to rise again, though here the land is densely planted in beans and could not be walked without doing damage to this crop. The edges of this field were examined. The only cultural features noted over this section were two fairly recent trash dumps; one in the woods between Scott and Kellers Church Road and the other in the woods between Keller's Church and Deep Run Roads. The latter contained primarily old construction materials, including bricks, wood and concrete, while the former contained more domestic debris.

Continuing west from Deep Run Road to Creamery Road the ground continues to rise up to a rather high bluff overlooking Deep Run Creek. From the peak of this bluff the ground then drops, gradually at first but much more rapidly later down to the Deep Run. Ground cover, after the initial short stretch of open woodland near Deep Run Road, is primarily in low to medium-high grass necessitating some clearing while walking. The branch of Deep Run on the east side of Irish Meeting House Road is rather small and shallow, while that branch on the west side was rather broader, deeper and difficult to cross. In the area between Deep Run and Irish Meeting House Roads several linear, raised lines of earth and stone were noted, perhaps representing old boundary lines. No other evidence suggestive of earlier habitation was here recorded.

A test excavation (designated Op. 4A), measuring 1.5m north-south by 1.0m east-west was excavated on the proposed right of way near the peak of the ridge overlooking Deep Run

on the east. Again, no cultural materials were found here. The very rocky nature of the soil and the high water table discouraged us from continuing excavations in this area (see Figure 6).

Moving west of Creamery Road, the ground again rises gradually from Deep Run Creek. The ground cover between Creamery and Bedminster roads is predominantly low, dense grass interspersed with fields planted in high corn and a section of medium-high dense grass bordering an unnamed dirt road near Bedminster Road. No artifacts or features were noted over this area. An informant noted at a family who lived in the house located just north of the point where the proposed right of way crosses Bedminster Road, on the west side of that road, once possessed a collection of Indian materials. This family, however, has since moved away and our informant was unable to tell us whether these materials were collected in the immediate area and if so, where and when.

Walking WNW from Bedminster Road to the Perkiomen Creek, the vegetation first encountered was medium-high dense grass covering c. 750-800' of the route examined. This ground cover then gave way to a short section of open woodland which in turn was succeeded by a field planted in high corn. This corn, belonging to a Mr. Wagner, was high but fairly widely spaced out, making observation of the ground fairly easy. One glazed pottery sherd, 2 pieces of china, several pieces of burned clay and several fragments of what appears to have been a skeet shoot target were found in this field. Non of the

pottery was aboriginal in manufacture and all would seem to date no later than the late 19th century. No concentration of this material was noted. The cornfield was replaced along the line of the right of way by recently cut fields of low, dense grass which continued the remaining distance to the Perkiomen Creek. North of Center School Road, on the slope between the Perkiomen Creek and the last plateau or flat space above that creek, 1 fragment of brick, 1 fragment of baked clay and 1 shell were found on the surface (see Table 2). Again, this material was scattered and not concentrated.

The land here generally slopes down to the WNW in the direction of the Perkiomen Creek. This slope is rather gradual and is broken at several points by flat shelves of varying widths.

A 1.5m north-south x 1.0m east-west test pit (designated Op. 6A) was placed c. 25m ESE of Center School Road on one of these shelves overlooking the Perkiomen. We had originally hoped to excavate WNW of Center School Road at a point slightly closer to this watercourse, but we were unable to obtain permission. The pit revealed a red-brown, fine textured topsoil level c. 10-15 cm. thick overlying a level of nearly solid rock fragments. These were the familiar plated shale-like stones noted elsewhere, and they ranged in size from 20 x 40 cm. to 10 x 10 cm. These rocks proved too dense to dig through and this work was terminated when we reached a depth of c. 40cm. below ground surface in the southeast quadrant of the pit.

24

Two shovel tests (Ops. 6b-c) were excavated WNW of Center School Road. Op. 6B was dug 45-50 m WNW of Center School Road on a continuation of the shelf on which Op. 6A was located. . No stones were encountered, only a soil change at c. 25cm. below ground surface, from the red-brown fine, clayey upper level to a yellow-tan clayey soil - sterile. Op 6C was located at the approximate edge of of the shelf overlooking the Perkiomen, c. 70-75m WNW of the road. The results were the same as in Op. 6B, though the soil change occurred at c. 20 cm. below ground surface. Both shovel tests were c. 30 x 45 cm. in area and c. 30cm. deep.

Mr Morgan, the owner of the land on which we dug, had several pieces of information to relate. First, he remembered finding a few "arrowheads" on his land when plowing c. 10-15 years ago (now lost), though none have been found here recently. Second, he remembered being told by his older relatives that there was once a small town in the area called Jacobst wn, consisting of 3-4 houses and connected to Bedminster Pike by a trail. He also remembered having seen the remains of this settlement c. 20-25 years ago at which time foundations and some walls were still visible. In recent years, however, he has returned to this area and claims that nothing is visible on the surface. Mr. Morgan specified the location of this village as north of the proposed right of way on property 1-12-86 on the tax maps. Third, Mr. Morgan's uncle reported to Mr. Morgan some years ago that he had found quantities of "Indian" material near the junction of Center School and Elephant Roads.

No idea of the quantity or nature of this material was provided by Mr. Morgan, nor did he indicate at what time in the past his uncle made this discovery. In no case did we see any evidence of these reported features along the line of the proposed right of way.

EVALUATION

Point Pleasant, Combined and North Branch Transmission Mains

Sites in these areas which have already been included in the National Register are set out above and consist of certain buildings and the Pennsylvania Canal. In our opinion, only one other entity qualifies for inclusion in the registry under the criteria listed in the Procedures for the Protection of Historic and Cultural Properties..., section 800.10. This entity, which comprises a quarrying area, "blade factory" and an Indian habitation site called Lower Black Eddy site, is described above and was originally reported by Dr. Henry Mercer. The cluster is not in the project's direct impact area, but is in the indirect impact area; this is especially true of the habitation site.

We feel that this site cluster meets the registration criteria for such remains. The habitation site is a 2 component stratified site, with the upper level representing the historically known Lenni-Lenape (Witthoft 1950), and the lower a possible Early Woodland period of occupation, which is relatively rare to uncover in Pennsylvania (Witthoft 1965). The cluster of sites, taken together, is potentially informative on the topic of the manufacture and distribution of stone tools. Finally, the cluster is associated with Dr. Henry Mercer, an important figure in the history of Pennsylvania archaeology, and presents an instance of his recognition of the importance of workshop sites and the significance of cultural stratigraphy in archaeological sites.

In conclusion, we believe that the cluster of sites in the vicinity of the Point Pleasant Pumping Station qualifies for inclusion in the National Register, but that no other entities in the Point Pleasant, Combined and North Branch Transmission Main areas not already included warrant nomination.

Point Pleasant

EFFECTS

Direct effects of the proposed project will be felt in the Pennsylvania Canal due to the construction of the intake facility and pumping station on properties flanking the canal and the laying of a pipe line across the canal itself. The first two constructions would probably only effect the tow path areas, but the pipe line requires major disruption of the canal, including diversion of water and destruction of the canal walls and basal seal.

Indirect effects would include the alteration of the setting and environment of this landmark by introducing modern buildings machinery, access roads; and by the utilization of properties flanking the canal for non-residential and non-recreational purposes which may be out of character with the canal's normal uses..

Outside of the direct impact area of the Point Pleasant facility, but within the indirect impact area, are Mercer's sites, especially the Lower Black Eddy habitation locus. The presence of more people in the area would increase the likelihood

of disruption and vandalism, and any carelessness in the disposition of construction vehicles or materials could destroy this small but potentially important site.

The Combined Main offers no problems in terms of direct or indirect effects on significant properties. The North Branch, however, is an area where prehistoric remains have been sporadically found. Although no specific sites were located in this survey, aboriginal remains may be encountered during excavation. These would most likely consist of isolated artifacts, but the possibility of a small camp site should not be ruled out. Additionally, the historic house on parcel 3-15-40 would be indirectly effected by by construction, in particular of the energy disapator, in that such modern construction would alter the property's environment and setting, isolate it from its natural setting by the Neshaminy Creek and introduce out-of-character elements.

RECOMMENDATIONS

It is our opinion that the proposed facilities at Point Pleasant, which would have a profound effect on the Pennsylvania Canal, could proceed under a recommendation of no adverse effects with conditions. These conditions are the following:

- 1.) That an archaeologist be retained for the entire period of excavation, ~~construction and reconstruction~~ for the intake, pumping facilities and pipe line.
- 2.) That the archaeologist work closely with the supervising engineer during construction activity and assist with reconstruction.

- 3.) That the archaeologist have responsibility for monitoring the proposed work and recording features of archaeological and historic interest, with particular attention to the construction techniques used in the original canal construction, the possibility of prehistoric remains between the Pennsylvania Canal and the Delaware River, and the wall on the pumping station land.
- 4.) That the archaeologist be given the power to temporarily halt construction in order to record features or carry out small-scale archaeological excavations to clarify or salvage features. *CUT*
- 5.) That the engineer and construction crew render all assistance to the archaeologist when needed in recording and excavation.
- 6.) That the analysis of any material found be carried out by the archaeologist.
- 7.) That all materials found be donated to a suitable institution such as the State Museum or the Canal Museum near Easton, Pennsylvania.
- 8.) That reconstruction be aimed towards restoring the historic integrity of the canal, that is, that the walls be reset to conform with original techniques wherever possible and that the finished walls be in harmony with the original appearance of the canal and the flanking locks #13 and #14, and that the reconstruction be carried out for the entire length of the canal in the possession of the Neshaminy Water Resources Authority/Neshaminy Water Authority.
- 9.) That the intake facility and pumping station be designed, built, landscaped and so forth to be in compliance with the historic nature of the canal and age and general character of the Point Pleasant area - namely that it be as inconspicuous, quiet and hidden as possible.

Indirect effects of the project on the town of Point Pleasant would also be lessened by careful attention to the final appearance of the facilities. Direct or indirect effects on the Lower Black Eddy site could be mitigated by limiting both access to the property and accidental overflow from *construction activity*

Authority-owned land, by means of a fence or other restricting device. Care should be taken that the site not be disturbed by people or equipment; nor should the curious be permitted access to other components of Mercer's cluster.

Again, the Combined Main seems to present no difficulties. With respect to the North Branch Main an archaeologist should be employed to thoroughly survey the banks of the Neshaminy in the North Branch area, and to test excavate at several places along the pipe line. The purposes of this work would be to assess the extent of historic and prehistoric remains, and to evaluate more fully reports of prehistoric materials. This course of action would determine whether or not an archaeologist need be retained during construction. It must be pointed out that such a survey should take place when ground cover is minimal, and prior to planting but after plowing, to maximize visibility.

OUT

Indirect effects on the historic property 34-15-40 will be mitigated by attention to the aesthetics of the dissipator installation. In general, because of the interest in Bucks county in historic preservation, the aesthetics of all installations are crucial. Facilities should minimize visual and auditory disruption, and alter the character of the neighborhood as little as possible.

EVALUATION

Bradshaw Reservoir and the Perkiomen Transmission Main

Nothing in the Bradshaw Reservoir area is eligible for nomination to the Register, nor, to the best of our knowledge, in the Perkiomen main area between Bradshaw Reservoir and the well and wall noted earlier. In addition to the well noted, the area from Cabin Run to the Perkiomen is already an historic district.

EFFECTS

No properties in the Bradshaw Reservoir or the Perkiomen Main will be directly effected by the proposed construction, with the possible exception of the aforementioned wall and well. At present, the pipe line is planned to pass directly through the immediate vicinity of these features. As mentioned, the area from Cabin Run to the Perkiomen is an historic district, and the potential for direct adverse effects does exist. Indirect effects could be felt in the area of Jacobstown, a now defunct town discussed above. The limits of this town are not known nor is its state of preservation. The historic district of Bedminster is, therefore, a sensitive area for both historic and prehistoric sites. The several reports we received of Indian materials having been found in this area also suggests that small camps not located in our survey could be present in the vicinity of this proposed line.

RECOMMENDATIONS

No recommendations need be advanced for the Bradshaw Reservoir area or that portion of the Perkiomen Main lying between the Reservoir and the wall and well. For the area of the wall and well we recommend that an archaeologist be present when the ground is cleared in this area to determine if other structures are associated with these features and when excavation takes place. As before, the archaeologist should have the power to temporarily halt construction to record features and/or to carry out limited salvage excavations; should receive the full cooperation and help of the supervising engineer and crew; and should analyse all materials found himself and subsequently donate them to the appropriate institution.

For the part of the Main falling in the historic district from Cabin Run to the Perkiomen several recommendations are necessary. First, we suggest that an archaeologist be employed to survey the Jacobstown area to supplement the work of Pauline Cassell. His responsibilities would include survey to determine the extent of the site and an assessment of its condition and characteristics. This would determine whether or not the Jacobstown area will be effected directly or indirectly by the proposed pipe line. If the site would be adversely effected the archaeologist should make recommendations for mitigation.

Second, an archaeologist should be retained to work closely with the supervising engineer to monitor excavations

ACTION

for the pipe line in the Cabin Run to Perkiomen area. In the event that remains are found, the discretionary powers and responsibilities of the archaeologist would be similar to those discussed for the Pennsylvania Canal:

- 1.) The archaeologist should monitor construction activity and record any finds.
- 2.) He should be able to temporarily halt work to make field assessments and to excavate and record features.
- 3.) He should analyze any finds and see that they are donated to the appropriate institution.

Possible indirect effects outside the actual construction area would be mitigated by careful attention to restoration of ground cover and by designing inconspicuous outlet facilities on the Perkiomen Creek. The final results of construction should be in keeping with the historic nature of the district; and it should be remembered that the residents of Bucks County are particularly concerned with the historic integrity and appearance of their communities.

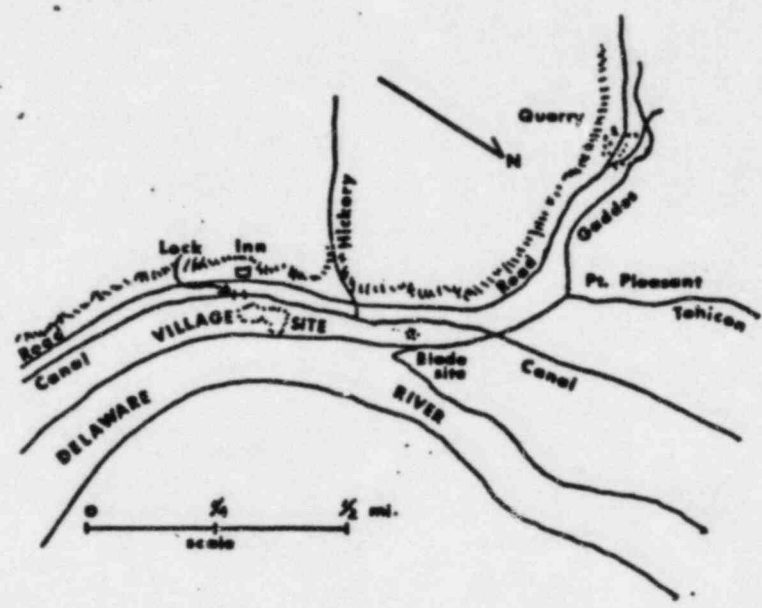


Figure 1 - LOCATION OF PREHISTORIC SITES NEAR POINT PLEASANT PUMPING FACILITY

(after Mercer 1897)

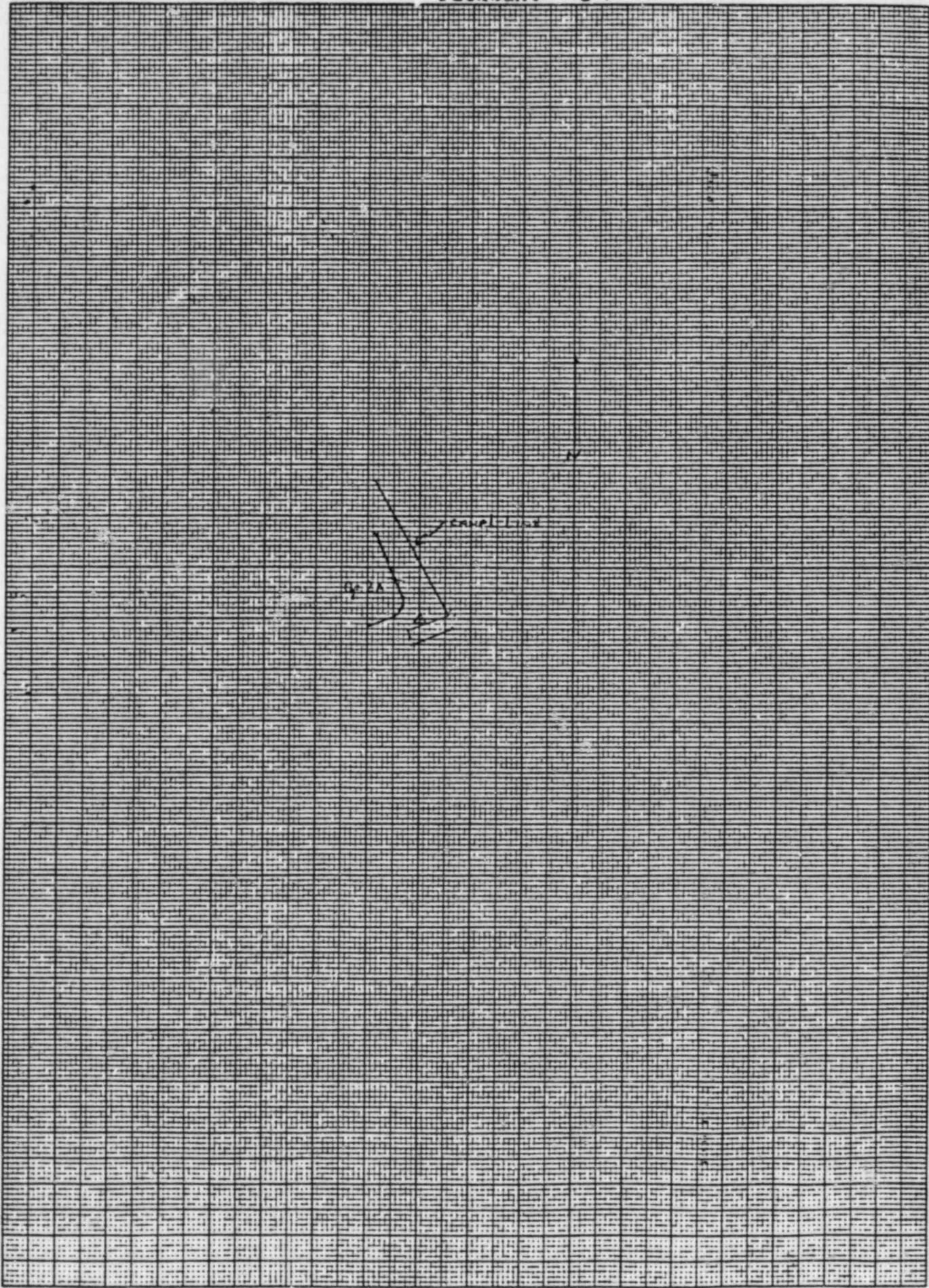


Figure 2 - PREHISTORIC FIND-SITES IN THE VICINITY OF THE PROPOSED PROJECT

(from Rivinus 1965)

NOTE: Mercer (1897) places the "Indian Village" along the Delaware River south of Hickory Creek, not north of it as on this map.

FIGURE 3. Plan of Feature, Op 1A, Point Pleasant Scale 1:1000



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K&E 10 X 10 TO THE CENTIMETER 18 X 25 CM
HEUFFEL & ESSER CO. MADE IN U.S.A.

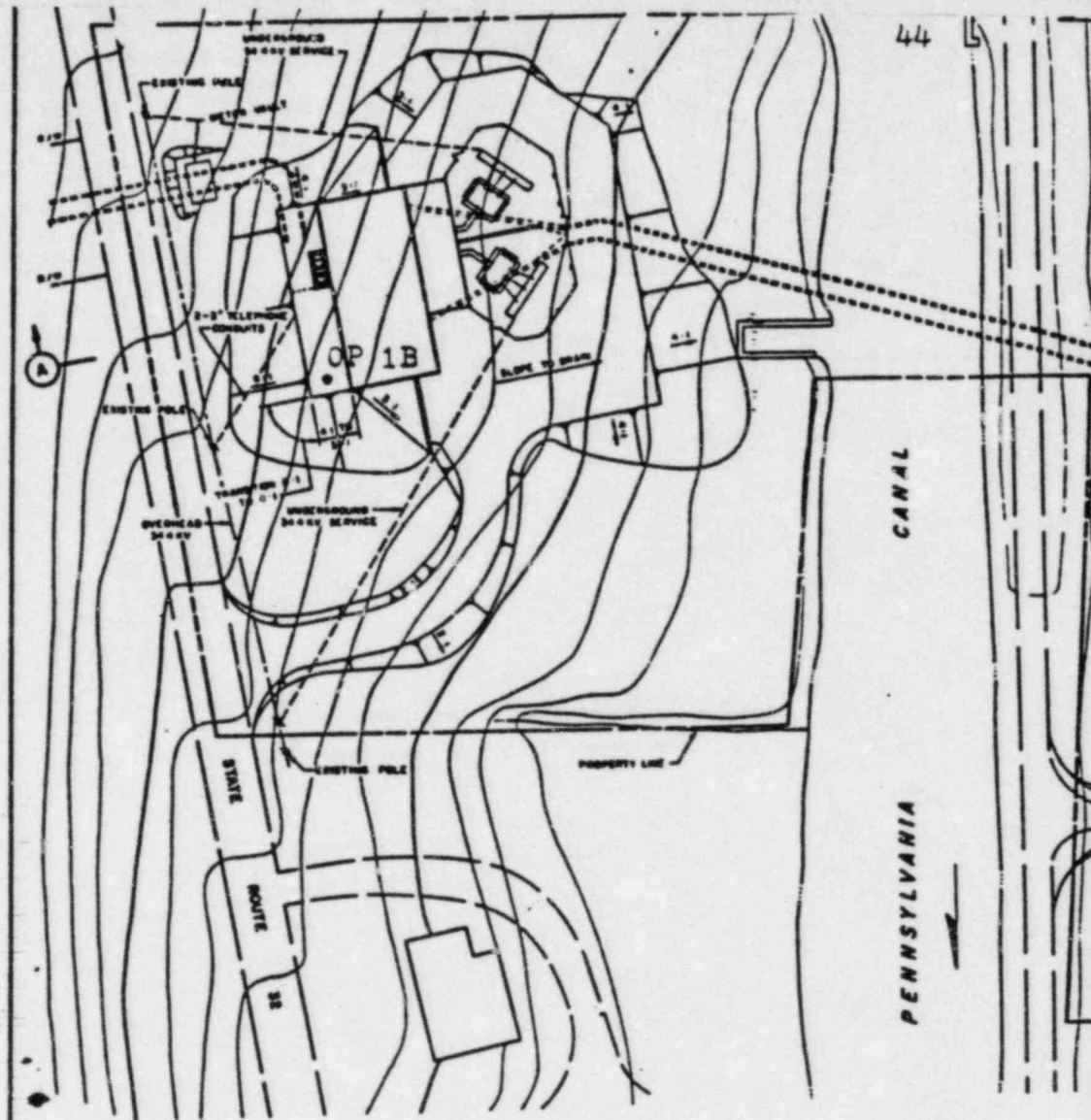
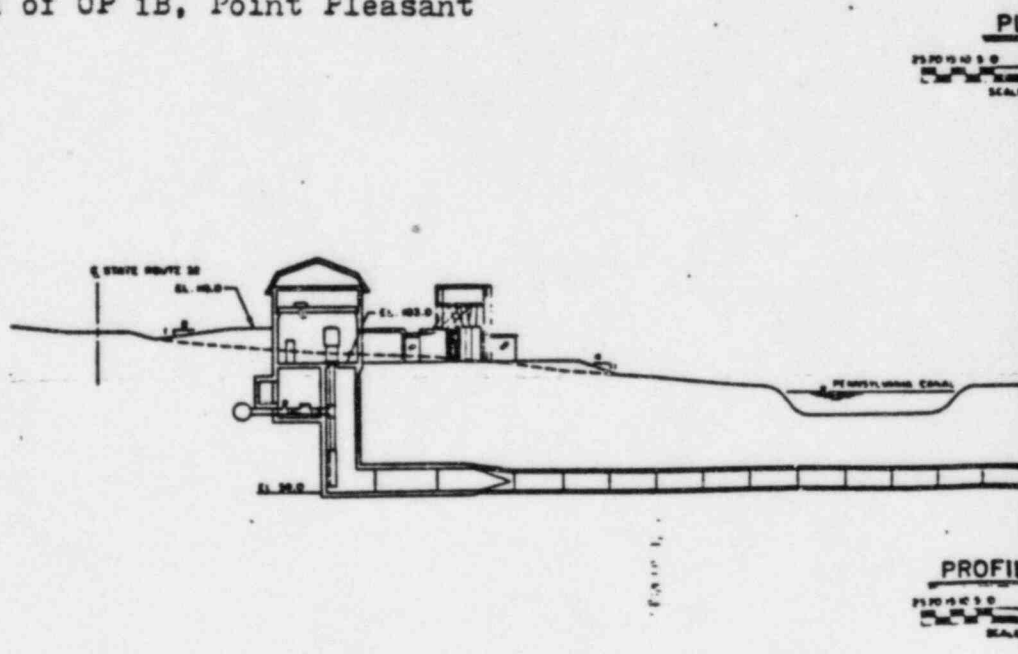


FIGURE 4. Location of OP 1B, Point Pleasant



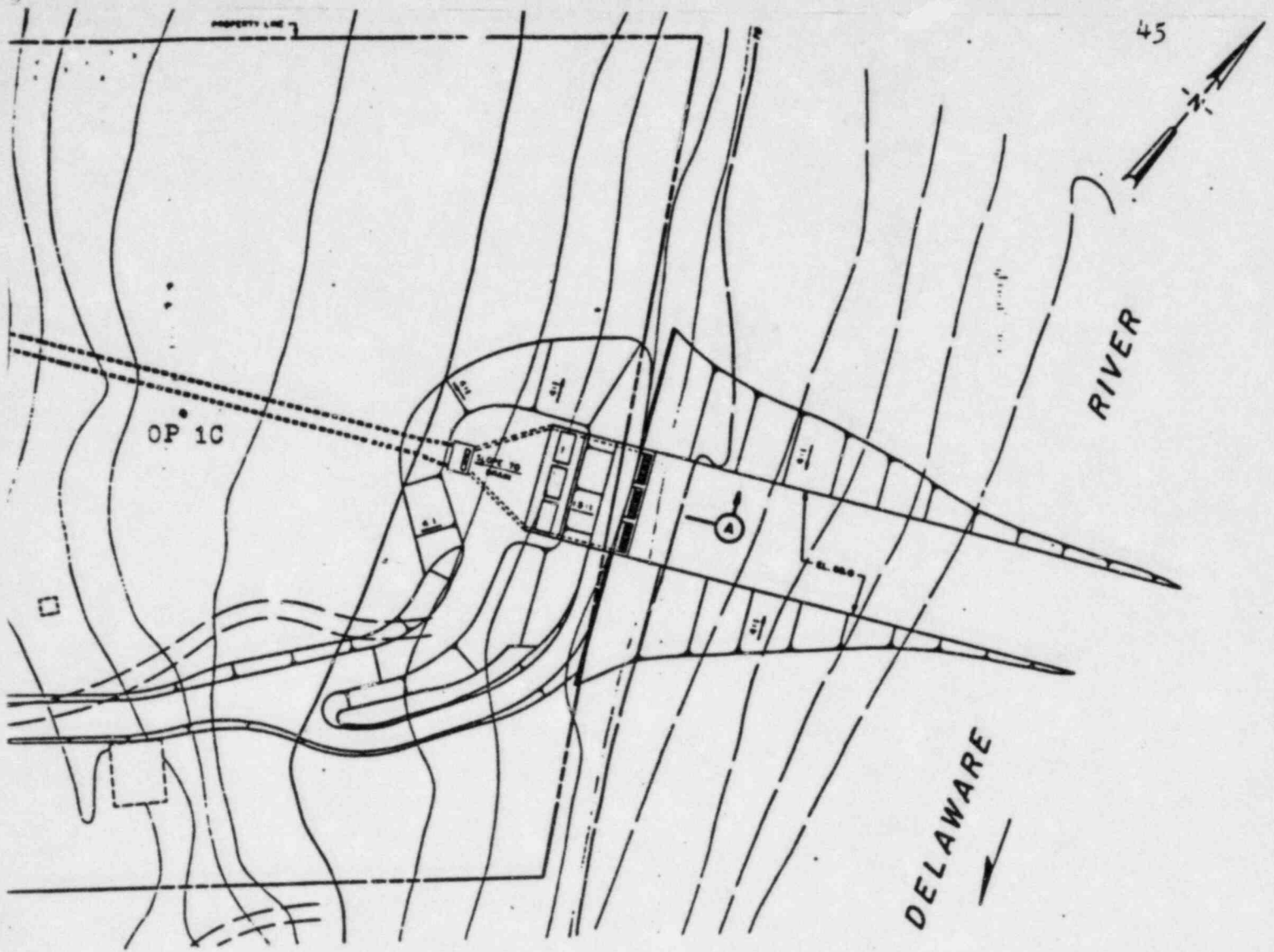
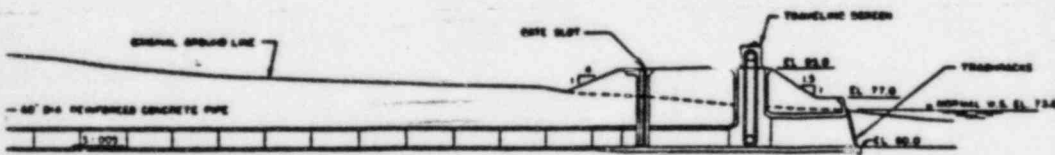


FIGURE 5. Location of OP 1C, Point Pleasant

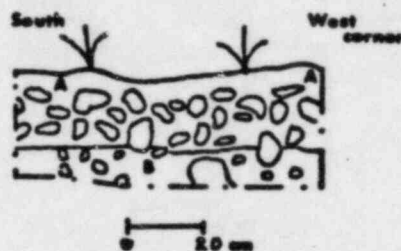
- NOTES
1. INTAKE STRUCTURE TO BE REVISED TO CONFORM WITH LATEST EPA REQUIREMENTS.
 2. ELEVATION OF PUMPING STATION FLOOR TO BE RAISED ABOVE LEVEL OF 100 YEAR FLOOD.



NESHAMINY CREEK WATER RESOURCES DEVELOPMENT PLAN	
POINT PLEASANT PUMPING FACILITIES POINT PLEASANT PUMPING STATION AND INTAKE GENERAL PLAN AND PROFILE	
E. H. BOURQUARD ASSOCIATES, INC. CONSULTING HYDRAULIC ENGINEERS NORFOLK, PENNA.	
DATE: JUNE 1970 SCALE: AS SHOWN	COUNTY OF BUCKS NESHAMINY WATER RESOURCES AUTHORITY
SHEET NO. 07	OF 07

REVISION NO.	DESCRIPTION	BY	DATE

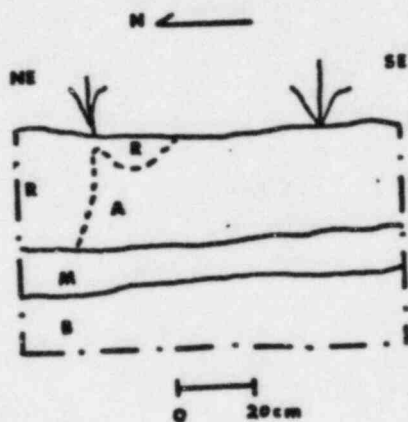
FIGURE 6.

Operation 1B - POINT PLEASANT

KEY:

- A - Dark grey-brown humus; fine-textured; loosely packed among the rocks; many rocks and roots
- B - Orange-yellow, fine-textured, clayey soil; more dense than A, and with slightly fewer rocks; pockets of clay seem to alternate with stone concentrations

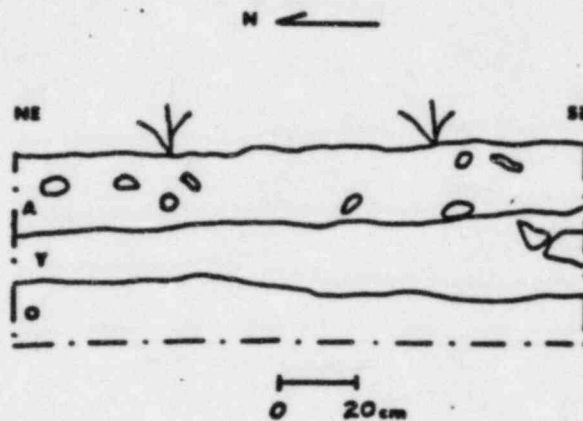
FIGURE 7.

Operation 1C - DELAWARE RIVER/DELAWARE CANAL

KEY:

- A - Dark brown, fine-textured humus, with very many roots
- M - Intermediate level, where A grades into B
- B - Yellow-brown, sandy soil; loosely compacted; few to no roots
- R - Very heavy concentrations of roots

FIGURE 9.

Operation 3A - BLUFF OVERLOOKING DELAWARE**KEY:**

- A - Yellow-brown, soft, fine-textured humus, with many roots and small rocks
- Y - Yellow-tan, fine-grained, clayey soil; well compacted and tough to excavate; a few large roots and a few rocks
- R - mottled red-orange and yellow clay like soil; fine-textured; hard and compacted; breaks along natural boundaries between lumps which have a gray-white or red coating; very few stones or roots, which occur, if at all, near the boundary with level Y

TABLE 1

Finds

Excavation Units Op. 1B-1, level A

Fired clay, unglazed:

9 pieces - light orange in color; no visible temper; c. 3-5 mm. thick; appears to be part of a bowl; date uncertain but definitely post-colonial.

Fired clay, glazed:

2 pieces - white body, white glaze with green decoration near apparent rim; 2mm thick; shape not determinable; modern.

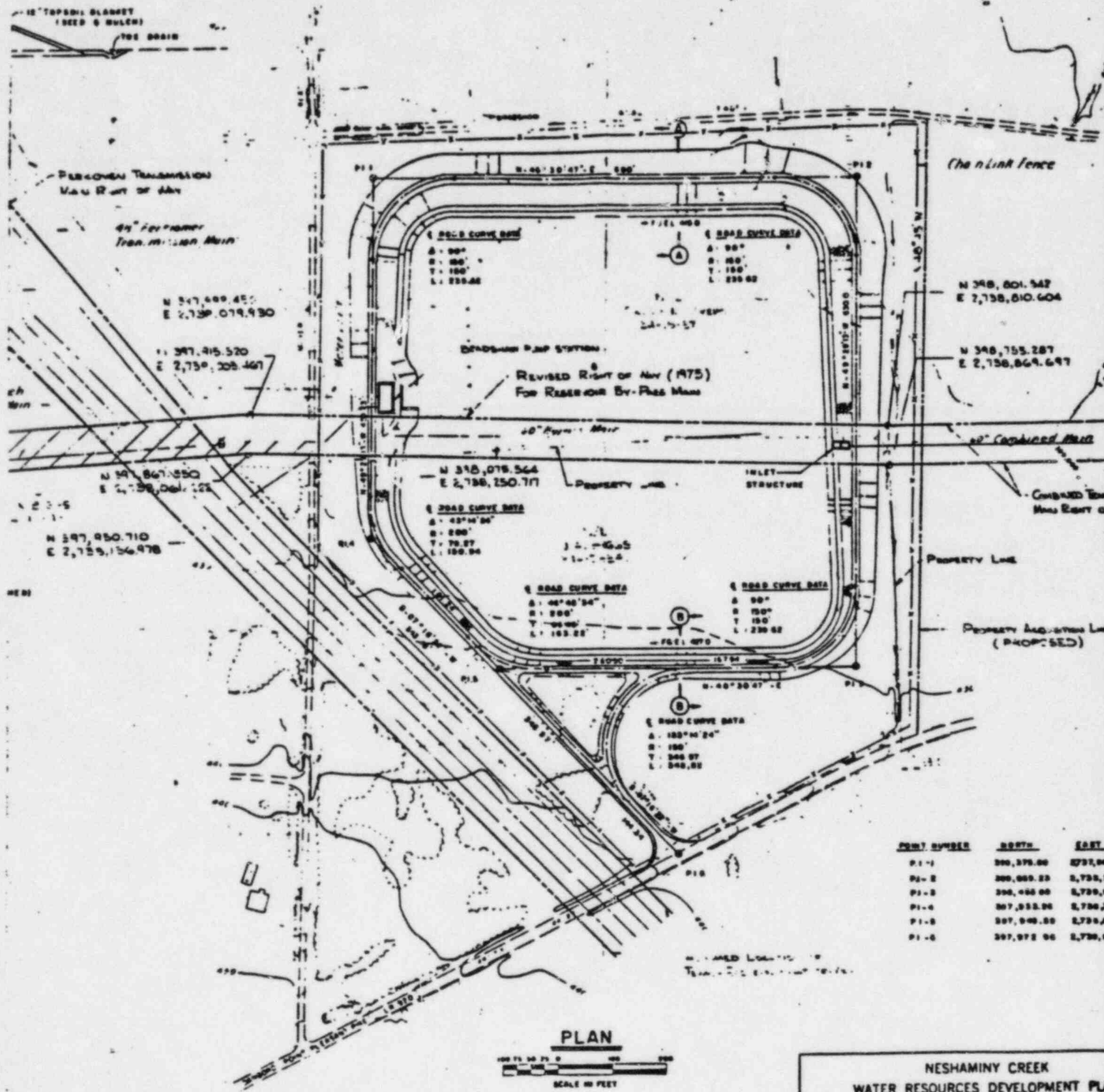
Glass:

1 piece - clear glass with very faint green tint; flat like window glass; undatable.

Stone:

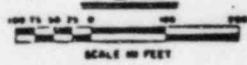
1 piece - orange-brown flake; possibly chert; very small.

FIGURE 10. Location of OP 2A, Bradshaw Reservoir



POINT NUMBER	NORTH	EAST
P1-1	390,379.00	5731.00
P2-2	390,000.00	5,735.00
P3-3	390,432.00	5,739.00
P4-4	397,932.00	5,736.00
P1-5	397,940.00	5,735.00
P1-6	397,972.00	5,736.00

PLAN



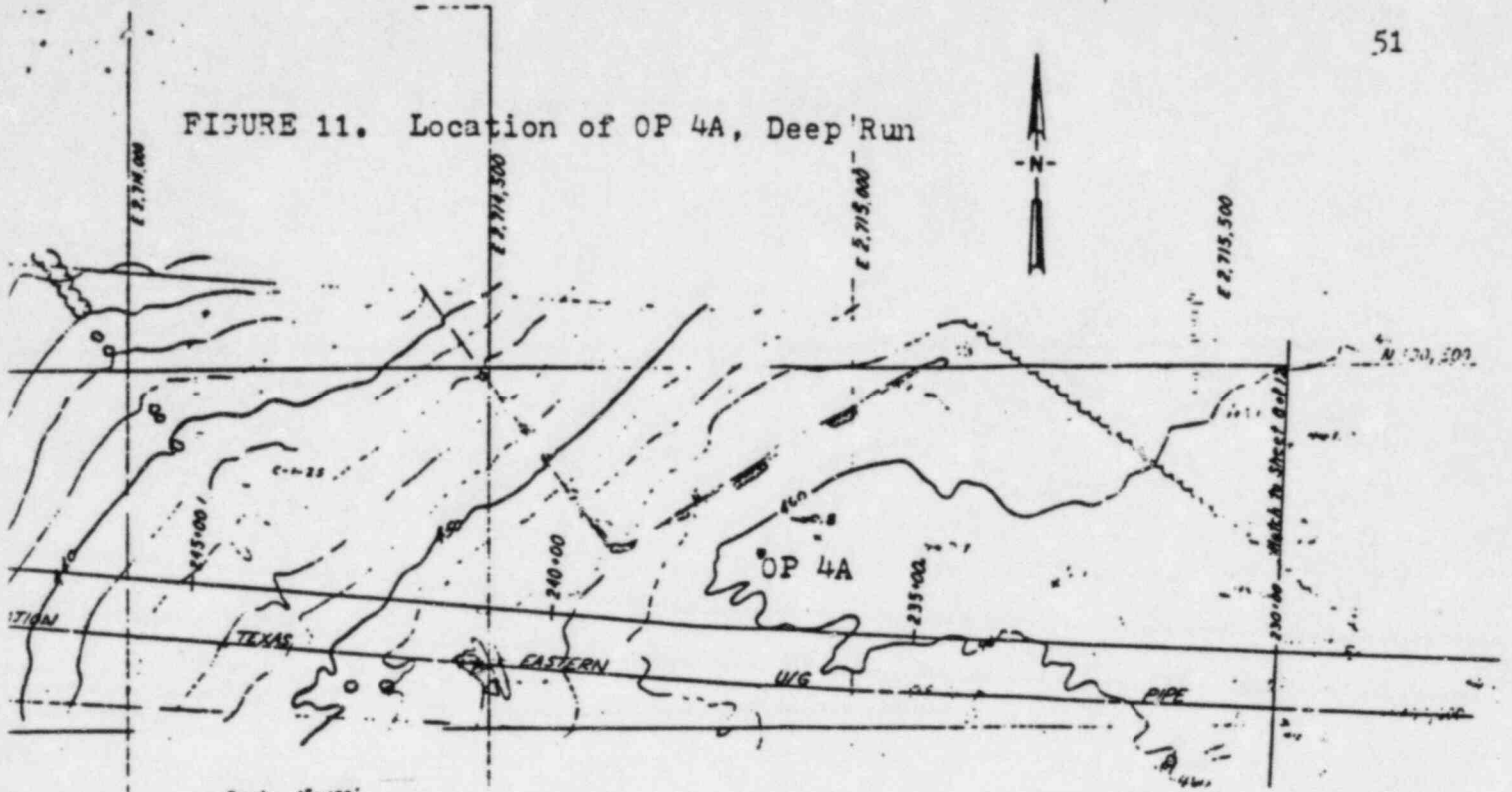
NESHAMINY CREEK
 WATER RESOURCES DEVELOPMENT PLAN
 Point Pleasant Pumping Facilities
 Bradshaw Reservoir and Pump Station
 General Plan

E. H. BOURQUARD ASSOCIATES, INC.
 CONSULTING HYDRAULIC ENGINEERS
 HARTFORD, CONNECTICUT

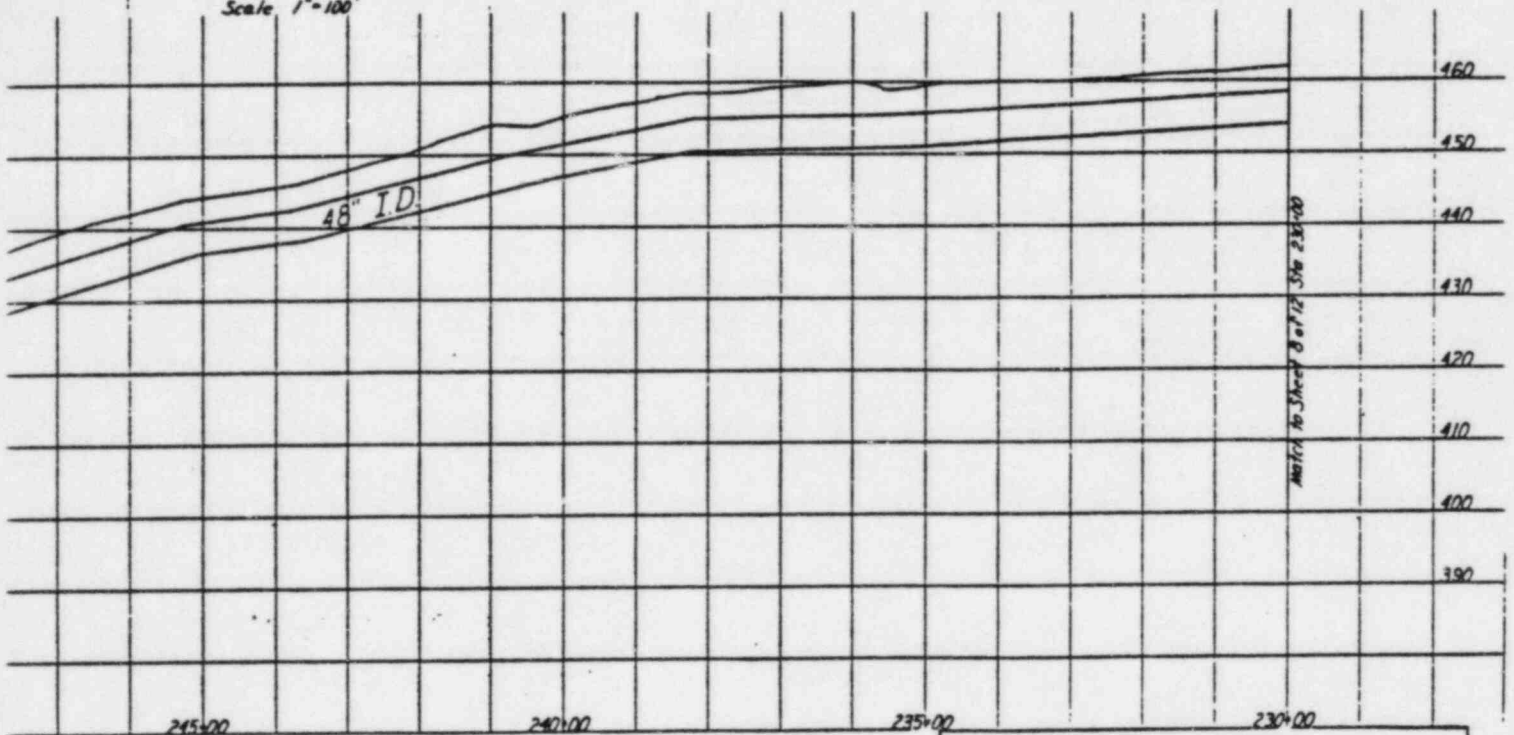
DATE	1-27-75	DATE	1-27-75
BY	E. H.	DATE	11-1-75
DESCRIPTION	Revised Right of Way	DATE	8-2-75
BY	E. H.	DATE	8-2-75

COUNTY OF BUCKS
 NESHAMINY WATER
 RESOURCES AUTHORITY

FIGURE 11. Location of OP 4A, Deep Run

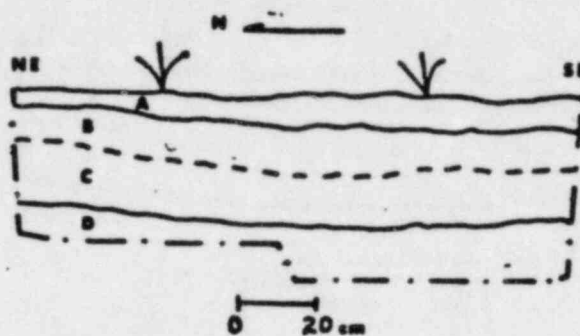


Scale 1"=100'



NESHAMINY CREEK WATER RESOURCES DEVELOPMENT PLAN		
<i>Point Pleasant Pumping Facilities Perkiomen Transmission Main Plan Profile Station 230+00 to 261+00</i>		
E. H. BOURQUARD ASSOCIATES, INC. CONSULTING HYDRAULIC ENGINEERS HARRISBURG, PENNA.		
DATE 2/78 SCALE As Shown	COUNTY OF BUC'S NESHAMINY WATER RESOURCES AUTHORITY	DRAWING NO. SHEET NO. OF

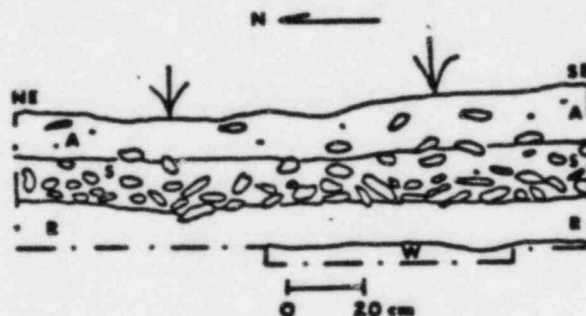
FIGURE 12.

Operation 2A - BRADSHAW RESERVOIR

KEY:

- A - Dry, powdery dark gray-brown humus; very fine-textured; many roots
- B - Yellowish tan fine-grained soil; more densely packed than A, but with fewer roots
- C - Similar to B, but with orange mottling which increases with depth, as does density; a few small roots; the orangish mottles tend to separate along natural boundaries which are coated with a gray-white colored soil
- D - orange to rust colored, fine-textured soil; densely packed; a few fine roots; breaks into lumps which have gray-white coating

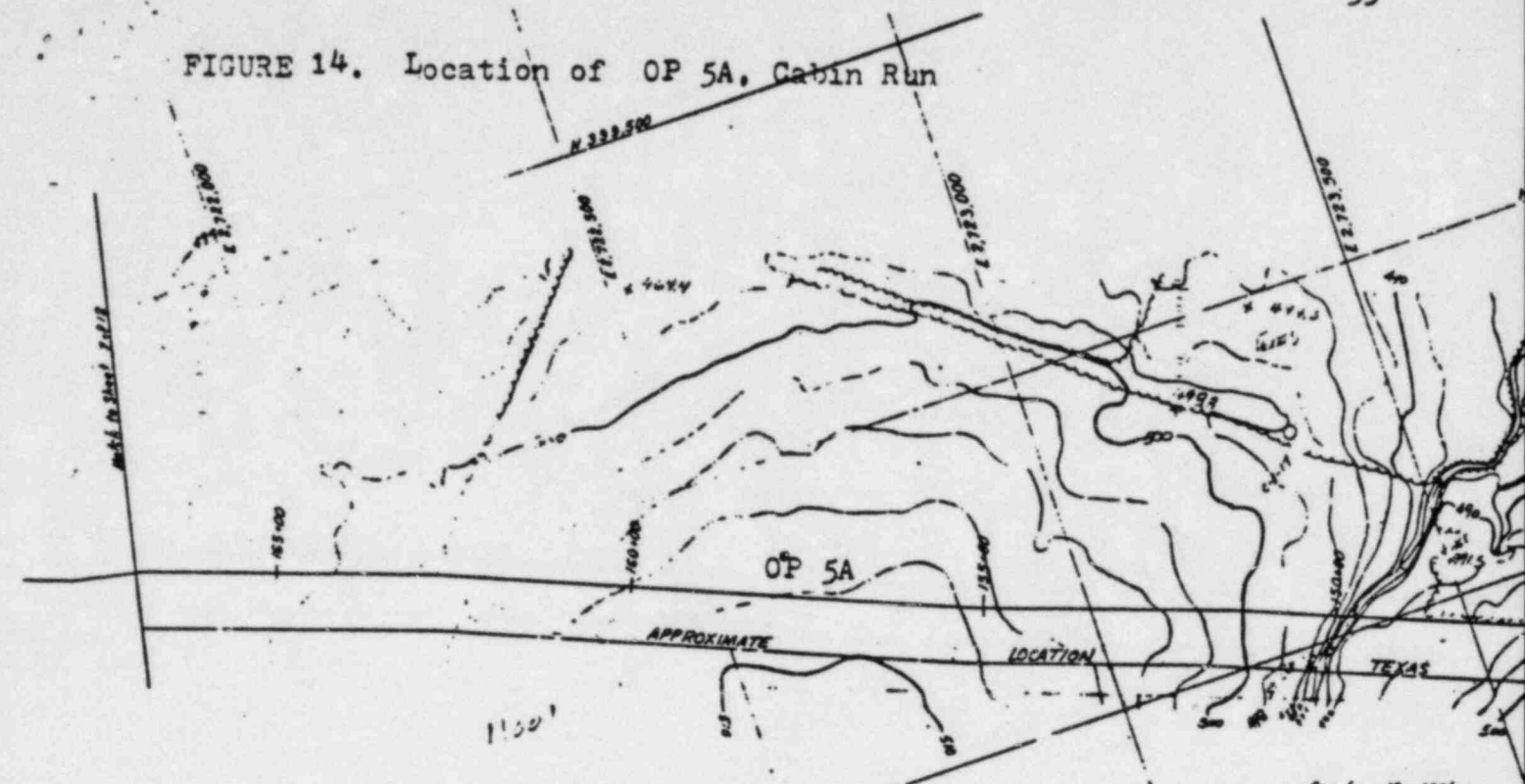
FIGURE 13.

Operation 4A - DEEP RUN

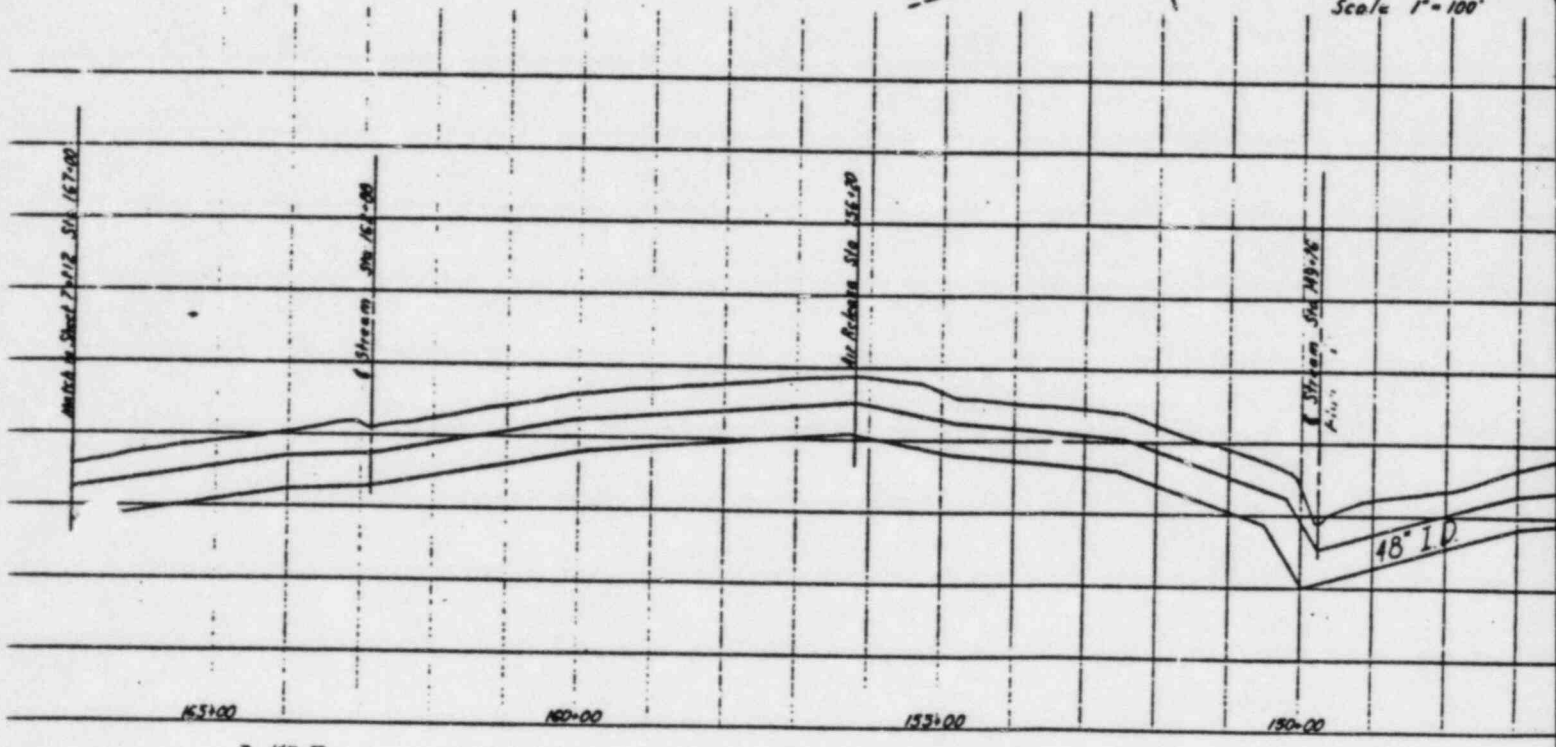
KEY:

- A - Dark red-brown fine-textured humus; many grass roots; few rocks near surface, but stones increase with depth
- S - Same matrix as A, but densely packed with stones
- R - Dark red-brown clayey soil, with some orange tint; almost solidly packed with stones (these are not indicated on the drawing); very wet
- W - Soil, stones like R, but water stands in level below 43 cm down from SE corner

FIGURE 14. Location of OP 5A, Cabin Run



Scale 1" = 100'



165+00

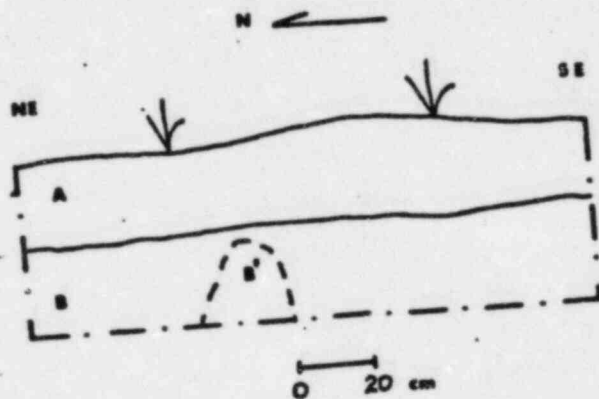
170+00

175+00

180+00

48° 10'

FIGURE 1 5.

Operation 5A - CABIN RUN

KEY:

- A - Yellow-brown, fine-textured soil; some pebbles and small stones
- B - Yellow-tan, fine-grained soil; grades to orange at base of excavation, with some gray and orange mottling also present; a few more rocks than A, and more densely compacted
- B' - Same matrix as B, but with many orange and red rocks densely concentrated; rocks stain soil deeper orange color; tough, dense area, difficult to excavate; this type of soil occurs in patches throughout pit

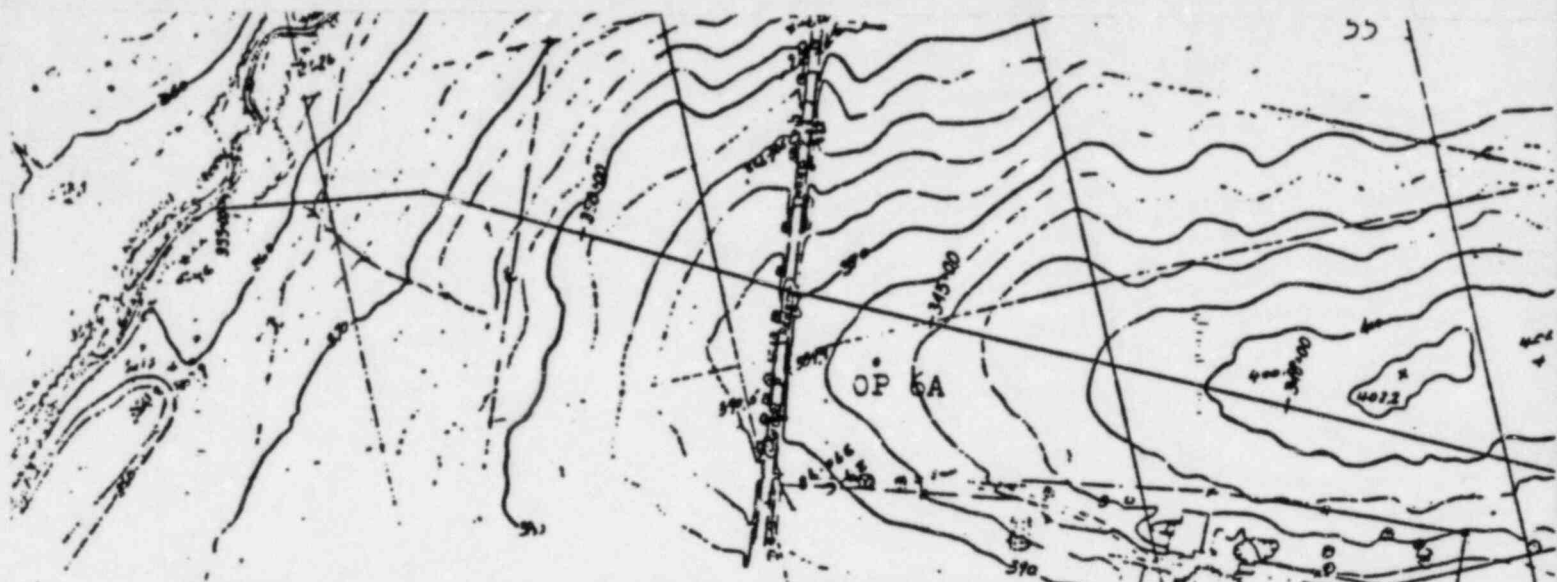


FIGURE 16. Location of OP 6A, Perkiomen Creek

Scale 1"=100'

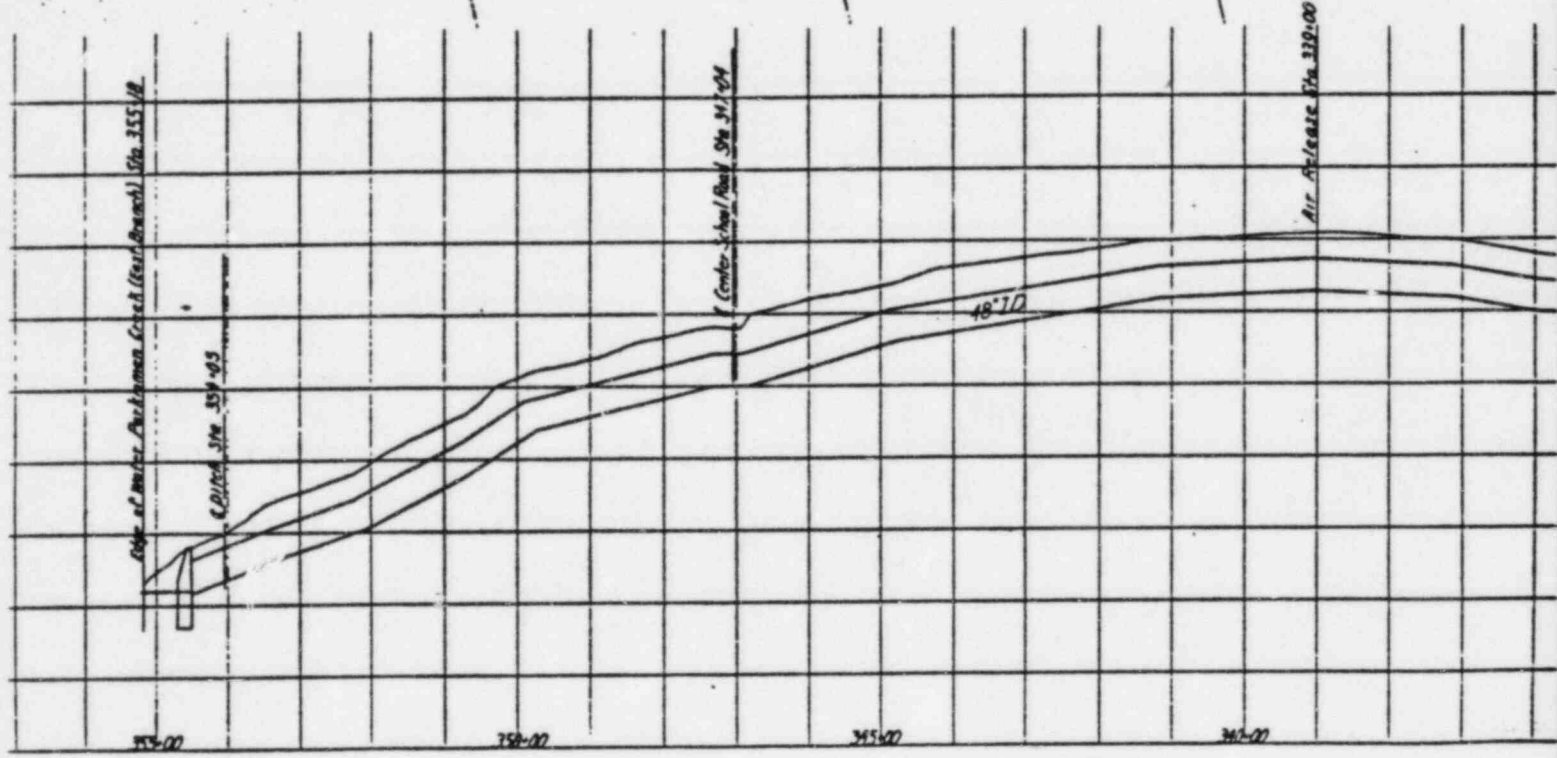


Figure 16

TABLE 2

Finds

Excavation Units:

Op. 5A-1, surface

Fired clay, glazed:

1 piece - buff, body paste; appears to be a bowl fragment; exterior has white glaze; interior dark brown to black glaze; modern

1 piece - orange paste; probably a bowl fragment; interior dark brown glaze; exterior smoothed but not glazed; modern.

Op. 5A-2, contact of levels A and B

Bone, Animal:

1 fragment of proximal right femur; immature; modern mammal, possibly a raccoon.

1 fragment of a long bone, medium-large mammal, possibly a deer.

Op 5D-1, contact of levels A and B

Bone, Animal

1 fragment of a long bone, small-medium mammal, probably a humerus.

Op 5, general surface

Bone, Animal

1 distal femur fragment, medium-sized mammal, unidentified.

Corn Field South of Center School Road

Fired clay, unglazed:

8 pieces - dark buff paste; fine textured with no visible temper; one side side is dark brown on the surface; shape indeterminate, possibly these are not fragments of a vessel but burned clay from other activities; historic period, but undatable.

TABLE 2 (cont.)

Finds

Excavated Units:

Fired Clay, glazed:

1 piece - buff paste, white glaze exterior and interior; possibly a plate fragment.

1 piece - buff paste; probably a bowl fragment; dark brown glaze interior; plain exterior.

2 pieces - black paste; white paint; appear to be from skeet shooting targets.

Field North of Center School Road

Shell:

1 unidentified mussel-type fragment.

Fired clay, unglazed:

1 piece - no definite shape; fine-textured; dark orange to buff.

1 piece - brick; red-orange; fine-textured; no visible temper; 1 side striated with \approx 1 cm. wide grooves.

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