excavated to culturally sterile soil and all excavated soil was screened through 1/4" mesh. Stratigraphic soil data was recorded on standardized log sheets.

Although the station numbers on the highly accurate one-foot contour maps used in this survey were not keyed to the original Division of Highways Engineering Report's station numbers, careful distance measurements between these two maps allowed for accurate mapping of the archaeological data. Figures depicting the survey results reference the station numbers from the original engineering report where applicable.

Laboratory methods for the Phase I investigation included the washing, marking, and cataloging of all recovered artifacts according to standard archaeological practices.

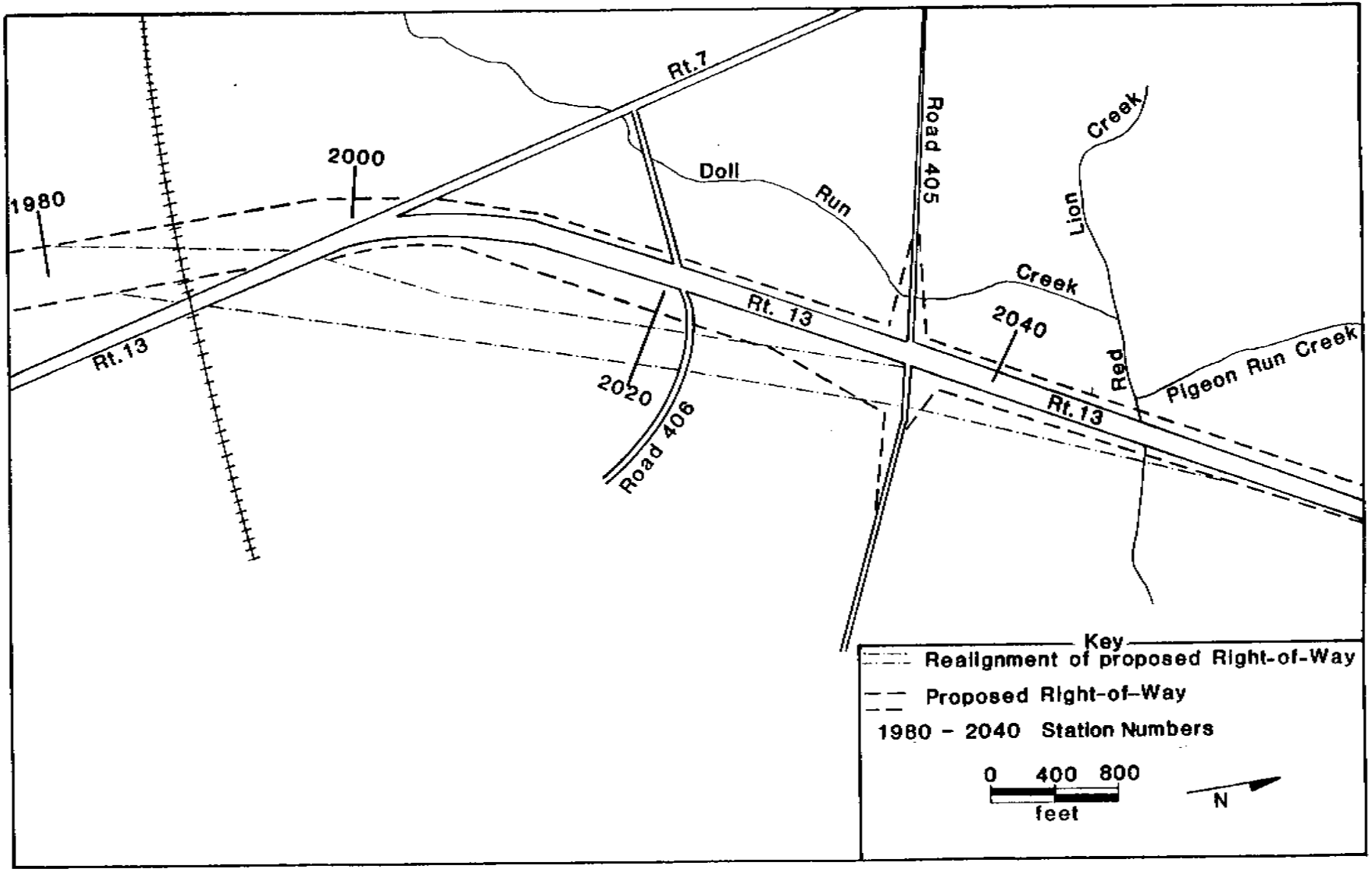
PHASE I SURVEY RESULTS

The Proposed Right-of-Way consisted of two alignments. The first Proposed Alignment began at Scott's Run and moved west from existing Route 13 and then back to existing Route 13 at the intersection of existing Route 7 and Route 13. From there, the main trunk of the Proposed Right-of-Way had followed existing Route 13 to Red Lion Creek. After the initial Phase I survey was conducted, a shift in the Proposed Right-of-Way alignment moved the Proposed Right-of-Way east of existing Route 13 from the intersection of Route 7 and Route 13 to Red Lion Creek. Figure 11 illustrates the alignment shifts of the Proposed Right-of-Way.

The Proposed Right-of-Way was divided into arbitrary survey parcels to facilitate the testing program. Each parcel was given

FIGURE 11

Map of the Proposed Right-of-Way with the Realignment, U.S. 13 Relief Route



a numerical designation and a surname title taken from parcel property owners and/or tenants, or the surnames were arbitrarily generated. Data recovered and test units placed within a parcel were keyed to that parcel number and name. Parcel boundaries corresponded with natural or legal boundaries and ranged in length from 300 feet to 2000 feet. The parcels are listed below in Table 1 and shown in Figure 2. Following is a discussion of the survey results for each parcel.

Archaeological site loci identified within each parcel are categorized by their need for additional field research. At site locations that are small with limited artifact assemblages and limited integrity, no further work is recommended. The sites for which further fieldwork is recommended may fall into a number of different categories based on the intensity of the recommended additional fieldwork (see the final cultural resource management recommendations and Table 3 for more information).

PARCEL 1 - PARKWAY GRAVEL FIELD AND WOODLOT

Figure 12 shows the Proposed Right-of-Way in this parcel, which is adjacent to existing Route 13 on the west side. The proposed trunk of the alignment and an access road from Lorewood-Grove Road merge with existing Route 13 at Scott's Run on the south, and ends 1700 feet north at a farm lane.

The southern bank of Scott's Run was subjected to pedestrian survey and was found to be a gravel pit now almost completely overgrown with vegetation. Due to the total ground disturbance as a result of the former borrow activities, no subsurface testing was conducted on the south bank of Scott's Run. The

TABLE 1

STUDY PARCELS FOR PHASE I ARCHAEOLOGICAL SURVEY OF U.S. 13 RELIEF ROUTE, SOUTH TO NORTH ALONG PROPOSED RIGHT-OF-WAY, STAs 1779-2060

Parcel Number	Parcel Name	Station Numbers
1	Parkway Gravel Field and Woodlot	1780-1796
2	Lorewood Grove Field	1796-1817
3	Snapp Field	1817-1833
13	Snapp Home	1817-1820
4	Chesapeake and Delaware Canal	1833-1860
5	Weaver Field and Woodlot	1860-1880
6	Lester Field	1880-1899
7	Dragon Run South Field and Woodlot	1899-1915
8	Dragon Run North Field and Woodlot	1915-1939
9	Wrangle Hill South Field	1939-1953
10	Wrangle Hill North Field	1953-1968
11	Conrail South Field	1968-1989
12	Conrail North Field	1989-2005
14	Texaco Field and Woodlot	1989-2020 (E)
15	Smith Woodlot	2020-2035 (E)
16	Red Lion Creek Field and Woodlot	2035-2051 (E)
17	Stanley Woodlot	2038-2051 (W)
18	Leski Woodlot	2030-2038 (W)
19	John Doe Woodlot	2023-2030 (W)
20	Blaschko Woodlot and Yard	2019-2023 (W)
21	Niblett Field	2010-2019 (W)
22	Hemphill Yard	2008-2010 (W)
23	Fairweather Marine Yard	2004-2008 (W)

Key:

(E) = east side of existing Route 13
(W) = west side of existing Route 13

Parkway Gravel Prehistoric Site, 7NC-G-100, was recorded on the northern bank of the creek in a cultivated field (Figure 12). This site is located on the edge of a knoll adjacent to Route 13. Route 13 bisects this knoll and probably disturbed a portion of the site. The western edge of the site is bounded by an ephemeral drainage, while the southern edge of the site is bounded by Scott's Run floodplain. The visibility was greater than 70% for the entire field.

TABLE 3

DATA SIGNIFICANCE POTENTIAL FOR SITES WITHIN THE PROPOSED U.S. 13 RELIEF ROUTE WHERE A PHASE II INVESTIGATION IS RECOMMENDED, SCOTT'S RUN CREEK TO SOUTHERN END OF RELOCATED DELAWARE ROUTE 7 AT TYBOUTS CORNER

CATEGORY 1 - None

CATEGORY 2

Parcel Number	CRS Number	Site Number	Prehistoric Sites
1	N-12116	7NC-G-100	Parkway Gravel Prehistoric Site
3	N-12117	7NC-G-101	Snapp Prehistoric Site
8	N-12126	7NC-G-104	Dragon Run North B Prehistoric Site
11	N-12119 N-12118	7NC-E-93 7NC-E-92	Conrail South A - Conrail South B Prehistoric Site
			Historic Sites
15	N-5053	7NC-E-98	Smith Historic Site

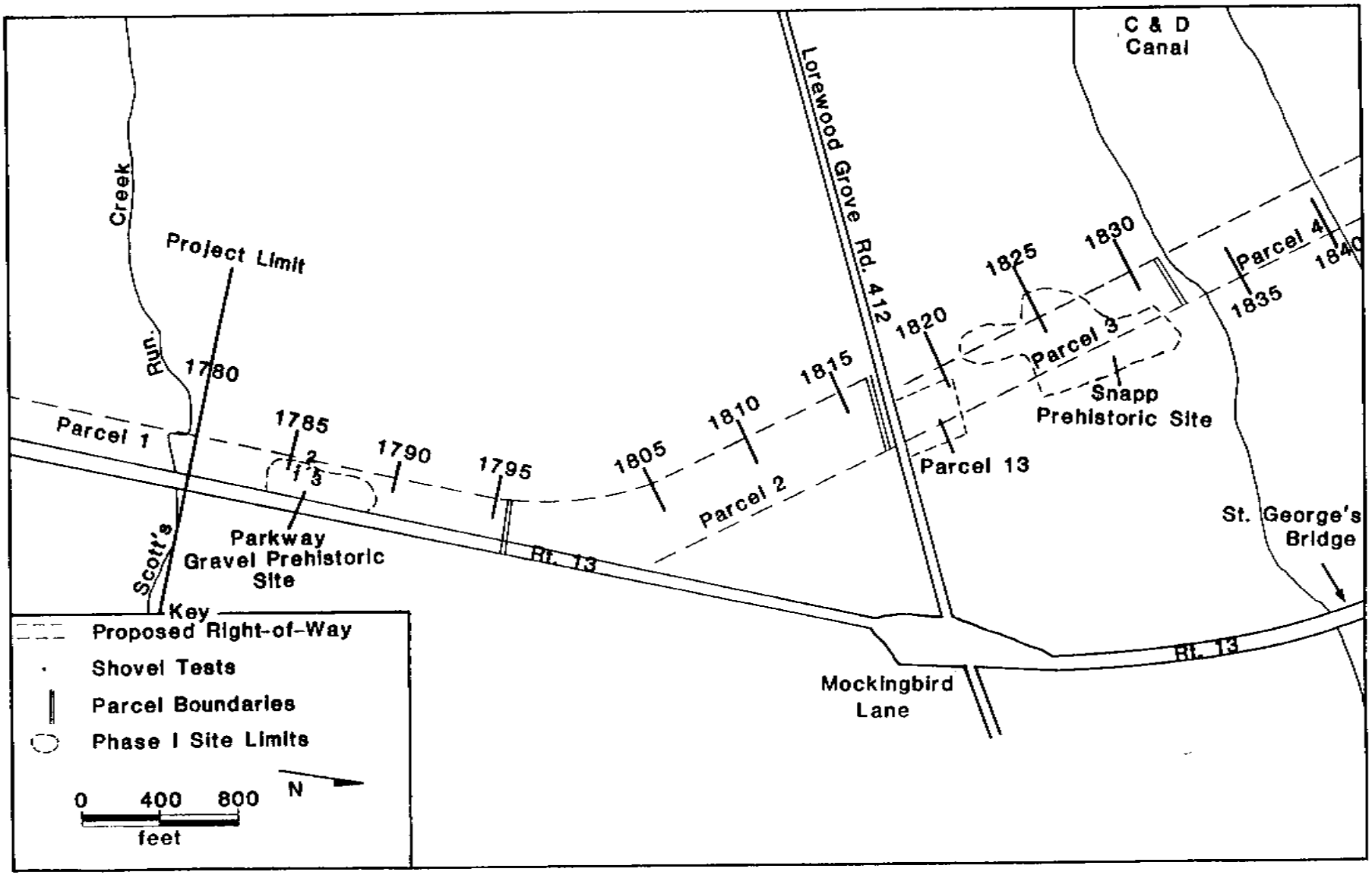
CATEGORY 3

Parcel Number	CRS Number	Site Number	Prehistoric Sites
5	N-12124	7NC-G-102	Weaver Prehistoric Site
8	N-12125	7NC-G-103	Dragon Run North A Prehistoric Site
9	N-12127	7NC-G-105	Wrangle Hill South Prehistoric Site

CATEGORY 4 - None

FIGURE 12

Map of Parcels 1-4: STAs 1780-1840



Artifacts were recovered from a pedestrian survey and consisted of more than 50 fire-cracked rock observed, one quartz core, two chert cores, one utilized chert flake, and a chert straight-stemmed projectile point fragment. Three shovel test pits were excavated adjacent to the ephemeral drainage in a narrow strip of woodlot which overlooked the floodplain of the ephemeral stream (Figure 12). One jasper flake was recovered from Shovel Test Pit 3. A Woodland I Period site is implied by the recovered artifacts; however, little can be determined regarding function. Soils were historically unplowed, and soil stratigraphy in the shovel test pits consisted of a brown silty humus layer overlying a medium orange brown to yellow brown silty clay. Below this, the soils were yellow brown silty clays with increasing numbers of small and medium sized gravels. Soils in the plowed field were slightly eroded. Site limits identified for 7NC-G-100 are based on the extent of the artifacts found on the surface. Because of the large numbers of fire-cracked rock and other artifacts recovered and because part of the site is in an historically unplowed context, a Phase II investigation is recommended for this prehistoric site.

A concentration of historic artifacts and large rocks were located adjacent to the farm lane, at the western limit of the Proposed Right-of-Way. The majority of the artifacts were green transfer-printed whiteware and assorted bottle glass. The topographic setting that these artifacts and rocks were found in suggests these items were used as rip-rap to control field erosion. In addition to the above mentioned cultural materials, one quartz flake, one fire-cracked rock (observed), and one

quartz late stage biface reject were collected as isolated finds.

PARCEL 2 - LOREWOOD GROVE FIELD

Figure 12 illustrates the alignment in this parcel, a 2100 foot length of the Proposed Right-of-Way which is defined by the farm lane on its southern end and Lorewood-Grove Road New Castle 412 on its northern end. The Proposed Alignment with its access road begins to bend to the northwest towards the proposed bridge crossing over the C & D Canal.

A pedestrian survey was conducted in this no-till corn field with surface visibility being approximately 30-50%. No concentrations of prehistoric artifacts were identified. A half dozen fire-cracked rock were observed on or near the crest of a knoll adjacent to New Castle 412. These artifacts could be associated with the much larger concentrations of fire-cracked rock on nearby Parcel 3 and New castle 412 could have cross-cut the southern end of the prehistoric scatter located in Parcel 3. A light historic field scatter consisting of a few fragments of redware, whiteware, and brick was also noted for this parcel. A small late historic scatter was identified outside of the Proposed Right-of-Way adjacent to New Castle 412. Artifacts included glass insulator fragments, sewer pipe fragments, and clear window glass. Phase II work is not recommended for this parcel unless Phase II examinations at the prehistoric site in Parcel 3 warrants additional work in Parcel 2.

PARCEL 3 - SNAPP FIELD

Parcel 3 extends north from Lorewood-Grove Road (New Castle 412) 1550 feet to the C & D Canal (Figure 12). A pedestrian

survey was conducted over the entire cultivated field through which the Proposed Right-of-Way will pass. Surface visibility of this no-till corn field was approximately 50%.

The Snapp Prehistoric Site, 7NC-G-101, consisting of over 200 fire-cracked rock (observed), 1 quartz early stage biface reject, 1 chert core, one hammerstone, and one unidentifiable groundstone tool fragment, was identified during the pedestrian survey. No historic artifacts were observed. Slight concentrations of the fire-cracked rock were noted in two areas, which were separated by an ephemeral drainage. At this point, little can be concluded regarding the temporal placement or function of this site, but considering the amount of fire-cracked rock present at the site, it is apparent that a large of number of fires were set here and the tools and cores indicate other prehistoric activities also took place. This would suggest that there may also be features present on the site, which could be verified during the Phase II survey. Site 7NC-G-101 is located on a relatively flat terrace west and northwest of a knoll. The site is bounded by steep slopes and an intermittent stream and associated ephemeral drainages on the west side, the C & D Canal on the north, and additional steep slopes and ephemeral drainages on the east. The steep slopes and floodplain settings on the Snapp property were covered by woodlots. These settings are not utilized by prehistoric peoples and thus were not subjected to surbsurface testing. The fire-cracked rock observed south of Lorewood-Grove Road (New Castle 412), mentioned in the Parcel 2 discussion, may be an extension of this prehistoric site.

Topography across the cultivated field suggests minor soil deflation and erosion.

The limits of the site are based on the pedestrian survey only. No sub-surface testing was conducted in the wooded edges around the cultivated field. Because of the large aereal size of the site, and the presence of tools, a core, and large numbers of fire-cracked rock, Phase II work is recommended for this site.

PARCEL 13 - SNAPP HOME

Parcel 13 consists of a 300' X 300' rural residential property which was subjected to extensive shovel testing (Figure 12). Beers' (1868, Figure 7) and Baist's (1893, Figure 8) Atlases indicate a standing structure on or near this parcel. Presently, a 20th century dwelling and outbuildings are located on this parcel. A historic standing structure is located on the adjacent property (N-5249). This 1849-1868 agricultural complex (Custer, Jehle, Klatka, and Eveleigh 1984) is located on Beers' (1868, Figure 7) and Baist's (1893, Figure 8) Atlases. The present owner informed the authors that this structure once served as a stage depot and shipping terminal, and is 157 years old.

A total of 43 shovel test pits were excavated in grid fashion on Parcel 13 in an attempt to identify cultural materials and architectural remains. Very few artifacts were recovered from the shovel test pits. These artifacts included a non-diagnostic projectile point, one ironstone and one stoneware fragment, three bottle glass fragments, two lamp glass fragments,

one clam shell, and one cut nail fragment. Shovel Test Pit 6 located a feature of unknown origin. The feature was capped by a 0.8 foot plowzone layer overlying an organic compact clayey layer with gravels. The plowzone produced the non-diagnostic projectile point. The feature fill was a mottled brown clay with scant charcoal flecking and produced lightbulb or lamp glass fragments. Shovel Test Pit 24 located a modern rubble feature. The feature contained modern brick fragments, cinder blocks, aluminum foil, melted plastic, and miscellaneous iron fragments and continued below the portion excavated. This feature was capped by a sterile plowzone. Shovel Test Pit 32 identified what is believed to be a septic drain field. Soil stratigraphy exhibited by the shovel test pits generally consisted of a brown silty clay plowzone overlying a brown to orange-brown clayey subsoil.

The shovel testing conducted on this parcel failed to identify any clear early architectural remains which would be indicative of the above mentioned structure. Therefore, no further work is recommended.

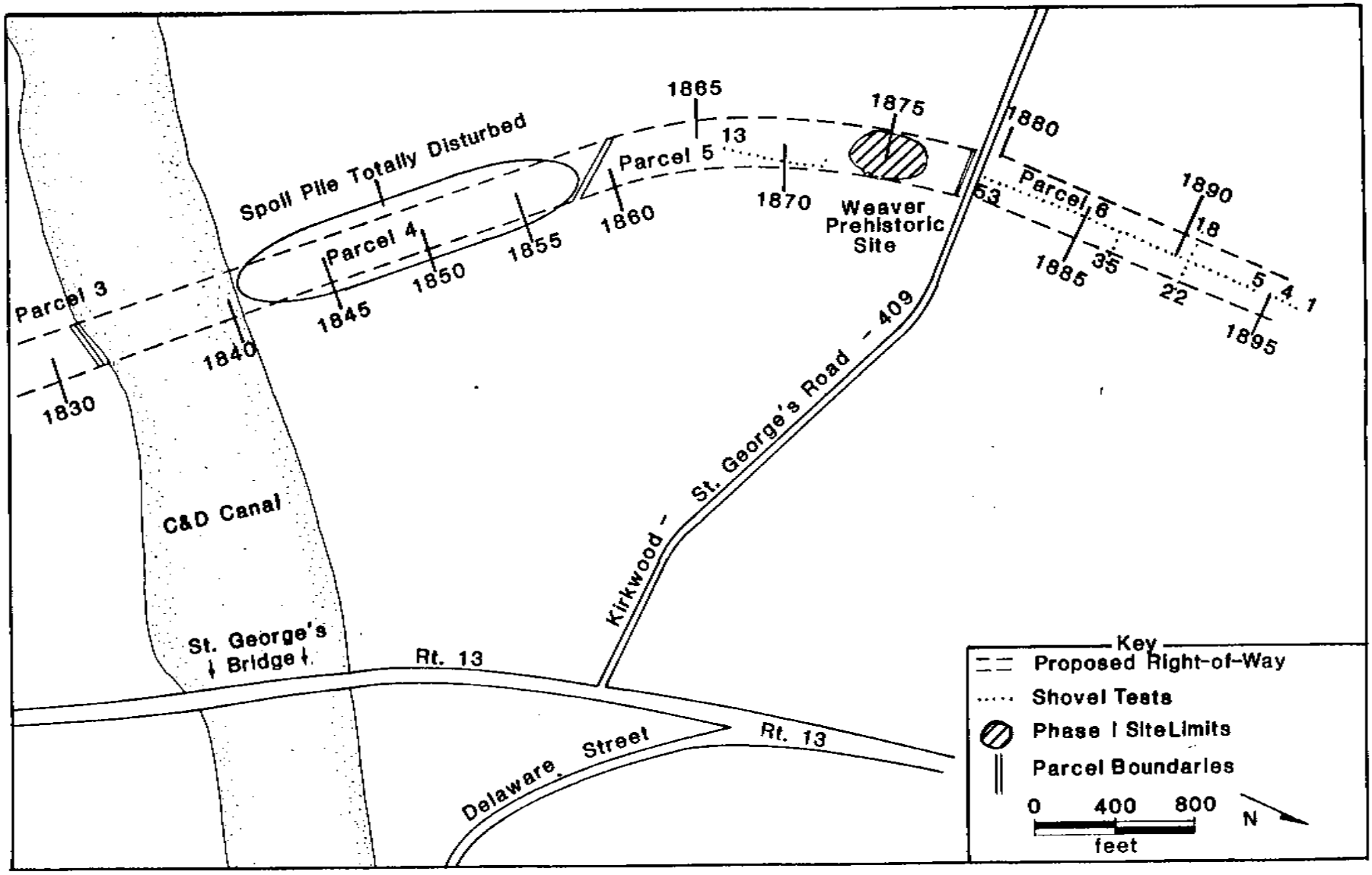
PARCEL 4 - CHESAPEAKE AND DELAWARE CANAL

The C & D Canal segment of the Proposed Right-of-Way extends from the south bank of the present canal, north 2800 feet, to the base of the spoil pile resulting from the canal construction (Figures 12 and 13).

The construction of the C & D Canal is summarized and abstracted from Munroe (1979, 1984:108-109). The Chesapeake and Delaware Canal was constructed in the years 1824-1829 and was a

FIGURE 13

Map of Parcels 3(partial)-6(partial): STAs 1830-1895



privately funded endeavor. The original plan was to connect the Elk River with the Christina River and in 1804, Joseph Tatnall, a Brandywine miller who was the first company president, began construction of a feeder canal that would bring water from the upper Elk to the middle stretches of the main canal at Glasgow. The company's funds were exhausted within a year and all construction stopped until 1824, when stock subscriptions by the states of Maryland, Delaware, and Pennsylvania and by the United States government allowed work to be resumed.

The canal's Delaware terminus was below New Castle and in Maryland it entered Back Creek, a tributary of the Elk River. This route is different from the originally planned route. The new route had been recommended by army engineers, who were forced to avoid the Christina River after bridges were built at Wilmington and Newport. The new route also allowed for more direct access to the Delaware Bay and was thought to have been more economical to the principal sponsors of the canal. These sponsors were Philadelphia merchants who hoped that the canal would divert central Pennsylvania products, floated down the Susquehanna River, from going to Baltimore. However, the Philadelphia merchants had no desire to develop another rival port at Wilmington in the process. Delaware City and Chesapeake City were constructed at the terminal locks on either side of the peninsula. The federal government purchased the canal in 1919 thereby removing it from private ownership. The main terminus was moved to Reedy Point, two miles south of Delaware City. The canal was later enlarged and deepened and the locks were removed to allow for ocean shipping. The canal's main importance was to

give Baltimore a shorter connection to Philadelphia, New York, and ports in western Europe via the Delaware Bay.

No testing was conducted on this parcel due to the construction activities of the canal building and the resulting spoil pile on the north bank. The spoil pile is bounded by a steeply contoured slope which extends higher in elevation than the spoil itself and the top of the spoil pile is largely marsh. No further work is recommended.

PARCEL 5 - WEAVER FIELD AND WOODLOT

Figure 13 illustrates the Proposed Right-of-Way in this parcel. This 1800 foot section of Proposed Right-of-Way stretches from the canal spoil pile (U.S. Government Property Line), north to Kirkwood-St. Georges Road (N.C. 409). Currently owned by Lester Weaver and farmed by David Meck, the parcel contained both wooded areas and cultivated fields. The southern part of the parcel, between centerline STAs 1841 and 1860, was buried under a massive spoil pile (probably C & D Canal dredgings) and no survey could be conducted.

The wooded area near STA 1865 was tested with 13 shovel tests slightly offset from the centerline. These shovel tests produced 20th century trash, brick, oyster shells, metal, and glass fragments. Soils in the shovel tests were a mosaic of gray silty clays and sands as well as brown sandy loams. These soils and artifact types were interpreted as fill from the nearby canal spoil pile.

East and adjacent to the woods and the cultivated field is an alfalfa field. A surface reconnaissance of this field

identified no cultural materials, although visibility was very poor. No shovel testing was conducted in the alfalfa field due to access problems. A pedestrian survey conducted in the cultivated field identified the Weaver Prehistoric Site, 7NC-G-102. Surface visibility was very good. Artifacts collected consisted of four utilized quartz flakes, one quartz unidentifiable biface fragment, one chert core, and one unifacially worked quartz tool which may have been a drill with the tip and base snapped off. Three fire-cracked rock were also observed. Little can be said of this assemblage of artifacts regarding time or function. In addition to the above mentioned prehistoric artifacts, the landowner's son-in-law has a projectile point collection from this area. The site is located on a toe/terrace of a long broad slope of a knoll located to the northeast of the site location. This toe of the slope is defined by ephemeral drainages on the east and west. Boundaries of the prehistoric site were defined by the extent of the surface visible artifacts. Further Phase II work is recommended for site 7NC-G-102.

In addition to the prehistoric artifacts, 25 historic artifacts were observed. This field scatter was comprised of redware, whiteware, stoneware, porcelain, and pearlware fragments, a few assorted glass fragments, and some brick fragments. None of these artifacts could be ascribed to the 17th century Robert Seams occupation mentioned previously and no trace of this site was found during the survey of the Weaver/Meck farm. Beers' 1868 Atlas (Figure 7) shows a cemetery and three

structures located just west of the Proposed Right-of-Way and these artifacts are interpreted as general field scatter related to these occupations.

PARCEL 6 - LESTER FIELD

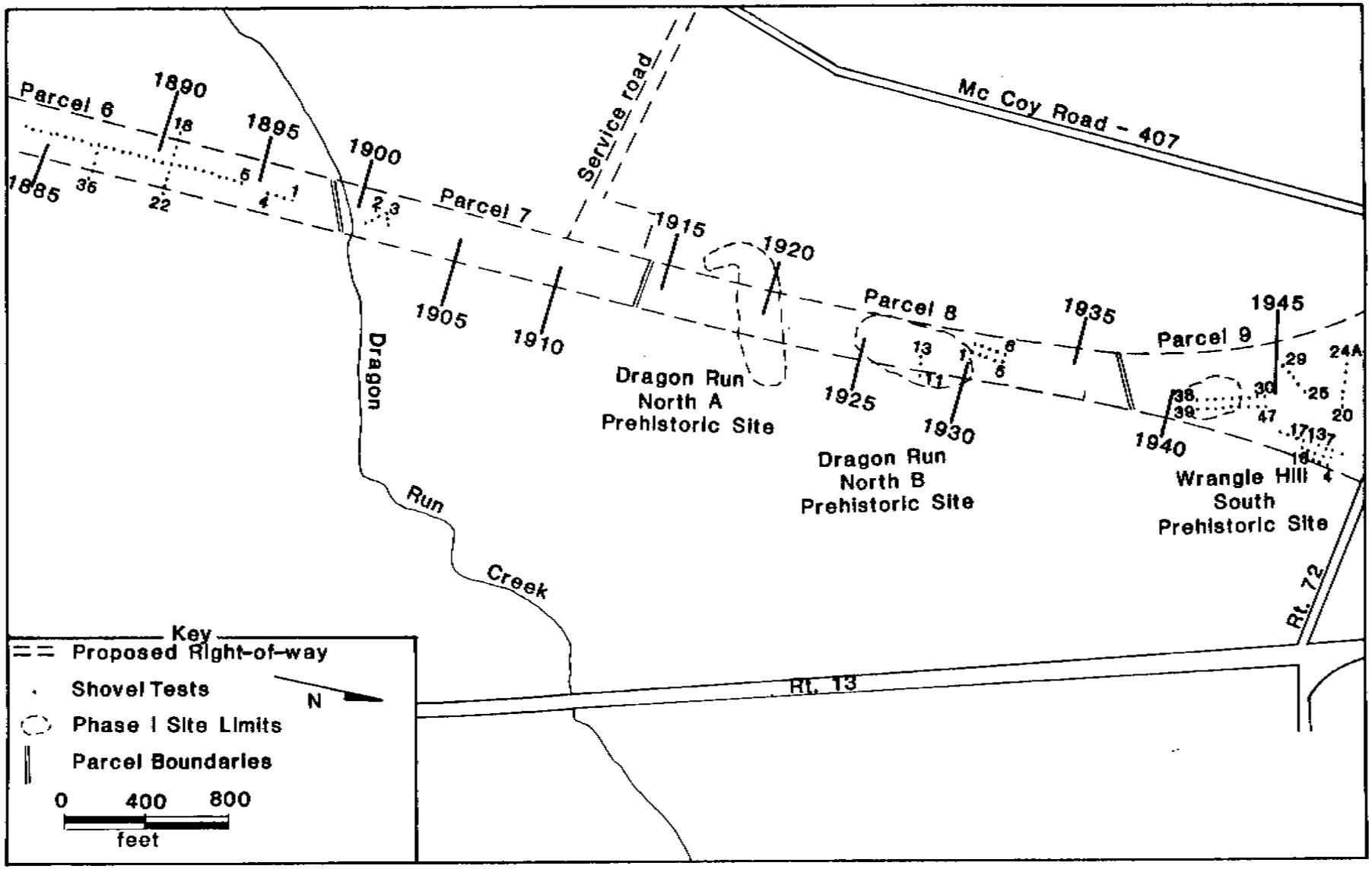
Parcel 6 is a 2100 foot length of Proposed Right-of-Way which is defined by the Kirkwood-St. Georges Bridge Road (New Castle 409) along the southern end and Dragon Creek on the north end (Figures 13 and 14). The parcel is cultivated but visibility was too poor to conduct a pedestrian survey. The north end of the parcel is marked by pronounced topographic relief consisting of a very steep slope to Dragon Creek as well as a very steep wooded ravine and ephemeral drainage located 500 feet south of the creek. This ravine contained metal, glass, and other 20th century trash.

A total of 53 shovel tests were excavated along the centerline and at angles to the centerline in two places (Figures 13 and 14). Shovel Test Pits 5 through 53 were excavated between New Castle 409 and a deep ravine on the north side of the cultivated field. Plowzones consisted of brown silty or sandy loams or clays overlying yellow brown silty clays to orange brown silty or sandy clays.

Artifacts recovered from the shovel tests consisted of one quartz flake each from Shovel Test Pits 7 and 11. A chert teardrop Woodland I projectile point was recovered from the surface near Shovel Test Pit 6. The locations of these artifact producing shovel test pits and the above mentioned projectile point are on a moderately steep slope down to the deep ravine.

FIGURE 14

Map of Parcels 6(partial)-9(partial): STAs 1885-1945



Shovel tests placed roughly perpendicular to the centerline along the upper edge of this slope produced no cultural materials.

Two other shovel test pits (35 and 37) produced a jasper flake and a chert flake respectively. Shovel Tests 35 and 37 are located on the edge of a nearby knoll, which is outside of the Proposed Right-of-Way, and downslope from the knoll. These artifacts may represent the western edge of a prehistoric site located on this nearby knoll. This knoll is defined by a number of surrounding ephemeral drainages.

Shovel Test Pits 1-4 were excavated between the creek and the deep ravine into compacted eroded soils and produced no cultural materials. Soil stratigraphy in these shovel test pits consisted of a dark brown sandy loam plowzone overlying brown to orange-brown sands and sandy silts with gravels.

The total artifact counts for the Lester parcel are few, the artifacts are contained in the plowzone, and erosion is a major factor here. Therefore, further work is not recommended for this parcel within the Proposed Right-of-Way.

PARCEL 7 - DRAGON RUN SOUTH FIELD AND WOODLOT

The Proposed Right-of-Way within this parcel is approximately 1550 feet in length and includes the main trunk of the Right-of-Way, a toll plaza, and a service road from McCoy Road (New Castle 407) to the toll plaza (Figure 14). The parcel is defined by Dragon Creek to the south, and a gravel road, used for access to a nearby gravel pit, to the north.

A pedestrian survey was conducted over the entire length of the parcel including the toll plaza and service road. Visibility

in this cultivated field was excellent. The Proposed Right-of-Way crossed slope edges and ephemeral drainages and these areas are highly eroded. One jasper corner notched Woodland I projectile point was collected from the surface on a small peninsula of land between two ephemeral drainages. One piece of blue-gray stoneware was identified along the proposed service road during the pedestrian survey.

A total of seven shovel test pits were excavated on a small terrace next to Dragon Creek in a woodlot adjacent to the cultivated field (Figure 14). The terrace itself is not much higher in elevation than the creekbed. No cultural materials were recovered in these shovel tests. Soil stratigraphy revealed profiles consisting of slopewashed soils from the nearby field overlying marshy mud soils. No further work is recommended for this parcel.

PARCEL 8 - DRAGON RUN NORTH FIELD AND WOODLOT

Figure 14 illustrates this segment of the Proposed Right-of-Way and includes the identified sites and the shovel testing conducted on this parcel. Parcel 8 is 2500 feet in length and begins at the gravel road to a nearby gravel pit, and stretches north to a point where the Proposed Right-of-Way crosses an unnamed ephemeral tributary of Dragon Creek.

Field methods in this parcel consisted of a pedestrian survey augmented with shovel testing in the adjacent woodlot next to one of the prehistoric sites. Surface visibility in the cultivated field was excellent. The pedestrian survey identified two areas of prehistoric artifact concentrations. Both sites are

located on small knolls and bluff edges adjacent to the unnamed ephemeral tributary of Dragon Creek.

The Dragon Run North A Prehistoric Site, 7NC-G-103, is located on a sharp knoll along the east edge of the Proposed Right-of-Way. The site extends west from this knoll and bends around an ephemeral drainage. Prehistoric artifacts collected and/or observed at this location consisted of five fire-cracked rock (observed), two quartz flakes (observed), two quartz cores, and one anvilstone. Virtually all of the prehistoric artifacts were found in a tight 50x100 foot cluster at the crest of a knoll. Thus it can be characterized as a small but fairly intensely utilized site at a specific site location.

The Dragon Run North B Site, 7NC-G-104, is located approximately 1000 feet north of 7NC-G-103. Prehistoric artifacts collected or observed consisted of one quartz early stage biface reject, one ironstone flake, three fire-cracked rock (observed), and four quartz flakes (observed). This knoll containing site 7NC-G-104 has two small downslope terraces along the bluff edge and overlooking the ephemeral drainage. Both of these terraces were subjected to shovel testing and Shovel Test Pits 1-10 were placed on the lower terrace and 11-13 on the upper terrace. Shovel Test Pit 4 produced one chert flake and Shovel Test Pit 7 produced one piece of jasper shatter. Soil profiles examined in Shovel Test Pits 1-10 revealed a thin humus layer overlying yellow brown to orange brown sand with gravels to sandy clay with gravels. In some cases, these sands with gravels had a layer of gray sand and gravel located above them. This profile suggests that the location had never been historically plowed.

This gray sand and gravel layer produced one chert flake (Shovel Test Pit 4). The soil stratigraphy in Shovel Test Pits 11-13, on the upper terrace, exhibited what appeared to be a brown sandy clay plowzone overlying orange brown sandy clay. Shovel Test Pit 11 produced two ironstone flakes from the plowzone. No temporal or functional placement for either of thes sites could be determined from the Phase I survey.

Historic artifacts were observed in this parcel as a thin field scatter with no identifiable concentrations. These artifacts consisted of redware, shell-edged pearlware, whiteware, Canton-ware porcelain fragments, and a few brick and glass fragments.

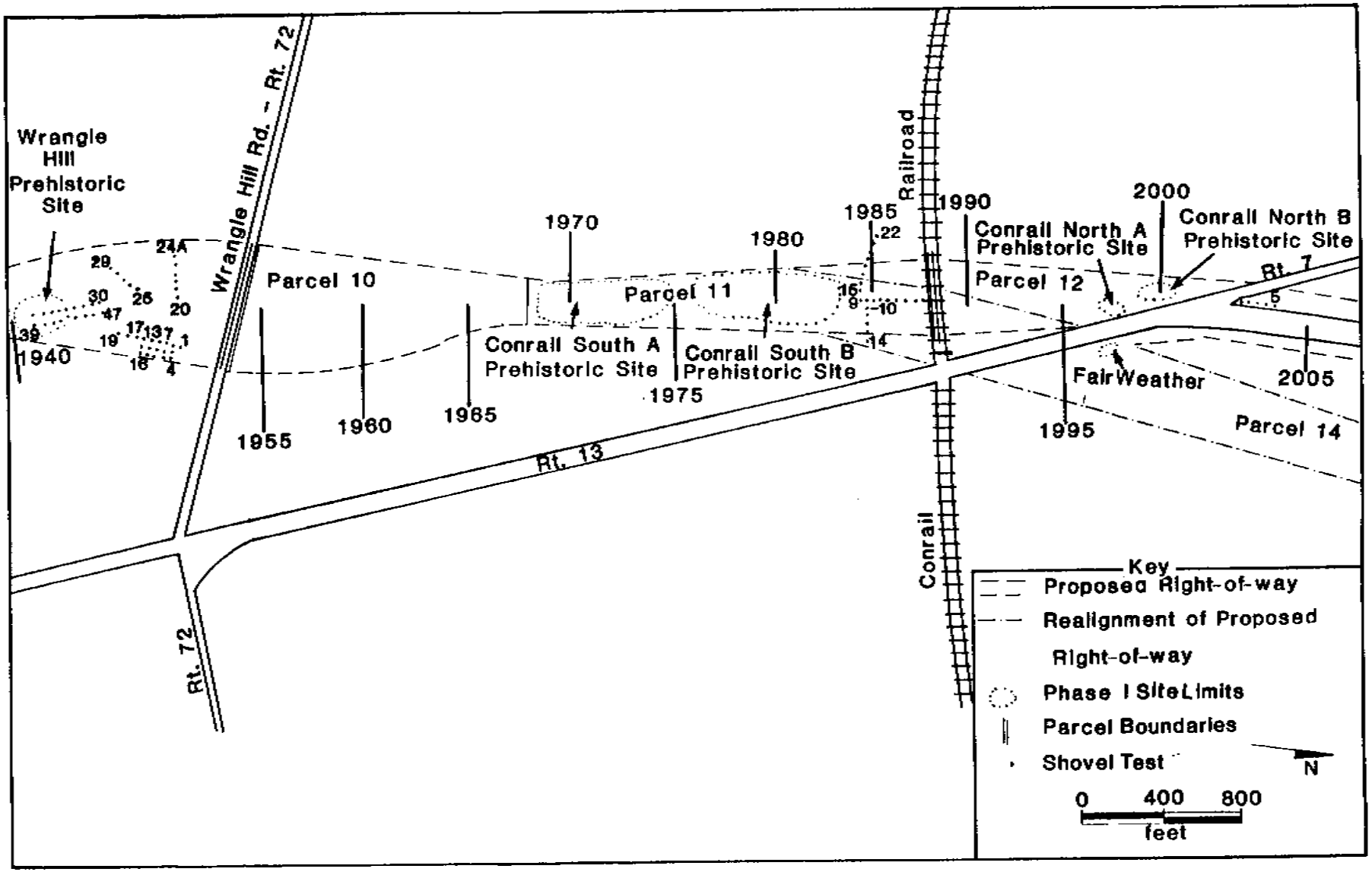
Preliminary site boundaries were established around the two prehistoric sites. Although the two sites are somewhat different, they both possess characteristics which suggest there may be more to the site than was recorded for the Phase I survey. Site 7NC-G-103 consists of a tight cluster of fire-cracked rock and tools at the crest of a prominent rise and site 7NC-G-104 produced tools from plowed contexts and flakes from a wooded, historically unplowed section of the site. The potential integrity of site 7NC-G-104 is higher due to the unplowed nature of a segment of the site. Phase II work is recommended for these two prehistoric site loci.

PARCEL 9 - WRANGLE HILL SOUTH FIELD

Figures 14 and 15 illustrate the Proposed Right-of-Way and the shovel testing conducted in this parcel. The Proposed Alignment includes the main trunk of the road and two access

FIGURE 15

Map of Parcels 9(partial)-12, 14partial), and 23(partial): STAs 1940-2005



ramps to Route 72 - Wrangle Hill Road (New Castle 356). This parcel begins at the point where the Proposed Right-of-Way crosses an ephemeral tributary of Dragon Creek and extends 1450 feet north to Route 72. At a point of intersection with the Proposed Right-of-Way, the tributary is joined by another deeply incised ephemeral drainage. The tributary extends northwest from this point while the other drainage extends to the northeast, thus defining the natural topography of this parcel.

Survey methods on this parcel consisted of shovel testing and a limited pedestrian survey. Surface visibility was limited by overgrown no-till corn stubble. A total of four areas were shovel tested (Figures 14 and 15), and one prehistoric artifact location was identified.

The most southerly area shovel-tested (Shovel Test Pits 36-47) identified the Wrangle Hill South Prehistoric Site, 7NC-G-105. This site is located downslope on a toe/terrace above the confluence of two ephemeral drainages. Artifacts recovered from the shovel testing consisted of two argillite flakes, one quartz flake, one chert flake, two quartzite flakes, and one jasper flake, all from the plowzone. All of these artifacts came from just three shovel test pits: nos. 36, 37, and 39. One argillite flake was collected from the surface near Shovel Test Pit 40. These artifacts and their location on low order streams suggest a procurement site. Soil stratigraphy exhibited a plowzone consisting of brown silty clay overlying an orange brown to red brown silty or sandy clay with some small gravels. The artifacts are tightly clustered at the toe of the slope and the total count

of artifacts is high when one considers the limit amount of excavation conducted (1x1 foot shovel test pits on a grid at 40' intervals is a 0.06 percent sample). Although the site may be limited to the plowzone, Phase II work is recommended on this site. Shovel Tests 25-29 were excavated near the ephemeral tributary. Shovel Test 26 produced two fire-cracked rock and one jasper flake. Shovel Tests 20-24A were excavated on a small rise in the northwest portion of the parcel and produced one redware and one brick fragment. Shovel Tests 1-19 were excavated on a bluff edge overlooking the deeply incised ephemeral drainage and produced one redware fragment. Soil stratigraphy for Shovel Tests 1-29 generally consisted of a plowzone of brown clayey loam with gravels overlying an orange to red-brown sandy loam with gravels. Soils were heavily eroded and deflated in the northern two-thirds of the parcel, and other than for site 7NC-G-105, no further work is recommended.

PARCEL 10 - WRANGLE HILL NORTH FIELD

Parcel 10 begins at Route 72 and extends north 1450 feet to a windrow separating two cultivated fields (Figure 15). The alignment consists of the main trunk of the Proposed Right-of-Way and two access ramps to Route 72. Because surface visibility was excellent, a pedestrian survey was conducted to locate artifacts. The surface was eroded and deflated in some areas and criss-crossed by two ephemeral drainages. One piece of fire-cracked rock was observed, and no further work is recommended on this parcel.

PARCEL 11 - CONRAIL SOUTH FIELD

Figure 15 illustrates this 2700 foot portion of the Proposed Right-of-Way, which extends north from a windrow to the Conrail railroad tracks. Survey methods consisted of a pedestrian survey over five-sixths of this parcel and shovel testing on the northern one-sixth of this parcel. Surface visibility was excellent in those areas subjected to pedestrian survey.

The pedestrian survey conducted on the southern end of the parcel identified two areas of prehistoric artifacts. The first area is the Conrail South A Prehistoric Site, 7NC-E-93, which is located on a low knoll bounded by a series of ephemeral drainages. This site is located at the southern end of the parcel and extends north 700 feet to an ephemeral drainage. Artifacts collected consisted of one quartzite flake, one quartzite teardrop Woodland I projectile point fragment, one quartzite stemmed Woodland I projectile point fragment, and one jasper expanding stem Woodland I projectile point fragment resembling a fishtail point. In addition, nine fire-cracked and one jasper flake were observed. The large number of tools present on the site suggests a procurement site and Phase II work is recommended for this site.

The Conrail South B Prehistoric Site, 7NC-E-92, is situated on the northeasterly slope of a knoll and is surrounded by ephemeral drainages. The site extends northward about 700 feet from the ephemeral drainage dividing 7NC-E-92 from 7NC-E-93. Artifacts collected consisted of one chert flake and one quartz core, while six fire-cracked were observed. Because the site

appears to be extremely thin, no further work is recommended for this site.

Shovel Test Pits 1-22 were excavated near the Conrail crossing at the northern end of the parcel and produced only a few historic artifacts. Soils were eroded and those shovel tests excavated near the railroad tracks exhibited disturbed contexts. The realignment in the Proposed Right-of-Way begins south of the railroad tracks, and this shift was pedestrian surveyed due to improved visibility within this new section of Proposed Right-of-Way. Historical background research indicated a structure believed to be an agricultural tenancy (Custer, Jehle, Klatka, and Eveleigh 1984) at the intersection of Route 13 and the railroad tracks (Baist 1893, Figure 8). No historic artifacts or architectural debris were identified in this area. Road and/or railroad improvements probably destroyed any archaeological remains pertaining to this structure. Assorted historic artifacts were observed as a thin field scatter throughout the parcel. No historic artifact concentrations were observed.

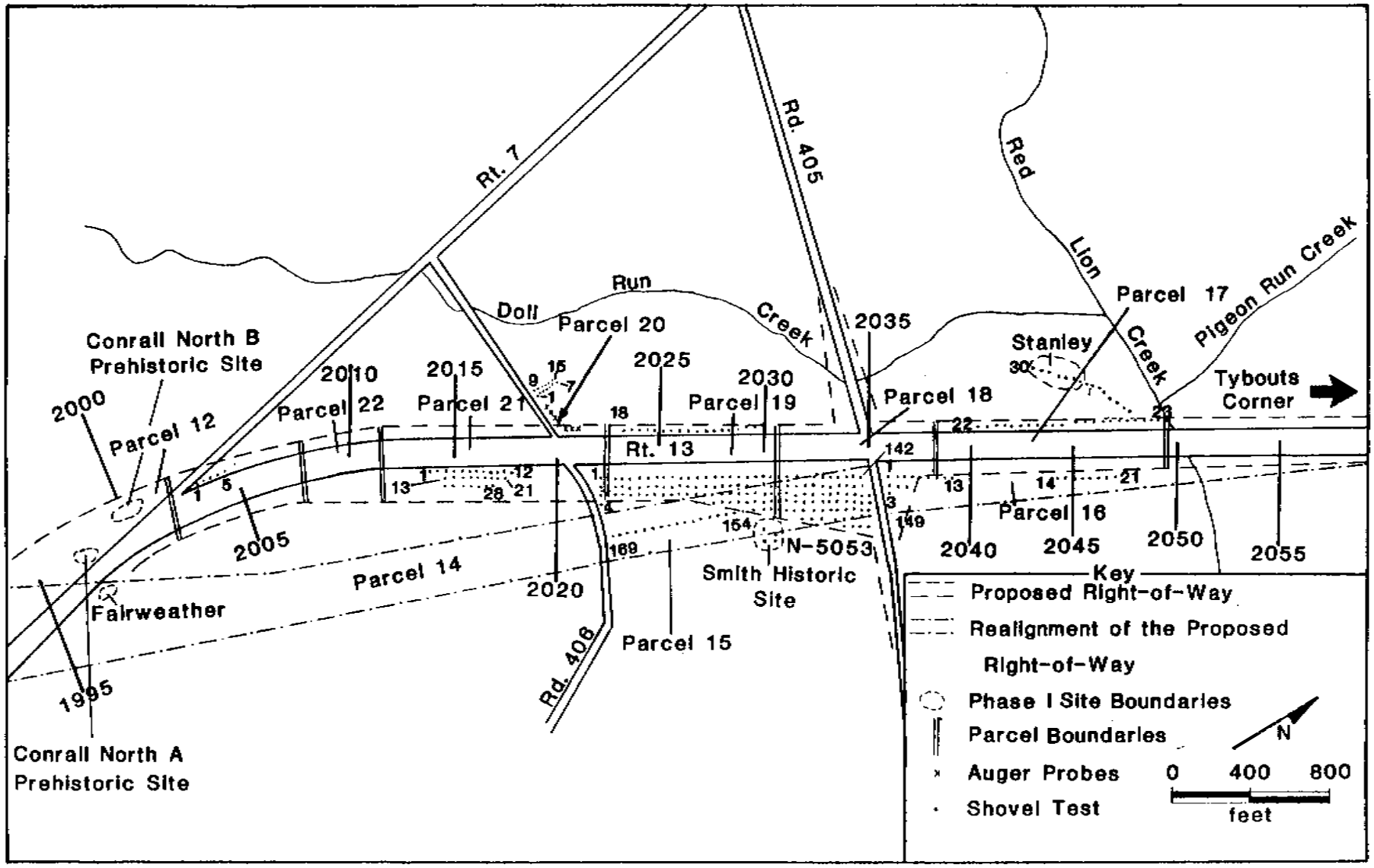
Figure 15 illustrates the old and newly Proposed Alignments within this parcel and both alignments were subjected to a cultural resource survey. The original Proposed Alignment follows the trunk of existing Route 13 and includes a proposed access road which would parallel the main trunk of the road.

PARCEL 12 - CONRAIL NORTH FIELD

Figures 15 and 16 illustrate the Proposed Right-of-Way including the shift in the alignment in this parcel and the

FIGURE 16

Map of Parcels 12(partial), 14-23: STAs 1995-2055



artifact scatter locations. The length of this parcel is 1200 feet and extends from the Conrail railroad tracks to the present intersection of Route 7 and Route 13. Since surface visibility was excellent, the survey method consisted of a pedestrian survey which identified two areas of prehistoric artifacts, 7NC-E-94 (Conrail North A) and 7NC-E-95 (Conrail North B).

The Conrail North A Prehistoric Site, 7NC-E-94, is located on a small northeast-southwest trending knoll bisected by Route 13. It lies next to an ephemeral drainage adjacent to Route 13 and approximately 800 feet north of the railroad tracks. Prehistoric artifacts were also identified on the remaining portion of the knoll on the northeast side of Route 13 (labelled 7NC-E-96) and may represent an extension of this site. Artifacts identified from site 7NC-E-94 consisted of a quartz late stage biface reject and three fire-cracked rocks.

The Conrail North B Prehistoric Site, 7NC-E-95, is located on a gentle slope approximately 300 feet north-northeast of the 7NC-C-94 site. Artifacts identified included one quartz stemmed Woodland I projectile point fragment (collected), one quartz flake, and four fire-cracked rock. Because the site appears to be so thin, no further work is recommended.

The alignment, as originally proposed, followed existing Route 13 from the present intersection of Route 7 and Route 13 to the north end of the Project Area. A shift in the alignment has moved the Proposed Right-of-Way to the east of existing Route 13. Both 7NC-E-94 and 7NC-E-95 were going to be impacted with the original Proposed Alignment. However, with the alignment shift, these sites are no longer going to be impacted. The western edge

of the new Proposed Alignment appears to be located adjacent to the preliminary site boundaries established for the 7NC-E-94 site. No further work is recommended for this parcel because no artifacts were found in good context.

Parcels 17 through 23 (north to south) are located on the west side of existing Route 13 and are no longer part of the Proposed Alignment due to its shift to the east. These parcels were surveyed as part of the original survey based on the initial Proposed Right-of-Way. A brief discussion of these parcels is presented, even though impact due to road construction is no longer a threat. No further work is recommended at this time. The following discussion of these parcels is presented in the usual south to north progression.

PARCEL 23 - FAIRWEATHER MARINE YARD

Parcel 23 is a triangle of land located at the intersection of existing Route 7 and Route 13 (Figures 15 and 16). A total of four shovel tests were excavated. Shovel Test Pit 2 had a brown silty clay plowzone overlying a yellow brown silty clay. The remaining shovel tests showed evidence of severe disturbance, including stripping of the plowzone, highly compacted subsoils, buried blacktop, and other materials. No further work is recommended.

PARCEL 22 - HEMPHILL YARD

Parcel 22 is 300 feet in length and was subjected to shovel testing within the Right-of-Way (Figure 16). A total of six shovel tests were excavated. Soils consisted of unplowed, intact

fine brown sands overlying yellow brown sandy subsoil with some pebbles. All shovel test pits were culturally sterile. No further work is recommended.

PARCEL 21 - NIBLETT FIELD

Figure 16 illustrates this 950 foot portion of the Proposed Alignment. Historic atlases (Beers 1868, Figure 7; Baist 1893, Figure 8) indicate a structure was located on the southwest corner of the intersection of Route 13 and New Castle 406. Access onto the parcel was delayed due to the harvesting of a wheat crop. A pedestrian survey along the east edge of the field in the vicinity of the intersection failed to identify any cultural materials. The shift in the Proposed Alignment negated any further work on this parcel. However, if future DelDOT right-of-way proposals affect this intersection, then a Phase I excavation program of this field should be undertaken.

PARCEL 20 - BLASCHKO WOODLOT AND YARD

Field survey methods for this parcel consisted of auger probing as well as shovel testing (Figure 16). Two areas within this parcel were examined. The first area was that portion of the 350 foot Right-of-Way adjacent to Route 13. The second was a woodlot adjacent to a proposed cul-de-sac on New Castle 406. Historic atlases (Beers 1868, Figure 7; Baist 1893, Figure 8) indicate that two structures were present on the north side of the intersection of Route 13 and New Castle 406. Presently, a metalworking shop, Hickory Metal Specialties, is located northwest of the intersection. Informant interviews with the shop owner, Mr. Blaschko, indicated that large portions of the

yard had been disturbed when a well, a septic system, and an underground geothermal heating system were installed on the premises. Auger testing confirmed the disturbances and indicated the area of interest has been modified entirely. Shovel testing in the woodlot north of and adjacent to the proposed cul-de-sac produced a few whiteware and redware fragments, one pearlware fragment, many fragments of unidentifiable melted glass, nails, and miscellaneous metal fragments. No intact structural remains were located. The artifacts recovered date to the late 19th and early 20th century and the majority were burned. Soil stratigraphy in the shovel test pits consisted of a brown silty clay overlying yellow brown to orange brown sandy subsoils. Because all of the artifacts appeared to have come from a thin sheet midden associated with burn piles and were not associated with any intact subsurface features, no further work is recommended for this parcel.

PARCEL 19 - STATE OF DELAWARE WOODLOT

Figure 16 illustrates the shovel testing conducted on this parcel. Located in this 775 foot parcel are two large borrow pits. Shovel testing was restricted to the Proposed Right-of-Way and shovel test pits were placed between Route 13 and the borrow pits. A total of 18 shovel test pits were excavated. One redware fragment was recovered. Soil stratigraphy exhibited plowzones, disturbed plowzones, and non-plowed profiles. Plowzones, when present, consisted of brown sandy loams. Subsoils consisted of orange brown or yellow brown sandy clays with gravels and some of the subsoils were very compacted. No

artifacts in good context were recovered from any of the shovel test pits excavated in this parcel and no further work is recommended.

PARCEL 18 - LESKI WOODLOT

Figure 16 illustrates the location of this 800 foot parcel. Access was denied by the owner. However, a roadside visual inspection and map reconnaissance revealed the parcel was largely Doll Run floodplain with a gentle rise of dry ground in the south end of the parcel. Strong potential exists for locating buried prehistoric cultural materials on the aforementioned gentle rise and should the Proposed Right-of-Way be shifted back into the Leski property, then Phase I investigation would be recommended.

PARCEL 17 - STANLEY WOODLOT

Figure 16 illustrates Parcel 17 and the shovel testing conducted on this parcel. This parcel extends from a property boundary north 1250 feet to Red Lion Creek. Doll Run, a small tributary of Red Lion Creek, is located approximately 350 feet west of existing Route 13 and flows roughly parallel to the highway.

A total of 22 shovel test pits were excavated within the Proposed Right-of-Way. The majority of these shovel test pits contained no cultural materials. Artifacts recovered from the few non-sterile holes consisted of modern glass fragments, brick, miscellaneous metal, one late 19th century fragment of ironstone (Decalcomania transfer-printed), and one fire-cracked rock (Shovel Test Pit 20). A variety of soil profiles were present,

including brown silty clays overlying gray silty clays and mottled orange yellow and gray silty clays (road fill) overlying compacted gray clays. Shovel Test Pits 13, 14, and 20 had soil profiles exhibiting a fill layer overlying old plowzone soils. Property owners at the south end of the parcel mentioned that substantial amounts of fill had been brought in for their homes to raise the land surface above the Doll Run floodplain. Shovel Test 22 was abandoned due to driveway fill.

An additional transect of shovel test pits was excavated following a low bluff/terrace edge along Red Lion Creek and Doll Run. A total of 16 shovel test pits (Nos. 23 to 38) were excavated which resulted in the identification of the Stanley Prehistoric Site, 7NC-E-97. Shovel Test Pit 32 produced two fire-cracked rock, Shovel Test Pit 33 produced one quartz flake and one chert core, and Shovel Test Pit 38 produced one quartzite flake. Shovel Test 37 recovered one chert core, a quartz flake, and one large ironstone non-diagnostic tool that had been bifacially worked on only the edges. In addition, Shovel Test Pit 37 uncovered <u>in situ</u> fire-cracked rock comprising a hearth associated with the above mentioned artifacts. No carbon was identified and only a few pieces of fire-cracked rock from the hearth were collected. Soil stratigraphy on Shovel Test Pit 37 consisted of a thin humus overlying a yellow brown silty clay. Excavation was halted in this shovel test pit when the hearth was encountered. Because site 7NC-E-97 is located just outside the original Proposed Right-of-Way, no further work is recommended at this time. However, should the Proposed Right-of-Way be shifted back onto this property, the Right-of-Way would have to be re-

examined to evaluate its impact on the Stanley Site.

PARCEL 14 - TEXACO FIELD AND WOODLOT

This portion of the shifted Proposed Right-of-Way is 2800 feet in length and begins just south of the existing intersection of Route 7 and Route 13 and extends north to New Castle 406. Surface visibility was good during the pedestrian survey of the originally Proposed Alignment. A small prehistoric site, 7NC-E-96 (Fairweather Site), was identified on knoll which is probably an extension of the knoll in Parcel 12 which contained 7NC-E-94, another small prehistoric site. Artifacts collected consisted of two utilized flakes, one of quartz and one of chert. The few numbers of artifacts identified from the site preclude the need for further work and no Phase II excavation is recommended.

A total of 28 shovel test pits were excavated in a wooded section of the original alignment adjacent to Route 13 (Figure 16). This woodlot contained 20th century artifacts including some intact cinder block and concrete floor architectural remains. Artifacts recovered from the shovel test pits included whiteware and window glass fragments. A chert flake was recovered in Shovel Test Pit 5 from a layer of fill. An historic archival search of early atlases, maps, and other materials produced no indication of any early historic structures. In fact, an abrupt change in land elevation is noted along the southern edge of the woodlot and suggests this area was used for borrow. No further work is recommended for this site. In addition, a realignment of the Proposed Right-of-Way no longer impacts this woodlot.

A survey of the remainder of the old Proposed Alignment produced two isolated finds, each consisting of one piece of fire-cracked rock. A pedestrian survey of the realignment of the Proposed Right-of-Way identified additional prehistoric artifacts. Surface visibility was limited, less than 50 percent, but adequate enough to properly investigate this parcel. One chert biface and one chert flake were collected from an eroded knoll located approximately 500-600 feet south of New Castle 406. The chert biface is a bifacially worked flake which could have been used as a scraper or a knife, although it lacks evidence of use-wear. No further work is recommended here due to the very low numbers of artifacts and the eroded soil conditions.

PARCEL 15 - SMITH WOODLOT

Figure 16 illustrates the Proposed Right-of-Way and its realignment and includes the extensive shovel testing conducted on this parcel. Parcel 15 is defined by New Castle 405 and 406 and is 1500 feet in length. The original Proposed Alignment included the main trunk of existing Route 13 and a continuation of the access road from Parcel 14 which joins New Castle 405. The realignment of the Proposed Right-of-Way consists only of the main trunk of the proposed Route 13. The original Proposed Right-of-Way was quite wide to accommodate the access road and was subjected to extensive shovel testing.

Shovel testing within the original Proposed Right-of-Way produced very few cultural materials. Artifact types included whiteware, assorted glass fragments, nails, and brick. A few stoneware and redware fragments were also collected. An

unidentifiable feature was encountered in Shovel Test Pit 12. This consisted of a homogenous brown sandy soil with a few carbon flecks capped by a thin yellow sandy clay fill layer. This feature will no longer be impacted due to the realignment. Shovel testing within the realignment of the Proposed Right-of-Way was restricted to the centerline due to the relatively few artifacts collected from the above mentioned shovel testing. One quartz flake was recovered from the plowzone in Shovel Test Pit 167.

A previously recorded historic archaeological site (CRS# N-5053, site 7NC-E-98) was located at the northern end of the parcel and included brick and architectural remains (Plate 1). A series of three photographs taken by the Bureau of Archaeology and Historic Preservation in March, 1979 show a dilapidated, two-story, 4-bay frame structure with a low hipped roof and a two-story, 2-bay frame wing on the west end (Plates 2 through 4). The chimneys are located on the east and west ends. Two story porches were located on both the north and south elevations. Apparently the structure was razed shortly after that date. The open stone foundation and the two chimney piles are all that remain and the entire site is now heavily overgrown with grasses, vines, and shrubs. This site is believed to be a pre-1849 agricultural complex (Custer, Jehle, Klatka, and Eveleigh 1984) and has been labelled the Smith site. The east edge of the original proposed new alignment came within 75 feet of the structural remains and the proposed shift in the alignment brings the east edge of the Right-of-Way to within 12 feet of the

PLATE 1

Architectural Remains from Parcel 15,

U.S. 13 Relief Route, Phase I Survey

PLATE 2

7NC-E-98, N-5053, South Elevation;

Structure Razed about 1980

PLATE 3

7NC-E-98, N-5053, South Elevation;

Structure Razed about 1980

PLATE 4

7NC-E-98, N-5053, North Elevation;

Structure Razed about 1980

open house foundation. Artifact counts increased slightly in those shovel test pits excavated closer to the architectural remains, and the highest number of artifacts came from the five shovel test pits located around these remains. Artifacts recovered from these shovel tests included whiteware, redware, and stoneware fragments, bottle and window glass, brick, nails, and other materials. All of the recovered artifacts seem to post-date 1840.

Soil stratigraphy exhibited by the shovel testing consisted of brown sandy or silty plowzones overlying orange brown sands with gravels, orange brown to yellow brown silty clays, or orange brown silty sands with gravels. Shovel tests excavated around the structural remains exhibited a thin humus layer overlying brown silty clay plowzone. Below this plowzone, soils consisted of orange brown to yellow brown compacted silty clays. Phase II work is recommended for this site to locate and identify archaeological features associated with the structural remains.

PARCEL 16 - RED LION CREEK FIELD AND WOODLOT

Parcel 16 was subjected to both pedestrian survey and shovel testing. This parcel extends from New Castle 405 to Red Lion Creek (Figure 16). The realignment of the Proposed Right-of-Way merges with existing Route 13 in this parcel. The Right-of-Way consists of the main trunk of the proposed Route 13 and is 1500 feet in length.

The pedestrian survey was conducted in a cultivated field adjacent to a narrow woodlot and an overgrown fallow field. Surface visibility was moderate. A total of 21 shovel test pits

were excavated in the poor visibility areas. The pedestrian survey combined with the shovel testing produced three quartz artifacts, all of which came from the plowzone. One of the pieces of quartz has no cortex but resembles a medial section of an early stage biface reject. Soil stratigraphy in the shovel tests consisted of a brown silty or sandy clay plowzone overlying orange or yellow brown clayey sands with gravels. The northern end of this parcel has been disturbed by electrical transmission towers and an electrical transformer site. Based on the low numbers of artifacts found throughout the parcel and their plowzone locations, no further work is recommended.

INTERPRETATIONS AND CONCLUSIONS

This section of the report will summarize the cultural resources recovered during the Phase I survey of the Chesapeake and Delaware section, Odessa Segment, of the proposed Relief Route. Table 2 lists the findings by parcel number and survey station number and Figure 17 shows the sites found during the Phase I survey.

IMPLICATIONS FOR REGIONAL ARCHAEOLOGY

The Phase I archaeological survey of this segment of the proposed Route 13 Relief Route identified only one historic archaeological site and twelve prehistoric archaeological sites. The locations of the all sites identified by the survey can be studied for meaningful insights.

The single historic farmstead identified in the survey, 7NC-E-98, will likely address only one of the historic themes identified previously. The site apparently dates to the second