

APPENDIX F: PROPOSAL AND DATA RECOVERY PLAN

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February 4, 2013

Mr. David S. Clarke
DelDOT Archaeologist
Department of Transportation
P.O. Box 778-800 Bay Road
Dover, Delaware 19903

Re: Revised Proposal/Phase III Archaeological Data Recovery at the Warwick Site, Cecil County, Maryland (18CE371).

Dear David:

Dovetail Cultural Resource Group (Dovetail) is pleased to submit the enclosed proposal for a data recovery excavation at the Warwick Site (18CE371) in Cecil County, Maryland. The proposal is based on information obtained during our December 5, 2012 meeting, our January 7, 2013 conference call, and comments from both the Maryland Historical Trust and the Maryland State Highway Administration emailed to Dovetail on January 18, 2013. The document includes an abbreviated research design, scope of work with project maps, schedule, budget, and all other required proposal components.

As Dovetail is a certified Disadvantaged Business Enterprise (DBE) with the Delaware Department of Transportation (DelDOT), we will not require subconsultants to meet our DBE goals for this project (DBE Certificate #C-839). However, we have engaged Justine McKnight (www.archeobotany.com) to complete the flotation study for this project. Ms. McKnight is also a DBE-listed firm in Delaware. The work will be completed under DelDOT Parent Agreement 1534 as Task 9.

If you have any questions on this material or modifications to the scope, please do not hesitate to contact me or Mike Carmody at (540) 899-9170.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Kerri S. Barile".

Kerri S. Barile, Ph.D.
President

PROJECT BACKGROUND

The Warwick site (18CE371) is located south of Middletown, Delaware along existing Route 301 and just southwest of the Delaware/Maryland state line (Figure 67). The site is on the east side of the existing Route 301 corridor in a vegetated area dominated by young deciduous trees (Figure 68). Although the site is located within the State of Maryland, the larger 301 project is being conducted under the auspice of the Delaware Department of Transportation (DelDOT). As such, DelDOT, the Maryland Historical Trust (MHT), and the Maryland State Highway Administration (SHA), are involved in the dialogue on this resource.

The Warwick site was the subject of a Phase IA survey by Richard Grubb and Associates (Grubb) in 2008 and 2009 (Grossman-Bailey and Hayden 2009), a Phase IB by Grubb in 2009 and 2010 (Grossman-Bailey 2010) and Phase II investigation by Grubb in 2011 (Grossman-Bailey et al. 2011). Archaeological research conducted to date suggests that the resource is a small (12 x 20 meter [39.4 x 65.6 ft]) prehistoric temporary campsite (Figure 69). Stratigraphy comprises a thin layer of detritus over plow zone, which overlays subsoil. In total, 38 artifacts were recovered during the Phase IB study and 382 artifacts were found during the Phase II testing (Grossman-Bailey 2010:43; Grossman-Bailey et al. 2011:4-16).

Although the assemblage is primarily dominated by jasper, chert, and quartzite debitage and fire-cracked rock (FCR), several projectile points and other tools were recovered during the Phase IB and II work (Table 19). Initial subsurface survey by Grubb recovered stemmed Lamoka and Piscataway points made of jasper. Similarly, the Phase II testing also uncovered several small stemmed points classified as Lamoka, Bare Island, and Poplar Island made of jasper, chert, and quartzite. Other tools include preforms, bifaces (possibly knives), utilized flakes/scrapers, and a sandstone hammerstone. Similar tool assemblages have been uncovered on sites dating from the Middle Archaic through the Middle Woodland periods, although they are more often associated with Late Archaic through Early Woodland I campsites (e.g., Custer 1996; Ritchie 1971).

No features were noted during the Phase I survey, despite the excavation of 41 systematic shovel tests and one test unit. One possible feature was found during the excavation of an additional 25 test units at the Phase II level. Located near the center of the site, Feature 1 possibly represents the base of a truncated prehistoric storage/refuse pit. Four microflakes and charcoal flecks were found during floatation of the feature soil, although no artifacts were recovered during standard soil screening on site (Grossman-Bailey et al. 2011:4-28).

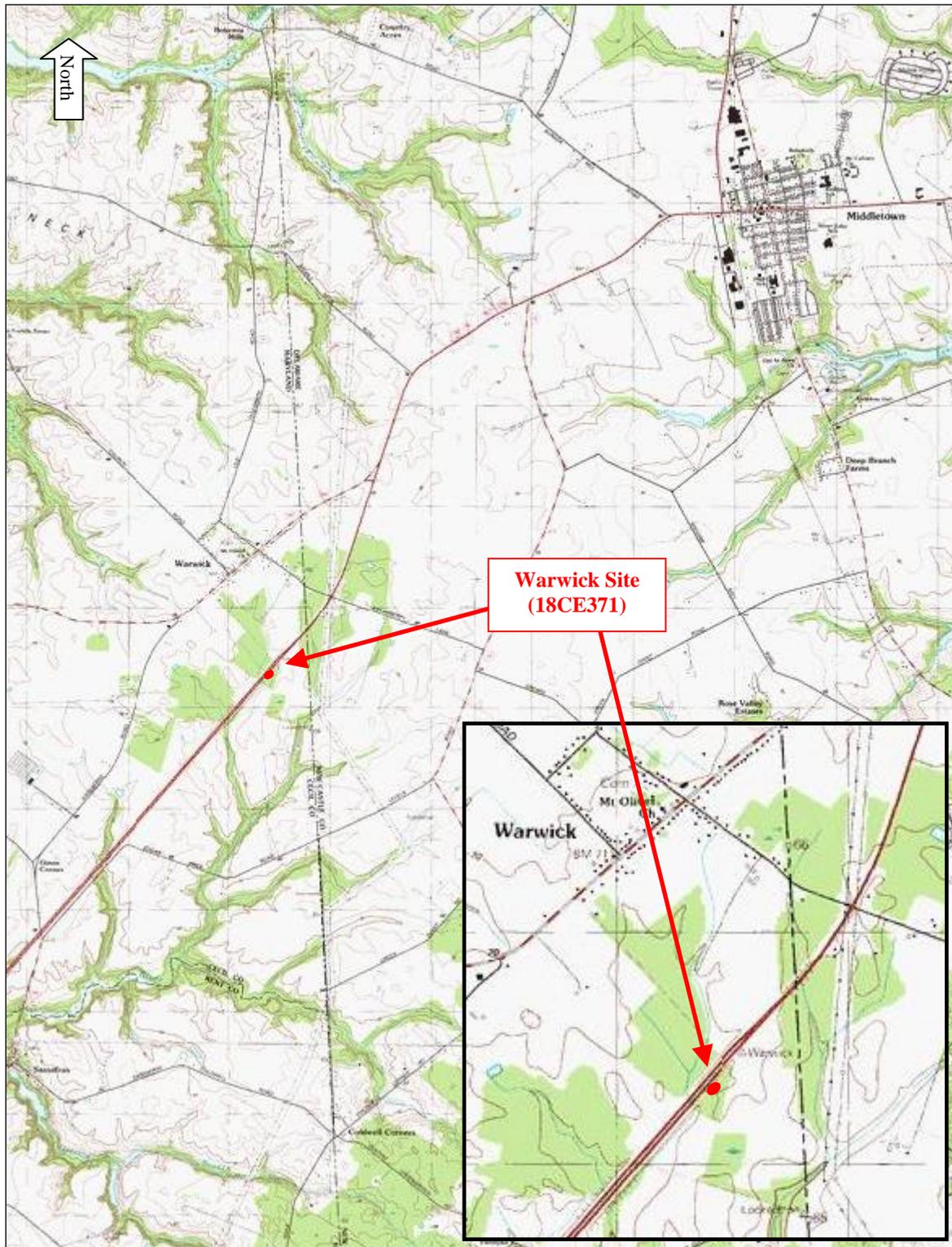


Figure 67: Location of the Warwick Site on the Cecil, Maryland United States Geological Survey (USGS) 7.5-Minute Topographic Map (in Red). A close up view is inset.

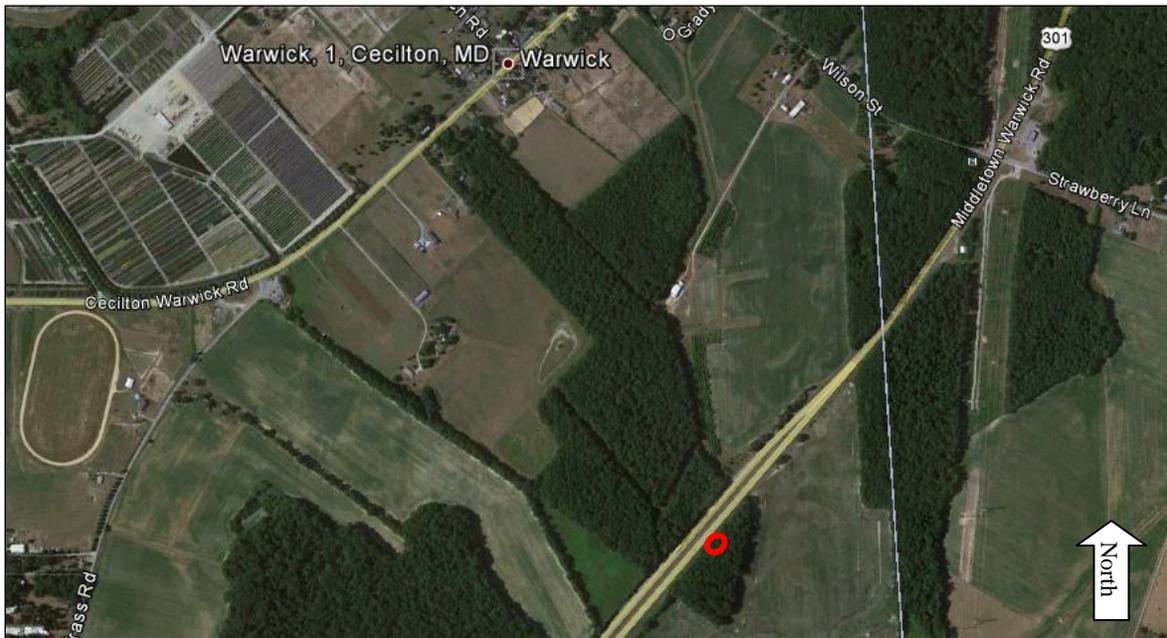


Figure 68: Aerial View of the Warwick Site Location (in Red).

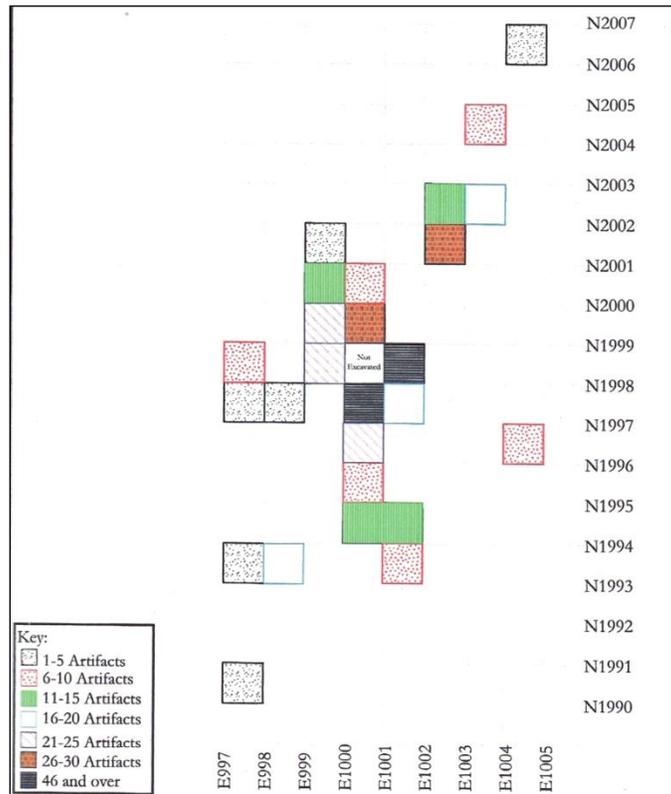


Figure 69: Grubb Phase II Artifact Distribution at the Warwick Site (Grossman-Bailey et al. 2011:4-21).

Table 19: Summary of Artifacts Found During Phase I and II Work at the Warwick Site.

Artifact Type	Material(s)	Quantity
Projectile Points (Lamoka, Bare Island, Poplar island, and Piscataway)	Jasper, Chert, Quartzite, Quartz	12
Bifaces	Jasper, Chert	4
Other Tools	Sandstone, Jasper, Chert	7
Debitage	Jasper, Chert, Quartzite, Quartz, Sandstone, Argillite, Siltstone	319
FCR	Quartzite, Sandstone	77
Core	Chert	1
Total		382

Upon review of the archaeological work completed by Grubb, the MHT, in consultation with DelDOT, concurred with the firm's suggestion that the site was eligible for the National Register of Historic Places (NRHP) under Criterion D for its ability to reveal information on the area's prehistoric past. Although several similar sites have been explored through data recovery excavations in nearby Delaware, there have been no Phase III studies on small Late Archaic/Early Woodland sites in northeastern Maryland (Clarke, pers comm). Among the research topics that can be addressed through an analysis of the subsurface remains are (to be expanded within the full data recovery report):

- *General artifact analysis to include basic macro lithic, FCR, and potential ceramics* — Typological and attribute-based analysis of prehistoric artifacts will combine traditional, type-based dating and description with an examination of variation and similarity within and between artifact types. Flaked- and ground-stone tools,debitage, fire-cracked rock, ceramics, and other artifacts will be returned to the lab for processing and analysis. Selected artifacts, particularly artifacts recovered from features, will be analyzed in greater detail using simple tools (e.g., calipers, low-powered microscope), refitting, and other methods.
- *Temporal affiliations of site occupation and subsurface features at the site* — Analysis of site occupation will rely, to the extent the data allow, on a combination of absolute dating, temporally diagnostic artifacts, and analysis of the overall assemblage. Charred organic material recovered from secure contexts, like prehistoric cultural features or residue adhering to sherds, will be submitted

for radiocarbon dating; other methods, like thermoluminescence, may be used if appropriate. In addition, analysis of occupational intensity and duration based on artifact and feature density and diversity will be undertaken.

- *Site function* — Analysis of site function will consider the composition of the assemblage, the distribution of artifacts of different types, and patterned variation in the attributes of artifacts. Relevant issues include: the redundancy of land-use patterns; the organization of technology; the social composition of mobile groups; exchange relations; and the structure of activity organization at small sites occupied by mobile peoples. An analysis of the distribution of features and various artifact categories will attempt to evaluate: 1) the range of activities represented by the assemblage; 2) the within-site spatial organization of activities; 3) the duration of occupation at the site; and 4) the link between regional settlement systems and the Warwick site.
- *Analysis of intra-site organization* — The analysis of spatial variation in several classes of data will be interpreted in light of models of site structure derived from studies of living hunter-gatherers. The spatial distribution of different categories of artifacts and features may provide insight into the spatial organization of activities within the site, site maintenance, intended and actual length of the occupation, and the extent of reuse of the setting over time. In general, site maintenance often removes material that impedes other activities from the main living area to the fringes of the site. The absence of site maintenance, therefore, points to short-term occupations, while the co-occurrence of evidence for activities that potentially interfere with each other (e.g., food processing and early stage tool manufacture) implies repeated use of the site for different purposes. Moreover, intra-site spatial organization reflects group mobility.
- *Analysis of raw material type and procurement strategies* — The type, variety, and attributes of raw materials recovered from the site, in particular lithic material, provides insight into mobility, exchange, and production strategies. Quartz and quartzite are widely available, and a range of materials may occur as cobbles, but outcrops of some materials, notably felsites and cryptochryallines, occur to the north and west, and ironstone outcrops near the head of the Chesapeake Bay. Analysis of the production stage of tools and debitage by material type and extent of and type of cortex, as well the type of materials used as formal and expedient tools, potentially sheds light on mobility, exchange, and procurement strategies.
- *Study of site soil chemistry and ethnobotanical patterns (based on field results)* — The subsistence economy constitutes a core aspect of social organization. Therefore, the collection of information about the subsistence base of the society is critical for any study of the past. Soil samples will be collected from cultural features, living surfaces, and from selected soil profiles for fine-grained processing, including flotation and the analysis of soil chemistry. Moreover, flotation produces material for the study of macrobotanical remains, for

- radiocarbon dating, and collects often overlooked categories of faunal remains, such as fish scales.
- *Investigation of site depositional characteristics and taphonomy* — Analysis of the soils at the Warwick Site during the Phase II fieldwork identified a circa 100-year-old plow zone (Ap) overlying B horizon soils. The analysis of artifacts and features will build upon this insight. In addition, soil cores will be recovered across the site, and analysis of soil chemistry by Andrew Wilkins of the University of Tennessee potentially addresses the relationship, if any, between past land use, natural and cultural formation processes, and the distribution of various types of artifacts and features across the site.
 - *Regional comparison to other Late Archaic/Early Woodland sites* — The analysis of any single site produces a biased view of past societies, particularly societies characterized by high mobility. A study of previously identified sites dating to the relevant time periods will be undertaken. The analysis will focus on the attributes of sites and assemblages in the Delmarva Peninsula, but will necessarily reference broader trends observed elsewhere in the Middle Atlantic Region.

Data examined above will be postulated through an ecological and processual framework. The cultural landscape results from the interplay of regional ecology, social organization, the subsistence base of the society, and the symbolic value accorded different settings. Therefore, excavations at single sites provide only partial insight into social organization. Nevertheless, a number of theoretically important issues can be addressed through the analysis of data from single archaeological sites, if placed within a broader temporal and spatial context. Relevant issues include: the redundancy of land-use patterns; the organization of technology; the social composition of mobile groups; exchange relations; and the temporal and spatial structure of activities at various sites.

To address these issues, the archaeological work will examine the distribution of artifacts of different types and patterned variation in the attributes of artifacts within the Warwick Site (18CE371) in light of models of site structure derived from studies of living hunter-gatherers. In addition, the attempt to address landscape use and social transformation requires analysis of archaeological data at multiple spatial and temporal scales, as well as an examination of the environmental niches occupied by similar archaeological sites. The regional environment includes archaeological evidence of short-term occupation for varying purposes, base camps occupied by larger groups for longer periods of time, the location of regional aggregations, and persistent places where past peoples returned again and again over millennia.

Because construction of Route 301 (the undertaking) will adversely effect the criteria that render this site eligible for the NRHP, the MHT and DelDOT have determined that the adverse effect should be mitigated through a data recovery excavation. This proposal outlines the tasks that will be completed as part of this mitigation effort. Based on dialogues with DelDOT and an inspection of Grubb's previous archaeological work, the mitigation will comprise five tasks: project coordination and field preparation, additional

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background literature research on prehistoric sites in the region, fieldwork to include the excavation of additional units and the investigation of features, all lab work including artifact processing, analysis and curation using State of Maryland curation guidelines, production of a draft and final data recovery report, and completion of all applicable State of Maryland archaeological site forms.

PROPOSED SCOPE OF SERVICES

To address the possible site research questions and mitigate the undertaking's adverse effects to this resource, the following will be performed by Dovetail on the Warwick site. Dovetail has read the project Memorandum of Agreement (MOA) for this project, and we are committed to fulfilling Stipulation 1.A. of this document requiring the completion of archaeological studies along the corridor to identify and evaluate historic properties within the project Area of Potential Effect (APE) and mitigate project adverse effects to eligible sites. In accordance with the MOA, work will comply with Section 106 of the National Historic Preservation Act and its regulations (36 CFR 800), and all work will be performed in accordance with the Secretary of the Interior's (SOI) *Standards and Guidelines for Archaeology and Historic Preservation* and the *Standards and Guidelines for Archaeological Investigations in Maryland* (1994) issued by the MHT.

All project services will be completed by professionals who meet the SOI guidelines on cultural resource personnel. The Principal Investigator for the work will be Mr. Michael Carmody, aided by Senior Archaeologist Dr. Mike Klein. Mr. Carmody and Dr. Klein are qualified under the SOI guidelines as an archaeologist (their resumes are attached to this proposal). They will be aided in the field by Dovetail Project Archaeologists, Crew Chiefs, Technicians, Laboratory Manager, Interns, Graphics Specialists and Administrative Staff.

Subtask A: Project Coordination, State Permit and Preparation for Public Outreach Initiatives

Dovetail will closely coordinate with DelDOT and the MHT regarding the project. This coordination includes scheduling the fieldwork and disseminating the results of the survey upon completion through telephone calls and emails. As requested, Dovetail will submit a summary of work to DelDOT every Friday as the project is underway. In addition, DelDOT will be cc'd on all emails sent to other parties, such as Grubb or Century Engineering, on this project. Dovetail will also participate in weekly on-site meetings with DelDOT during the field investigation and DelDOT will be consulted during and after each phase of work. Lastly, all Delaware invoices will be prepared according to DelDOT standards.

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Prior to any fieldwork, Dovetail will apply for a State of Maryland archaeological permit to excavate on state lands, pursuant to State Finance and Procurement §5A-342 of the Annotated Code of Maryland. The State Terrestrial Archeologist will be contacted to acquire a permit template and the appropriate documentation will be submitted for state approval.

Also as part of this task, Dovetail will gather and prepare public outreach documents to be used during the fieldwork. In particular, the team will craft a double-sided handout that can be disseminated to all field guests and also uploaded to the DelDOT webpage as a .pdf document. The handout will measure 21.6 x 27.9 centimeters (8.5 x 11 in) and be printed in color. Accompanying the handout, Dovetail will also design a 61.0 x 91.4 centimeter (24 x 36-inch) poster that contains additional information and imagery from previous work at the site. The poster will be printed in color and mounted on foam board for easy installation at the entrance to the dig area. The board will be clipped to a flat backing mounted on a metal stake and be put up and removed each work day. This methodology has proved successful at other data recoveries completed by Dovetail with a public outreach initiative, such as the nearby Armstrong-Rogers site. The goal is to provide additional information to visitors while also providing a visual “stopping place” for guests to wait while site staff mobilizes to speak to the arriving group. As another form of printed media, Dovetail will get additional copies of DelDOT’s new cultural resource brochure to also hand out as part of this work, along with copies of the Route 301 flyer already in hand.

Concurrent with this work, Dovetail will reach out to the Maryland Commission on Indian Affairs, Nause Waiwash Band of Indians, Archaeological Society of Delaware (ASD), and the Archaeological Society of Maryland (ASM) prior to fieldwork. The Nause Waiwash, in particular, will be invited to visit the dig.

Subtask B: Additional Background Literature Review and Research

A background literature and records review on prehistoric sites in the general vicinity was completed by Grubb during their Phase I and II investigations at the site. To augment this investigation, Dovetail will conduct additional research on prehistoric archaeological sites and artifacts in the region and area environmental conditions. Details related to the site research topics will be gathered on nearby prehistoric sites in Maryland and Delaware to create a cultural context for the remains. Information on the archaeological findings as well as the archaeological process will help evaluate the Warwick site both as a prehistoric campsite and as an archaeological resource. Among the documents to be examined include reports on archaeological testing and data recovery efforts on prehistoric sites, site forms, scholarly articles and books written on prehistoric lifeways and archaeological topics in this region, recovered collections, and other materials. Part of this task will also include an examination of the MHT’s *Archeological Synthesis Project* and consultation with its developer, Matt McKnight (MHT Research Archaeologist).

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Depending on the information uncovered during this research and subsequent fieldwork, it is possible that individuals with extensive knowledge on the prehistory of this area may be consulted for additional information. These individuals could include, but are not limited to, Dr. Jay Custer, Carol Ebright, Dr. John Seidel, Dr. Darrin Lowery, and Dan Griffith. Ilene Grossman-Bailey with Grubb will also be an invaluable resource, as they are the firm who led the initial fieldwork and archaeological testing at this site, respectively.

Subtask C: Phase III Fieldwork and Public Outreach

Phase I survey and Phase II testing were completed through the excavation of systematic shovel testing and the excavation of 26 test units. Through this process, approximately 19 percent of the site has been excavated. Because of the small size of the Warwick site and the shallow soil deposits, additional excavations will continue using the methodology established during previous work and include the excavation of test units and the exploration of uncovered features. Because geoarchaeological studies were completed by Raymond Mueller during the Phase II investigation, no geoarchaeology is included within this proposal. However, the team will consult the publications of Drs. Dan Wagner and Darrin Lowery during the process, geoarchaeologists who have completed regional-level studies on the geomorphology and the sourcing of raw materials in this region and whose studies may contribute insight into the Warwick findings.

After receipt of final DelDOT project plans for this area and Grubb's GPS data on the site, Dovetail will reestablish the site grid developed by Grubb through use of field observation, hand-held GPS units, and a total station. Small saplings will be removed from the core of the site but no large-scale clearing or excessive tree removal will be conducted. Once the grid has been reestablished, the team will lay in test units for excavation. Most test units will measure 1 x 1 meter (3.1 x 3.1 ft). If deemed appropriate, test units may be placed adjacent to one another or in a checkerboard pattern to uncover details of area stratigraphy and landscape patterns.

It is estimated that up to 45 test units will be excavated at the Warwick Site during the data recovery. When combined with the previously excavated 26 units, removal of up to 45 test units during this phase of work assures that over half of the site is explored archaeologically as 71 of the possible 137 units will have been removed. The exact placement of the units will be determined in the field based on excavation results, but it is anticipated that units will be placed both within excavation blocks and on the periphery as sample units to assure that the entire site is examined during this process (Figure 70).

Units will be excavated in natural levels. Where natural levels exceed 10 centimeters (4 in), arbitrary 10-centimeter (4-in) levels will be excavated to provide vertical control of the recovered artifact assemblage. All soils will be screened through 0.6-centimeter (1/4-inch) mesh. Should soils appear to contain microdebitage or faunal/floral remains, screen size will switch to 0.3 centimeters (1/8 inch). This decision will be conducted in the field in consultation with DelDOT. All cultural material recovered during the investigation will

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be collected and bagged according to provenience. Profile photographs will be taken and scaled drawing made of at least one wall from each unit.

If features are encountered, they will be exposed horizontally, photographed, and drawn using scaled measurements. Depending on the size of the feature, they will be bisected and excavated in arbitrary 10-centimeter (4-in) levels or natural levels if they are less than 10 centimeters (4 in). The locations of all test units will be documented through both a total station and a hand-held GPS unit.

Concurrent with the test unit excavation, Dovetail will also conduct soil chemistry borings across the site. The exact quantity and location of borings will be determined based on field results. Tests will include soil phosphorous through wet soil chemistry analysis with a concurrent multi-analysis using portable x-ray fluorescence. The goal is to identify concentrations of phosphorus, potassium, calcium, and magnesium that can help identify activity loci and areas of prehistoric interest. Up to 75 soil samples will be taken during the excavation for a soil chemistry analysis. The samples, approximately 1 cup in size, will be sent to the University of Delaware agricultural department for analysis. Depending on field results, Carbon-14 dating samples may also be collected. This work will be done in consultation with DeIDOT and the MHT.

In addition, Dovetail will collect soil samples from up to 25 proveniences for flotation. Up to 50 liters of soil will be bagged and tagged according to standard methods for flotation analysis (up to 2 liters per sample). Flotation will be completed by Justine McKnight (www.archeobotany.com), with analysis of the materials completed by Ms. McKnight and Dr. Klein, with Ms. McKnight evaluating the organic materials and Dr. Klein working with any microdebitage that is recovered. The recovery of microdebitage (extremely small fragments of chipping debris associated with tool production or resharpening) may be crucial for the identification of areas where particular types of activities took place, as well as for determining the length of time a site was occupied (Fladmark 1982; Hull 1987; O'Connell 1987; Simms and Heath 1990). This follows from the ethnographic observation that site maintenance requires the removal of larger pieces that would have been underfoot if long periods of occupation occurred (Binford 1983; Nielson 1990).

Hull (1987:773) suggests that “correspondence or noncorrespondence of microdebitage and macrodebitage distributions can be interpreted using the following definitions:

- (1) Primary refuse is identified by a cluster of macrodebitage corresponding to a cluster of microdebitage.
- (2) Secondary refuse consists of macrodebitage with no corresponding cluster of microdebitage;
- (3) De facto refuse, although difficult to distinguish from primary refuse, should correspond to a microdebitage high density area while containing relatively large macroflakes and, possibly, more tools or tool fragments.”

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A fourth possibility, though somewhat remote, consists of microdebitage with no associated macrodebitage, representing a well-maintained activity area unaffected by refuse deposited when the site was abandoned (Stevenson 1991:279).

In the event that human remains are identified during the work, all archaeological investigations in the area of the burials will cease and DelDOT Archaeologist David Clarke (302-760-2271) will be immediately notified. If Mr. Clarke is unavailable, Kevin Cunningham of DelDOT (302-760-2125) will be our point of contact at the agency for human burial issues. Mr. Clarke or Mr. Cunningham will, in turn, contact Beth Cole with the MHT, the Maryland State Highway Administration, and the Maryland Commission on Indian Affairs (if applicable) as required under Maryland's Unmarked Human Remains Law (Title 10 Subtitle 4 §§10-401–10-404 of the Annotated Code of Maryland). If neither Mr. Clarke nor Mr. Cunningham are available within two hours, Dovetail will contact Ms. Cole directly to assure that a timely approach is under way. At this time, the MHT and DelDOT, in consultation with a medical examiner, will inspect the area and make a determination on additional work in the area. If necessary after consultation, a separate scope of work and cost proposal will be required to complete requirements in accordance with the protocols outlined in Maryland's Unmarked Human Remains Law.

Once the fieldwork has been completed, Dovetail will rent a cherry picker to capture overview images of the site. Once all work on the site has been completed, Dovetail will return to the area to backfill the study block.

Throughout this process, Dovetail will be in communication with DelDOT on the findings. A field visit will be arranged with DelDOT and the MHT at the conclusion of the excavation to discuss the project results. (*Note: If appropriate, additional field meetings between Dovetail, DelDOT, and the MHT may occur throughout the fieldwork to facilitate decisions on level of effort, locations of units, and other field-based topics.*)

Subtask D: Laboratory Analysis

All recovered artifacts will be retained for analysis; no artifacts will be discarded in the field. Large quantities of redundant materials, such as fire-cracked rock and oyster shell, will be weighed in the field but also retained for curation and subsequent lab-based analysis. If large quantities of artifacts with repetitive data are encountered, Dovetail will contact DelDOT, the MHT and the Maryland Archaeological Conservation (MAC) Laboratory to render a decision on suitable discard and long-term curation of these items. No artifacts will be discarded prior to consultation.

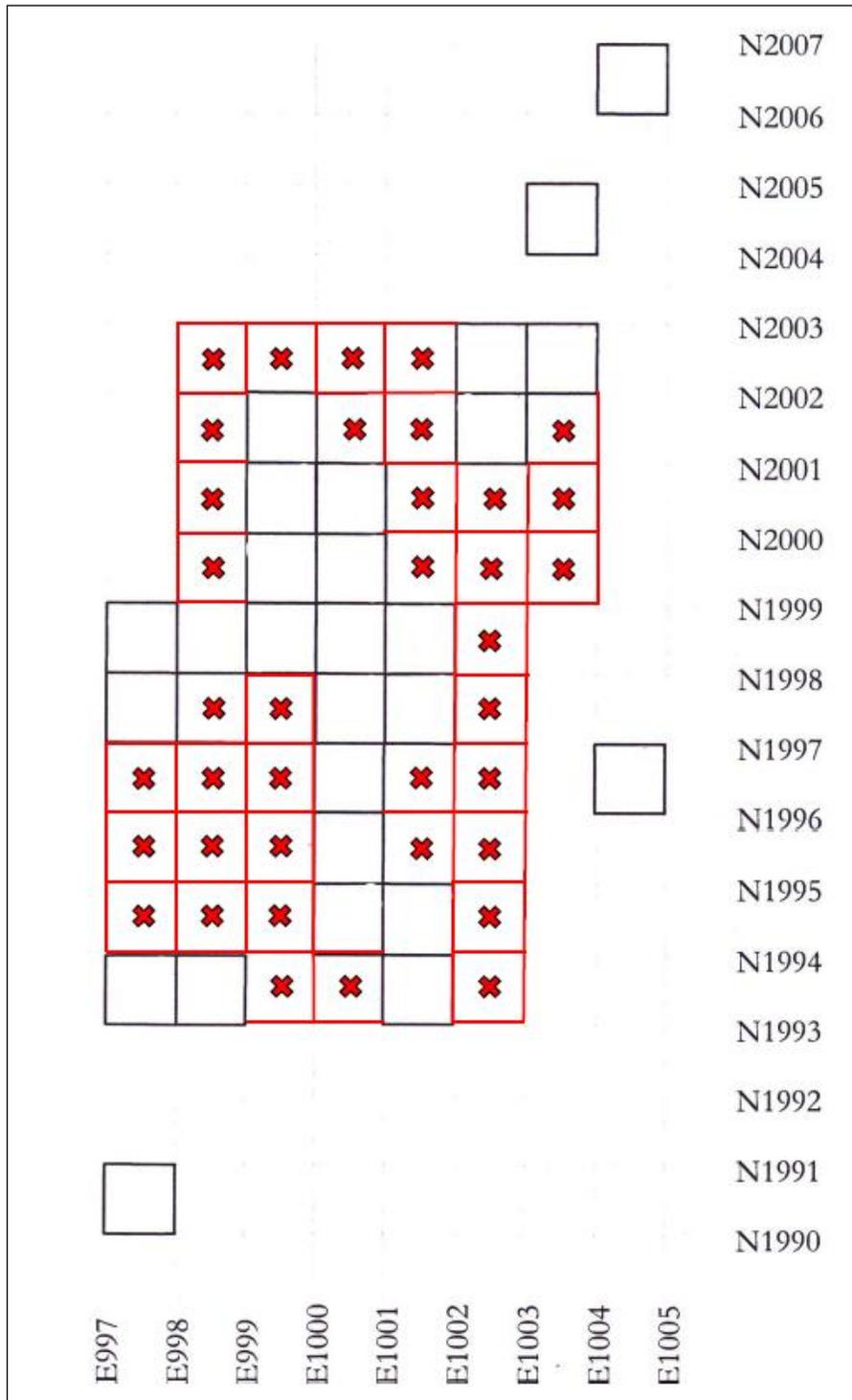


Figure 70: Proposed Location of a Portion of the Excavation Units (in red).
 The remainder of the units will be placed based on field results.

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It is anticipated that a small collection of cultural materials will be recovered during the archaeological fieldwork and retained for curation. Based on site estimates obtained from previous work at the site, we anticipate the recovery of up to 1,200 artifacts during this project. If a significantly higher number is recovered, we will contact DelDOT immediately upon discovery of this issue.

All recovered artifacts will be transported to the Dovetail lab for processing (due to the size of the undertaking, we do not anticipate large-scale, field-based artifact processing). Lab work will include washing all artifacts, cataloguing the materials, and labeling the artifacts according to site number and provenience. The information obtained from the analysis will be used to address the site research topics. Specialized laboratory-based artifact studies may include basic lithic analysis, heavy- and light-fraction analysis, sourcing of all raw materials, fire-cracked rock analysis and possible refitting (depending on collection size), ceramic studies, x-ray diffraction (XDR) analysis, attribute-level analysis and low-powered microwear analysis of all recovered tools, and starch-grain analysis, along with the aforementioned soil chemistry and ethnobotanical studies. The exact lab-based studies performed will be dependent on the content of the recovered collection.

All recovered artifacts and documentation must be curated at an approved repository. Curation involves preparing the artifacts (washing, labeling, cataloguing, etc.) and paying a fee for storage space. Dovetail will curate all materials to MHT specifications and curate the remains at the State of Maryland Jefferson-Patterson facility.

This proposal does not include funds for artifact conservation. If organic objects or other perishables requiring conservation are recovered, Dovetail will immediately contact DelDOT to discuss the objects. Both short-term, field-based conservation techniques and long-term conservation plans will be coordinated with DelDOT, the MHT and other conservation specialists. If long-term conservation efforts are required, they will be included in a subsequent task order.

Also as part of this task, Dovetail will work with Grubb to obtain all artifacts collected during the Phase I and II work at the site. It is estimated that up to two boxes of artifacts and paperwork will be retrieved during this work. Once brought to the Dovetail lab, the team will conduct a cursory inspection of the materials to assure that they are processed according to Maryland curation guidelines. If discrepancies are noted, Dovetail will rectify the collection to meet all curation standards.

Subtask E: Project Report

Dovetail will prepare a report on the investigations that meets the MHT's standards for archaeological reports. Because only a management summary was done at the end of the Phase I survey and Phase II testing, this report will be inclusive of the Phase I, II and Phase III studies, such as site stratigraphy and discussions on artifact distributions and function. The report will include details on the background review, cultural and

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environmental setting including the prehistoric cultural research, the methodology used in the investigations, the general nature and extent of materials encountered during the archaeological work, and an analysis of all features exposed during the fieldwork in relation to the prehistoric context, if appropriate. All lab-based studies, including artifact analysis, soil chemistry, and ethnobotanical analysis, will also be included within the final site report. Appendices will include required project maps, site summary table, a catalogue of artifacts, a copy of any permits acquired for this work, and a statement of qualifications for the project Principal Investigator and Senior Archaeologist (these documents are also attached to this proposal).

Concurrent with this work, an MHT site form will be updated for the site. This includes preparation of an information form and the creation of a location map and plan map for the site. In addition to submitting the revised site packet to the MHT, a copy of the form will be included as an appendix in the site report.

Draft copies of the report and attendant site form will be submitted to DelDOT, the DE SHPO, the MHT, and the Maryland State Highway Administration (SHA) for review. Drafts will also be sent to the Maryland Commission on Indian Affairs and the Nause Waiwash Band of Indians for comment. If revisions are requested, DelDOT will address agency concerns and produce a final report. Final site forms and associated maps and photographs will be completed by Dovetail and sent to the MHT for their files with the two hard copies of the final report once all comments from all agencies have been addressed. A pdf version of the report will also be sent to the MHT. Hard and electronic versions of the final report will also be sent to the DE SHPO, SHA, the Maryland Commission on Indian Affairs, and the Nause Waiwash Band of Indians.

Project Schedule

The following schedule is based on receipt of a Notice to Proceed (NTP) in the middle of February and includes all subtasks listed above and as discussed by Dovetail and DelDOT related to this project (Table 20). Fieldwork will be completed in two 10-day sessions (8-hour days) with a crew of seven people. Given the proposed time of year for fieldwork, it is not anticipated that holidays will halt work. In case of inclement weather, Dovetail will follow one of two paths: if the adverse weather is mildly inclement and will only last for a day or two, field crew will work at the hotel processing artifacts, conducting research, or completing other non-field tasks as possible. Work will resume as soon as the weather clears and the conditions are conducive for fieldwork. If the adverse weather is more severe (expected to last more than two days), Dovetail will weather-proof the site as much as possible using hay, plywood, plastic, and other materials, and cease fieldwork. Staff will return to the Dovetail office or be relegated to other projects until it is deemed appropriate to resume fieldwork. Crew will then return to the area to complete the project.

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Based on the schedule above, it is anticipated that all of this task will be completed within six months. This is dependent on receipt of an NTP, acquiring feedback from agencies, and good weather. Dovetail will keep in constant communication with DeIDOT regarding this proposed schedule and notify the agency should we foresee any changes in what is proposed herein

Table 20: Proposed Project Schedule.

Subtask	Time Requirement (Given in NTP + Months)
Subtask A: Project Coordination	Project Duration
Subtask B: Background/Archival Research	NTP + 1 month
Subtask C: Phase III Fieldwork	NTP + 2 months (1 month task total)
Subtask D: Lab Analysis & Curation	NTP + 3 months (1 month task total)
Subtask E: Report Production	NTP + 6 months (3 months task total)

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- 2010 *Management Summary: Phase IB (Identification-Level) Archaeological Survey, U.S. Route 301 Mainline Contract 3: Maryland/Delaware State Line to North of Levels Road, St. Georges and Appoquinimink Hundreds and Town of Middletown, New Castle County Delaware and Electoral District 1, Cecil County, Maryland*. Richard Grubb & Associates, Inc., Cranbury, New Jersey.

Hull, Katherine L.

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Grossman-Bailey, Ilene, Philip A. Hayden, and Michael J. Insetta

- 2011 *Management Summary: Phase II (Evaluation-Level) Archaeological Surveys, Warwick Prehistoric Site (18CE371), Polk Tenant Site (N05221, 7NC-F-111), U.S. Route 301 Mainline, Section 3: Maryland/Delaware State Line to North*

Mr. David Clark
February 4, 2013

of Levels Road, St. Georges and Appoquinimink Hundreds and Town of Middletown, New Castle County Delaware and Electoral District 1, Cecil County, Maryland. Richard Grubb & Associates, Inc., Cranbury, New Jersey.

Nielsen, Axel E.

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Ritchie, William A.

1971 *A Typology and Nomenclature for New York Projectile Points*. New York State Museum, Bulletin 384. The University of the State University of New York, Albany, New York.

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1990 Site Structure at the Orbit Inn: An Application of Ethnoarchaeology. *American Antiquity* 55(4):787–812.

Stevenson, Mark G.

1991 Beyond the Formation of Hearth-Associated Artifact Assemblages. In *The Interpretation of Archaeological Spatial Patterning*, edited by E. M. Kroll and T. D. Price, pp. 269–300. Plenum Press, New York.

Years Experience

With this firm : 8.5
With other firms: 13

Education

M.A. Anthropology, 1999
B.A. Anthropology, 1990
B.A. Archaeology, 1990

Active Registrations

Registered Professional Archaeologist
Secretary of Interior Standards
Qualified as Archaeologist

Notable Publications/Presentations

- ❖ *Native Peoples of the Rappahannock Fall Zone*. Paper presented at the Council of Virginia Archaeologists and Archaeological Society of Virginia Annual Meeting (2009)
- ❖ *Tools of Contact. Stone Tool Tradition of the Contact Era*, edited by Charles Cobb (University of Alabama Press, 2003)
- ❖ *Through the Looking Glass: Standards and Guidelines and the Archaeological Record*. Paper presented at the Mid Atlantic Archaeological Conference Annual Meeting (2009)

Sample Projects

- ❖ *Northern Virginia Community College Woodbridge Campus South Parking Lot Expansion*. Phase I Archaeological Survey of the Northern Virginia Community College, Woodbridge Campus.
- ❖ *Archaeological Investigation at Historic Brentsville Jail*. Archaeological Investigations on the interior and exterior of Brentsville Jail prior to rehabilitation, Brentsville, Virginia.
- ❖ *Archaeological Testing, Arlington National Cemetery*. Phase II Archaeological Testing and Assessment, Fort Myer, Arlington County, Virginia.
- ❖ *Southeast High Speed Rail, Richmond to Raleigh*. Archaeological studies for a multi-state project coordination and MOA production on 158-mile long rail corridor.



MICHAEL L. CARMODY, RPA

Vice President/Principal Investigator

Mr. Carmody has over 20 years of experience in the field of archaeology and cultural resource management (CRM), with the last ten years focusing on archaeology in the transportation sector. He has directed excavations of a wide array of archaeological sites in Virginia, Delaware, Maryland, North Carolina, New York and Pennsylvania and has written and contributed extensively to CRM reports. His current responsibilities at Dovetail include managerial and technical tasks associated with archaeological assessments and Phase I, II and III excavations, consultation with and representation of clients before state and national review agencies, writing and editing technical reports, preparing and managing project budgets, and developing and implementing archaeological research designs. Additionally, Mr. Carmody serves as business manager for Dovetail. In this capacity he is responsible for all financial aspects of this business.

Mr. Carmody served for four years as the Preservation Program Coordinator for the Fredericksburg, Northern Virginia, and Culpeper Districts at the Virginia Department of Transportation (VDOT) prior to founding Dovetail. In this capacity he was responsible for the development of project scopes, budget review, project management, and project coordination. During his tenure at VDOT, Mr. Carmody attended a variety of training sessions including, Alternative Dispute Resolution, Agreement Document Writing, NEPA and Section 4f, and Introduction to Section 106. As a result of this experience, Mr. Carmody brings a strong knowledge of the expectations and requirements of transportation preservation compliance.

Prior to VDOT, Mr. Carmody worked for five years at the Public Archaeology Facility (PAF) in Binghamton, New York. In his capacity as a Project Director at PAF Mr. Carmody was responsible for directing archaeological investigations, including Phase I, II and III projects. PAF's largest client was the New York Department of Transportation. At PAF Mr. Carmody directed Phase III, Data Recovery, excavations at two Late Woodland Period sites along the Susquehanna River. Additionally, he directed several large Phase I survey projects for the New York Department of Transportation, including the evaluation of multiple alternatives for the upgrade of Route 17 to an interstate through the Catskills region.

Years Experience

With this firm : 2
With other firms: 23

Education

Ph.D. Anthropology, 1994
M.A. Anthropology, 1986
B.A. History, 1978

Active Registrations

Secretary of Interior Standards
Qualified as Archaeologist

Notable Publications/Presentations

- ❖ *The Early Woodland Period in Virginia*, Virginia State Plan for Archaeology (VDHR, Richmond, VA)
- ❖ A Context for Contact: Tsenacomoco Before and After the Tassantasses, In *Researching Times Past in the Chesapeake*, ed. Margaret Huber and Martin Gallivan (with Dane T. Magoon, Manuscript under review by the University of Nebraska Press, Lincoln, NE)
- ❖ Secondary Burial and Mortuary Ritual in the Southern Middle Atlantic Region, In *Secondary Burial in Eastern North America*, ed. Debra Gold (University of Nebraska Press, Lincoln, NE)
- ❖ Review of Circular Villages of the Monongahela Tradition, by Bernard Means (*American Antiquity* 74 (2): pp. 578-579)
- ❖ Analytical Scale and Archaeological Perspectives on the Contact Era in the Northern Neck of Virginia, In *Indian and European Contact in Context: The Middle Atlantic Region* (ed. Julia King and Dennis Blanton, pp. 47-73, with Douglas W. Sanford, University of Florida Press: Gainesville)

Sample Projects

- ❖ *Environmental Impact Statement and Related Studies, Interstate 64, Richmond to Hampton, Virginia.* Cultural resource studies and related project coordination along a 74-mile corridor.
- ❖ *Telegraph Road Expansion Project, Prince William County, Virginia.* Cultural Resource studies associated with the expansion of Telegraph Road.



MICHAEL J. KLEIN, PHD

Senior Archaeologist/Principal Investigator

Dr. Klein specializes in the prehistory of Eastern North America. He has over 25 years of experience in writing and implementing Cultural Resource Management research designs. He has worked on CRM projects throughout Eastern North America, and has directed numerous archaeological surveys and excavations on prehistoric and historic sites, with a focus on the Middle Atlantic Region. At Dovetail, Dr. Klein serves the senior archaeologist and assists running projects, preparing technical reports, as well as provides oversight of the analysis of prehistoric material culture.

Dr. Klein worked for five years as a principal investigator for Cultural Resource Management, Inc (CRI). At CRI, Dr. Klein was responsible for running large projects and preparing technical reports. In this capacity, he was intimately involved in preparing the Data Recovery Plan and proposal for the King William Reservoir Project. Additionally, Dr. Klein was active in serving as a principal investigator on many of the transportation projects that CRI conducted under its on-call contract with the Virginia Department of Transportation.

Prior to working at CRI, Dr. Klein served as the co-director for the Mary Washington University Center for Historic Preservation. In this capacity he was responsible for running all aspects of this program, from business development to project implantation.

He has also taught classes on historic preservation and archaeological method and theory at the University of Mary Washington, the University of Virginia, and James Madison University. His own research focuses on the study of prehistoric settlement patterns, the creation of predictive models, the analysis of prehistoric ceramics and lithics, and the use of quantitative methods to study the prehistory of Eastern North America.

APPENDIX G: MHT SITE FORM

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MARYLAND INVENTORY OF HISTORIC PROPERTIES
ARCHEOLOGICAL SITE SURVEY: BASIC DATA FORM

Date Filed: _____

Check if update:



Maryland Department of Planning
Maryland Historical Trust
Division of Historical and Cultural Programs
100 Community Place
Crownsville, Maryland 21032

Site Number: 18CE371

County: Cecil

A. DESIGNATION

1. Site Name: Warwick
2. Alternate Site Name/Numbers: _____
3. Site Type (describe site chronology and function; see instructions):
Late Archaic, and possibly Early Woodland, short-term resource procurement camp
4. Prehistoric Historic Unknown _____
5. Terrestrial Submerged/Underwater _____ Both _____

B. LOCATION

6. USGS 7.5' Quadrangle(s): Cecilton (For underwater sites)
NOAA Chart No.: _____
(Photocopy section of quad or chart on page 4 and mark site location)

Latitude in decimal degrees 39.407848 Longitude in decimal degrees -75.716321

7. Maryland Archeological Research Unit Number: 6
8. Physiographic Province (check one):
 Allegany Plateau Lancaster/Frederick Lowland
 Ridge and Valley Eastern Piedmont
 Great Valley Western Shore Coastal Plain
 Blue Ridge Eastern Shore Coastal Plain
9. Major Watershed/Underwater Zone (see instructions for map and list): Elk River

C. ENVIRONMENTAL DATA

10. Nearest Water Source: Unnamed tributary of the Sassafras River Stream Order: 2
11. Closest Surface Water Type (check all applicable):
 Ocean Freshwater Stream/River
 Estuarine Bay/Tidal River Freshwater Swamp
 Tidal or Marsh Lake or Pond
 Spring
12. Distance from closest surface water: 70 meters (or _____ feet)

C. ENVIRONMENTAL DATA [CONTINUED]

13. Current water speed: _____ knots 14. Water Depth: _____ meters

15. Water visibility: _____

16. SCS Soils Typology and/or Sediment Type: Crosiadore silt loam (Class 3w)

17. Topographic Settings (check all applicable):

- | | |
|---|---|
| <input type="checkbox"/> Floodplain | <input type="checkbox"/> Hilltop/Bluff |
| <input type="checkbox"/> Interior Flat | <input type="checkbox"/> Upland Flat |
| <input type="checkbox"/> Terrace | <input type="checkbox"/> Ridgetop |
| <input checked="" type="checkbox"/> Low Terrace | <input type="checkbox"/> Rockshelter/Cave |
| <input type="checkbox"/> High Terrace | <input type="checkbox"/> Unknown |
| <input type="checkbox"/> Hillslope | <input type="checkbox"/> Other: |
| | _____ |

18. Slope: 0-2%

19. Elevation: 21 meters (or _____ feet) above sea level

20. Land use at site when last field checked (check all applicable):

- | | |
|---|---|
| <input type="checkbox"/> Plowed/Tilled | <input type="checkbox"/> Extractive |
| <input type="checkbox"/> No-Till | <input type="checkbox"/> Military |
| <input checked="" type="checkbox"/> Wooded/Forested | <input type="checkbox"/> Recreational |
| <input type="checkbox"/> Logging/Logged | <input type="checkbox"/> Residential |
| <input type="checkbox"/> Underbrush/Overgrown | <input type="checkbox"/> Ruin |
| <input type="checkbox"/> Pasture | <input type="checkbox"/> Standing Structure |
| <input type="checkbox"/> Cemetery | <input type="checkbox"/> Transportation |
| <input type="checkbox"/> Commercial | <input type="checkbox"/> Unknown |
| <input type="checkbox"/> Educational | <input type="checkbox"/> Other: |
| | _____ |

21. Condition of site:

- Disturbed
 Undisturbed
 Unknown

22. Cause of disturbance/destruction (check all applicable):

- | | |
|--|---|
| <input checked="" type="checkbox"/> Plowed | <input type="checkbox"/> Vandalized/Looted |
| <input checked="" type="checkbox"/> Eroded/Eroding | <input type="checkbox"/> Dredged |
| <input type="checkbox"/> Graded/Contoured | <input type="checkbox"/> Heavy Marine Traffic |
| <input type="checkbox"/> Collected | <input type="checkbox"/> Other: |
| | _____ |

23. Extent of disturbance:

- Minor (0-10%)
 Moderate (10-60%)
 Major (60-99%)
 Total (100%)
 % unknown

C. ENVIRONMENTAL DATA [CONTINUED]

24. Describe site setting with respect to local natural and cultural landmarks (topography, hydrology, fences, structures, roads). Use continuation sheet if needed.

The Warwick Site (18CE371) is located in southeastern Cecil County, Maryland, near the watershed divide between the Delaware Bay and the Chesapeake Bay. The region has remained largely rural. Light woods surround the 0.02 hectare (0.05 ac) site, and a channelized Rank 2 tributary of the Sassafras River crosses U.S. 301 southeast of the site. The landform drops gently to the east, and rises somewhat to the west. The forested site setting contrasts with the surrounding agricultural land

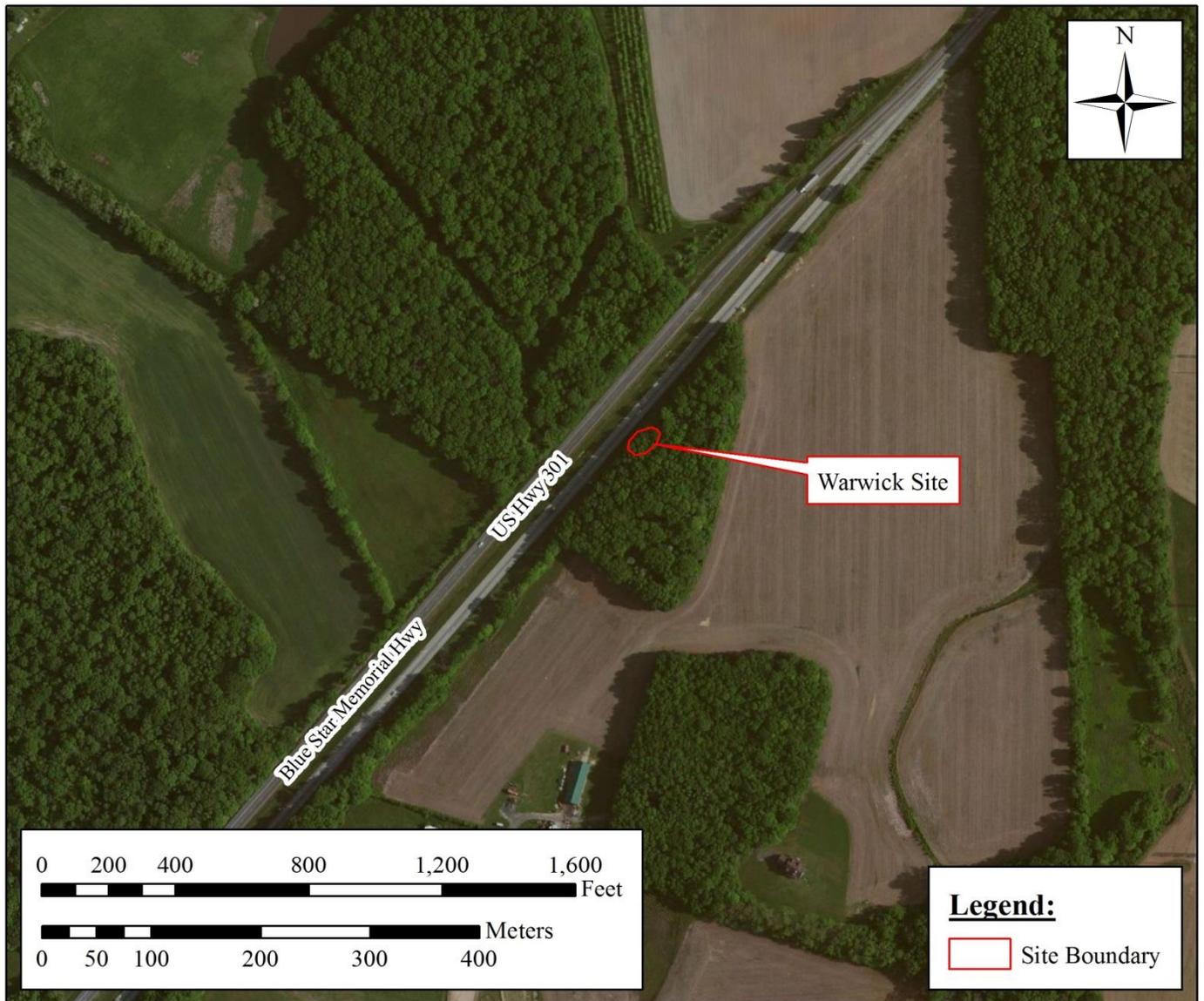
25. Characterize site stratigraphy. Include a representative profile on separate sheet, if applicable. Address plowzone (presence/absence), subplowzone features and levels, if any, and how stratigraphy affects site integrity. Use continuation sheet if needed.

Dr. Raymond Mueller excavated shovel tests and examined soil profiles exposed by the Phase II test units to evaluate formation processes. Mueller identified a plow zone, determined that the soils originally formed as Aeolian silt loess deposited during the Younger Dryas, and identified tree falls and plowing as the major disturbance processes affecting the site. The generally level landform and low-order streams surrounding the site minimized the potential impact of colluvial and alluvial burial or reworking of sediments. Rather, plowing, tree falls, and other sources of bioturbation, as well as the high water table evident in portions of the site, allowed artifacts to migrate downward through the soil profile and mixed artifacts in the upper sediments. In addition, winds perhaps deflated the previously exposed plow zone.

Muller described six distinct strata in the west wall of a test unit near the center of the site (N1998/E2001). The organic leaf litter (Oe) covered the ground surface. The second stratum, a deflated plow zone (1Ap1), consisted of very dark grayish brown (10YR 3/2) silt loam that extended 5 centimeters (2.0 in) below the ground surface. Many fine to medium roots occurred in the deflated plow zone. A clear, smooth boundary separated the 1Ap1 stratum from a second, roughly 100-year-old plow zone (1AP2), that consisted of dark grayish brown (10YR 4/2) silt loam. Fine to medium roots were common in the 1Ap2 stratum; at 17 centimeters (6.6 in) below the surface, an abrupt smooth boundary marked the transition to the B horizon. The 1B1 soils, described as yellowish brown (10YR 5/4) silt loam, extended to 32 centimeters (12.5 in) below the surface. At approximately that point, the 1B2 horizon appeared via a gradual, smooth boundary. Yellowish brown (10YR 5/6) silty clay loam that reached a depth of 60 centimeters (23.4 in) below the ground surface constituted Stratum 1B2. A clear, smooth boundary separated the 1B2 soil from the lowermost horizon, Stratum 2B. Stratum 2B comprised strong brown (7.5YR 4/6–5/8) soils with many faint medium-sized pinkish gray (7.5YR 6/2) and a few distinct, medium-sized yellowish red (5YR 5/8) mottles. Artifacts occurred in all but the 2B horizon, though the overwhelming majority were recovered from the plow zone and upper 10 centimeters of the B1 horizon.

26. Site size: 21 meters by 12 meters (or _____ feet by _____ feet)

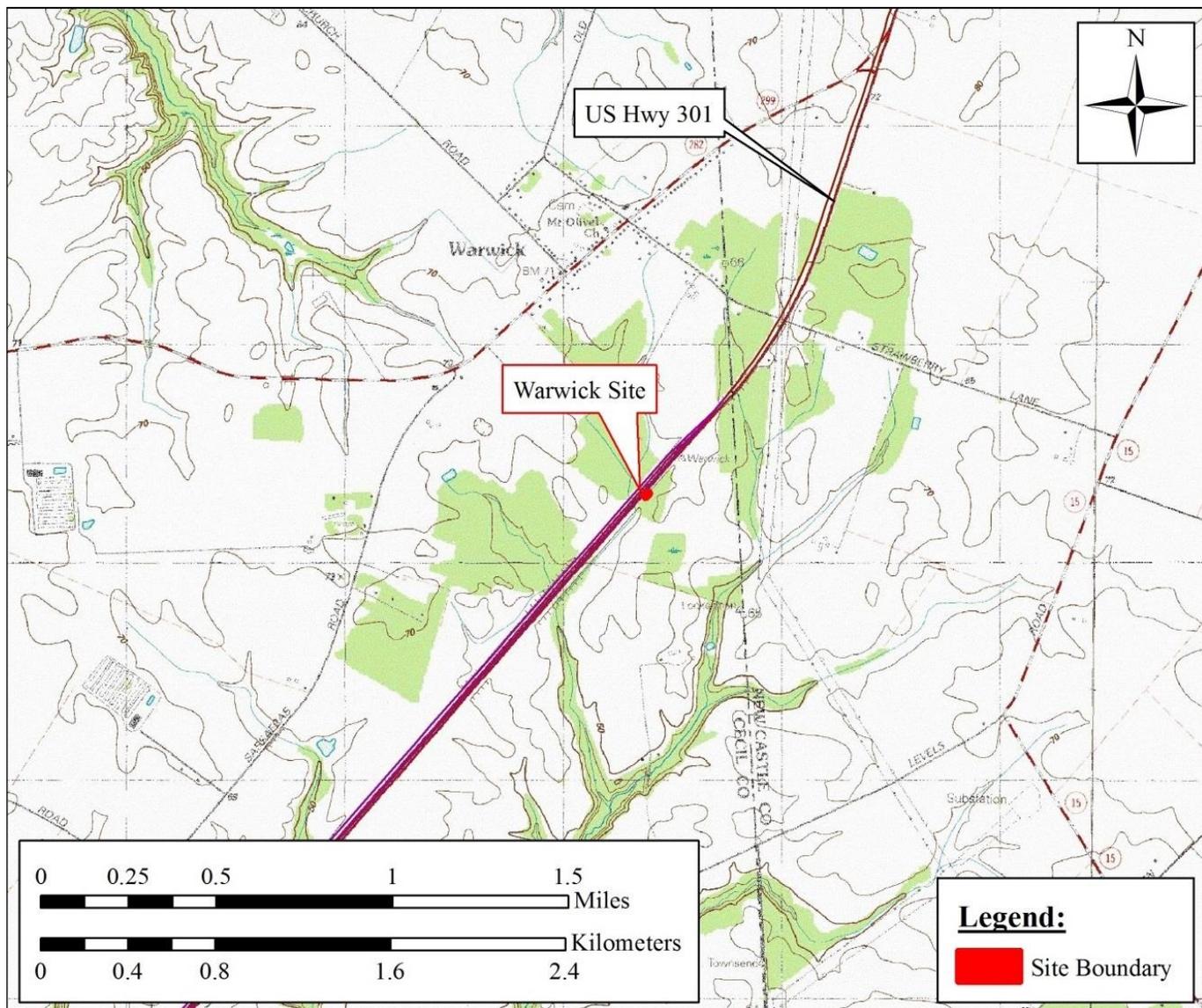
27. Draw a sketch map of the site and immediate environs, here or on separate sheet:



Scale:

North arrow:

Photocopy section of quadrangle map(s) and mark site location with heavy dot or circle and arrow pointing to it.



Cecilton, Maryland and Middletown, Delaware Topographic Map

D. CONTEXT

28. Cultural Affiliation (check all applicable):

- | | | |
|---|---|---|
| <p>PREHISTORIC</p> <p><input type="checkbox"/> Unknown</p> <p><input type="checkbox"/> Paleoindian</p> <p><input type="checkbox"/> Archaic</p> <p><input type="checkbox"/> Early Archaic</p> <p><input type="checkbox"/> Middle Archaic</p> <p><input checked="" type="checkbox"/> Late Archaic</p> <p><input type="checkbox"/> Terminal Archaic</p> <p><input type="checkbox"/> Woodland</p> <p><input type="checkbox"/> Adena</p> <p><input checked="" type="checkbox"/> Early Woodland</p> <p><input type="checkbox"/> Middle Woodland</p> <p><input type="checkbox"/> Late Woodland</p> <p><input type="checkbox"/> CONTACT</p> | <p>HISTORIC:</p> <p><input checked="" type="checkbox"/> Unknown</p> <p><input type="checkbox"/> 17th century</p> <p><input type="checkbox"/> 1630-1675</p> <p><input type="checkbox"/> 1676-1720</p> <p><input type="checkbox"/> 18th century</p> <p><input type="checkbox"/> 1721-1780</p> <p><input type="checkbox"/> 1781-1820</p> <p><input type="checkbox"/> 19th century</p> <p><input type="checkbox"/> 1821-1860</p> <p><input type="checkbox"/> 1861-1900</p> <p><input type="checkbox"/> 20th century</p> <p><input type="checkbox"/> 1901-1930</p> <p><input type="checkbox"/> post-1930</p> | <p><input type="checkbox"/> UNKNOWN</p> |
|---|---|---|

E. INVESTIGATIVE DATA

29. Type of investigation:

- | | |
|---|---|
| <p><input checked="" type="checkbox"/> Phase I</p> <p><input checked="" type="checkbox"/> Phase II/Site Testing</p> <p><input checked="" type="checkbox"/> Phase III/Excavation</p> <p><input type="checkbox"/> Archival Investigation</p> <p><input type="checkbox"/> Monitoring</p> | <p><input type="checkbox"/> Field Visit</p> <p><input type="checkbox"/> Collection/Artifact Inventory</p> <p><input type="checkbox"/> Report From Informant</p> <p><input type="checkbox"/> Other:</p> <p>_____</p> |
|---|---|

30. Purpose of investigation:

- | | |
|--|--|
| <p><input checked="" type="checkbox"/> Compliance</p> <p><input type="checkbox"/> Research</p> <p><input type="checkbox"/> Avocational</p> <p><input type="checkbox"/> Regional Survey</p> | <p><input type="checkbox"/> Site Inventory</p> <p><input type="checkbox"/> MHT Grant Project</p> <p><input type="checkbox"/> Other:</p> <p>_____</p> |
|--|--|

31. Method of sampling (check all applicable):

- | | |
|--|--|
| <p><input type="checkbox"/> Non-systematic surface search</p> <p><input type="checkbox"/> Systematic surface collection</p> <p><input type="checkbox"/> Non-systematic shovel test pits</p> <p><input checked="" type="checkbox"/> Systematic shovel test pits</p> | <p><input checked="" type="checkbox"/> Excavation units</p> <p><input type="checkbox"/> Mechanical excavation</p> <p><input type="checkbox"/> Remote sensing</p> <p><input type="checkbox"/> Other:</p> <p>_____</p> |
|--|--|

32. Extent/nature of excavation: Richard Grubb & Associates conducted Phase I survey and Phase II evaluation;
Phase III data recovery was carried out by Dovetail Cultural Resource Group

F. SUPPORT DATA

33. Accompanying Data Form(s):

- Prehistoric
- Historic
- Shipwreck

34. Ownership: Private Federal State Local/County

Unknown

35. Owner(s): Maryland State Highway Administration
Address: 707 North Calvert Street, Baltimore, MD 21202
Phone: (888) 204-4848
Email: _____

36. Tenant and/or Local Contact: _____
Address: _____
Phone: _____
Email: _____

37. Other Known Investigations Grossman-Bailey, Ilene 2010 *Management Summary, Phase 1B (Identification-Level) Archaeological Survey, U.S. Route 301 Mainline Contract 3: Maryland/Delaware State Line to North of Levels Road, St. Georges and Appoquinimink Hundreds and Town of Middletown, New Castle County, Delaware and Electoral District 1, Cecil County, Maryland.*

Grossman-Bailey, Ilene, and Philip A. Hayden 2009 *Phase IA (Reconnaissance-Level) Archaeological Survey, U.S. Route 301 Mainline Contract 3: Maryland/Delaware State Line to North of Levels Road, St. Georges and Appoquinimink Hundreds and Town of Middletown, New Castle County, Delaware and Electoral District 1, Cecil County, Maryland.*

Grossman-Bailey, Ilene, Philip A. Hayden, and Michael J. Insetta 2011 *Management Summary: Phase II (Evaluation-Level) Archaeological Surveys, Warwick Prehistoric Site (18CE371), Polk Tenant Site (N05221, 7NC-F-11), U.S. Route 301 Mainline Section 3: Maryland/Delaware State Line to North of Levels Road, St. Georges and Appoquinimink Hundreds and Town of Middletown, New Castle County, Delaware and Electoral District 1, Cecil County, Maryland.*

38. Primary report reference or citation: Klein, Mike Marco A. González, and Michael L. Carmody (Principal Investigator), with contributions by Justine W. McKnight and Andrew P. Wilkins 2013 *U.S. 301 from the Maryland/Delaware State Line to SR 1: Phase III Data Recovery at the Warwick Site (18CE371), Cecil County, Maryland*

39. Other Records (e.g. slides, photos, original field maps/notes, sonar, magnetic record)?
 Slides Field record _____ Other: _____
 Photos _____ Sonar
 Field maps _____ Magnetic record

40. If yes, location of records: Richard Grubb & Associates; Dovetail Cultural Resource Group

41. Collections at Maryland Archeological Conservation (MAC) Lab or to be deposited at MAC Lab?
 Yes
 No
 Unknown

42. If NO or UNKNOWN, give owner: _____
location: _____
and brief description of collection: _____

43. Informant: _____
Address: _____
Phone: _____
Email: _____

44. Site visited by Mike Klein
Company/Group name: Dovetail Cultural Resource Group
Address: 300 Central Road, Suite 200, Fredericksburg, VA 22401
Phone: (540) 899-9371
Email: mklein@dovetailcrg.com Date: 04/18 to 05/08/2013

45. Form filled out by: Mike Klein
Company/Group name: Dovetail Cultural Resource Group
Address: 300 Central Road, Suite 200, Fredericksburg, VA 22401
Phone: (540) 899-9371
Email: mklein@dovetailcrg.com Date: 02/05/2014

46. Site Summary/Additional Comments (append additional pages if needed):

Phase II

Phase II fieldwork was conducted by Richard Grubb & Associates from March 14 to May 6, 2011. Twenty-five 1-x-1 meter (3.3-x-3.3 ft) test units were excavated. In addition, Dr. Raymond Mueller (2011) excavated test pits and examined soil profiles exposed by the Phase II test units to evaluate formation processes. A typical Phase II soil profile comprised thin very dark grayish to dark olive brown (10YR 3/2) humus and loam (O/Ap1 horizon) above an olive brown (2.5Y 5/3) silt loam plow zone (Ap2 horizon) with a clear, smooth boundary. At approximately 13 centimeters (5.1 in) below the ground surface, light olive brown (2.5Y5/6) silty clay loam subsoil (B1 horizon) appeared. Artifact density dropped with depth the B1 horizon, which occasionally included a mottled light olive brown (2.5Y5/6) clay loam and strong brown (7.5YR 5/8) sandy loam B2 horizon beneath the B1 sediments.

Excavation of the twenty-five test units and one ambiguous feature (see Additional Comments) unearthed one fragment of charred wood and 395 artifacts, including 382 prehistoric artifacts. Prehistoric diagnostics consisted of six Lamoka points, five of jasper and one of quartz. Five small stemmed and one corner-notched point also were recovered. The points probably date to the Late Archaic and/or Early Woodland periods. Custer (1989:147) considers all poor temporal indicators that potentially range in age from the Late Archaic through as late as the Middle Woodland, his Woodland I Period. Four bifaces, both early and late stage, a hammerstone fragment, 67 fire-cracked rocks, one flake tool, and 295 pieces of debitage, most jasper and chert, formed the remainder of the assemblage. Cortex on 21 percent of the assemblage suggested cobble-based tool manufacture. Reddened color, potlids, and glossy surfaces on 33 percent of the assemblage of jasper and chert provided evidence of heat treatment.

The prehistoric artifacts recovered during the Phase II excavation include four pieces of microdebitage collected from the Feature 1 flotation sample. Phase II records indicate the 52 percent of the remaining artifacts occurred in and above the plow zone. An additional 47 percent of prehistoric artifacts were recovered from the B1 horizon, and more than half of the sub-plow-zone artifacts appeared in the upper 10 centimeters (3.9 in) of the stratum; the remaining nine artifacts appeared in the B2 sediments. No artifacts were recovered from the 2B horizon.

The major concentration of artifacts, located in the northeastern portion of the major excavation block, extended northeast from N1998/E2001 to N2002/E2003. Points and other bifaces occurred throughout the core of the site, but, like artifacts in general, were recovered primarily from the north-central portions of the site, in test units located between N1998 and N2003. FCR appeared at low density across a somewhat broader area than bifacial tools, though most fragments were recovered in the northeastern portion of the site.

Phase III

Phase III archaeological fieldwork began by re-establishing the RGA excavation grid. The grid divided the area into blocks of 1 square meter (3.3 ft²). Excavation began by expanding the central area examined during the earlier work, where the possible cultural feature and the highest artifact densities were identified. The completed excavation exposed a 10 by 8 meter (32.8 by 26.2 ft) block, though unexcavated areas around trees interrupted the continuity of the block. Stratum I, the root mat and associated organic material and soil, and the underlying historic plow zone were removed to expose the B1 horizon in hopes of identifying cultural features. Excavation of the underlying soils revealed profiles similar to those described during the Phase II fieldwork, with only minor variations in soil color and texture.

The Phase III assemblage includes one mammal bone and one charred nut shell, five fragments of petrified wood, a piece of barbed wire, a nail, six pieces of glass, and prehistoric artifacts. The prehistoric assemblage includes 104 pieces of microdebitage, 377 larger pieces of debitage, 105 fragments of FCR, and 16 tools. Artifacts, as well as most biotic activity, occurred primarily in the Ap and B1 horizons. Six of the Phase III artifacts occurred in the B2 horizon, all small fragments of debitage from test units adjacent to trees with extensive root systems. Artifact density peaked in one or two levels within the Ap and B1 horizons. Where artifacts appeared below the uppermost level of the B1 horizon, artifact frequency fell and artifacts occurred in low frequencies throughout the zone impacted by roots.

MARYLAND ARCHEOLOGICAL SITE SURVEY: PREHISTORIC DATA FORM

Site Number 18CE371

1. Site type (check all applicable):

- | | |
|---|--|
| <input type="checkbox"/> village | <input type="checkbox"/> earthen mound |
| <input type="checkbox"/> hamlet | <input type="checkbox"/> shell midden |
| <input type="checkbox"/> base camp | <input type="checkbox"/> fish weir |
| <input checked="" type="checkbox"/> short-term resource procurement | <input type="checkbox"/> submerged prehistoric |
| <input type="checkbox"/> lithic quarry/extraction | <input type="checkbox"/> lithic scatter |
| <input type="checkbox"/> rockshelter/cave | <input type="checkbox"/> unknown |
| <input type="checkbox"/> cairn | <input type="checkbox"/> other: |
| | _____ |

2. Categories of aboriginal material or remains at site (check all applicable):

- | | |
|---|--|
| <input checked="" type="checkbox"/> flaked stone | <input type="checkbox"/> human skeletal remains |
| <input checked="" type="checkbox"/> ground stone | <input type="checkbox"/> faunal implements/ornaments |
| <input type="checkbox"/> stone bowls | <input type="checkbox"/> faunal material |
| <input checked="" type="checkbox"/> fire-cracked rock | <input type="checkbox"/> oyster shell |
| <input type="checkbox"/> other lithics | <input type="checkbox"/> floral material |
| <input type="checkbox"/> ceramics (vessels) | <input type="checkbox"/> unknown |
| <input type="checkbox"/> other fired clay | <input type="checkbox"/> other: |
| | _____ |

3. Lithic materials (check all applicable):

- | | |
|---|---|
| <input checked="" type="checkbox"/> jasper | <input type="checkbox"/> steatite |
| <input checked="" type="checkbox"/> chert | <input checked="" type="checkbox"/> sandstone |
| <input type="checkbox"/> rhyolite | <input type="checkbox"/> silicified sandstone |
| <input checked="" type="checkbox"/> quartz | <input checked="" type="checkbox"/> ferruginous quartzite |
| <input checked="" type="checkbox"/> quartzite | <input type="checkbox"/> European flint |
| <input type="checkbox"/> chalcedony | <input type="checkbox"/> basalt |
| <input type="checkbox"/> ironstone | <input type="checkbox"/> unknown |
| <input checked="" type="checkbox"/> argillite | <input type="checkbox"/> other: |
| | _____ |

4. Diagnostics (choose from manual and give number recovered or observed):

Phase II: 6 Lamoka (5 jasper, 1 quartz),
5 small stemmed and one corner-notched
points (probably Late Archaic or Early
Woodland)

Phase III: 1 quartzite Bare Island,
8 Lamoka (1 chert, 5 jasper, 2 quartz),
also stemmed bifaces,
late-stage point tips,
early-stage bifaces.

5. Features present:

- yes
 no
 unknown

6. Types of features identified (check all applicable):

- | | |
|--|---|
| <input type="checkbox"/> midden | <input type="checkbox"/> chipping clusters |
| <input type="checkbox"/> shell midden | <input checked="" type="checkbox"/> refuse/storage pits |
| <input type="checkbox"/> postholes/molds | <input type="checkbox"/> burials |
| <input type="checkbox"/> house patterns | <input type="checkbox"/> ossuaries |
| <input type="checkbox"/> palisade | <input type="checkbox"/> unknown |
| <input type="checkbox"/> hearths | <input type="checkbox"/> other: |
| | _____ |

7. Flotation samples collected:

yes
 no
 unknown

analyzed:

yes, by Justine McKnight
 no
 unknown

8. Samples for radiocarbon dating collected:

yes
 no
 unknown

Dates and Lab Reference Nos. _____

9. Soil samples collected:

yes
 no
 unknown

analyzed:

yes, by Andrew Wilkins
 no
 unknown

10. Other analyses (specify): _____

11. Additional comments:

Feature 1

A single, small feature intruded into the B horizon in a test unit located at N1995/E2002, located in the southeastern corner of the Phase II excavation; the unit was designated TU 7 during the Phase III fieldwork. Feature 1, an olive brown (2.5Y 4/3) silt loam oval feature that measured approximately 20 by 17 centimeters (7.8 by 6.6 in) in plan, was bisected along the east-west axis. The basin-shaped feature extended 6 centimeters (2.3 in) into the B horizon. No artifacts appeared in the south half of Feature 1, which was screened through 0.32 centimeter (1/8 in) wire mesh. Flotation of the north half, however, resulted in the recovery of four micro-debitage fragments of jasper, quartz, and quartzite, as well as charred wood. No charred nuts or seeds were identified in the flotation sample. Grossman-Bailey et al. (2011:4-18) interpreted the feature as the truncated storage or refuse pit.

Flotation

Sixty-six soil samples collected from the Warwick Site were processed at Justine McKnight's Severna Park, Maryland laboratory. Samples were collected from the plow zone (Ap horizon), designated Stratum II, and the uppermost level of the subsoil (B1 horizon), designated Stratum III, Level 1. No undisturbed cultural features were identified during the Phase III excavation. Samples were air-dried and processed using a Flote-Tech flotation system equipped with 0.325 millimeter (0.1 in) fine-fraction and 1.0 millimeter (0.4 in) coarse-fraction screens. In addition, processing separated the light fraction, which floated, from the heavy fraction, which was trapped by the screens. Both fractions were passed through a 2.0 millimeter geological sieve; the larger specimens were examined under low (10X-40X) magnification and sorted into general categories. Material from the smaller fraction, which passed through the 2.0 millimeter (0.7 in) sieve, was examined under low magnification to isolate cultivated-plant and carbonized-seed remains for further study.

Charred wood occurred in every sample, a total of 2,187 fragments larger than two millimeters (0.1 in) in diameter. Wood charcoal accounted for over 93 percent of the analyzed plant carbon, by weight, with an average of 8.5 grams of wood charcoal fragments per liter of soil. Detailed analysis of a randomly selected sample of 1,114 fragments identified white oak species (*Quercus spp. LEUCOBALANUS group*; 16 percent), oak (*Quercus sp.*; 4 percent), red oak (*Quercus spp. ERYTHROBALANUS group*; 4 percent), hickory (*Carya spp*; 1 percent), maple (*Acer spp.*; <1 percent), and flowering dogwood (*Cornus florida*; <1 percent). Sixty-three percent of the wood sub-sample was not identifiable. The twenty-three nutshell fragments recovered from nine flotation samples included thick-walled hickory (*Carya spp*; 20 fragments) and acorn (*Quercus spp.*; 3 fragments). Twenty-seven carbonized and partially carbonized seeds were recovered from 23 percent of the 66 flotation samples. Weighing 0.11 grams, the seed assemblage comprised hawthorn (*Crataegus spp.*; 1 fragment), huckleberry (*Gaylussacia spp.*; 17 seeds), panic or foxtail grass (*Panicum/Setaria spp.*; 1 seed), sumac (*Rhus spp.*; 1 seed), raspberry or blackberry (*Rubus spp.*; 1 carbonized seed, 1 carbonized seed fragment), grape (*Vitis spp.*; 1 partially carbonized seed fragment), and, perhaps rose, (*ROSACEAE*; 1 seed fragment). Two seeds were not identified. In addition, 85 carbonized botanicals recovered from 41 percent of the samples represent buds, fungal fruit, fruit or flower stems, and, primarily, unclassifiable amorphous carbon.

Soil Chemistry

Eighty-eight soil chemistry samples were collected during Phase III excavations at the Warwick Site primarily from the two main artifact-bearing strata: the plowzone and upper 10-centimeter level of the subsoil. Samples were collected from thirty-three 1-x-1 meter (3.3-x-3.3 ft) test units, and also from 15 soil cores placed on a 10 meter (32.8 ft) interval across the site area. Chemical analysis assessed the potential spatial variation in anthropogenic soil alterations on site. Such signatures can potentially elucidate the location of activities and site structures, which can be problematic to identify through field observations alone on small, low-density sites. All samples were submitted for analysis to the University of Delaware's Soil Testing Program where a 'Routine Soil Test' was run including a Mehlich 3 extraction and inductively coupled plasma optical emission spectrometry (ICP-OES) for eleven elements: phosphorus (P), calcium (Ca), potassium (K), magnesium (Mg), manganese (Mn), copper (Cu), zinc (Zn), iron (Fe), boron (B), aluminum (Al), and sulfur (S). The Routine Test package also includes tests for pH, organic matter content, phosphorus saturation ratio (PSR), cation-exchange capacity (CEC), and base saturation.

Phosphorus, potassium, calcium, and magnesium are the most widely useful for spatial interpretations of past human activities on archaeological sites. Phosphorus (P) is most often associated with general organic refuse including human and animal waste and linked to kitchen and residential middens as well as gardens and animal pens. Calcium (Ca) is associated with wood ash, animal bone, shell, and architectural products made with lime such as plaster. Potassium (K) is prevalent within plant tissue and has been linked to hearth areas and the presence of ash. Magnesium (Mg) has been associated with areas of intense burning, but scholars disagree on the validity of that interpretation.

Overall, the soil chemical distributions of phosphorus, potassium, and magnesium added to and reinforced the spatial patterns observed in the artifact assemblage. Subsoil chemical distributions seemed to associate more precisely with artifact patterns than did the plowzone, while calcium did not appear to be informative in either strata. The spatial autocorrelation statistics support this conclusion, as well as support the larger interpretation of the Warwick site as a small, relatively short-term occupation with a small number of activities and associated activity areas. Longer term or more continuous occupations would likely generate a higher degree of spatial clustering, even on a plowed site. At Warwick only magnesium and phosphorus, both the B1 stratum, were clustered with high significance ($p < 0.1$), and even they had relatively low Z scores indicating that the clustering is not extreme. These results are consistent with a relatively brief, short-term occupation.

12. Form filled out by: Mike Klein
Address/Company Name: Dovetail Cultural Resource Group
Date: 02/15/2014

MARYLAND ARCHEOLOGICAL SITE SURVEY: HISTORIC DATA FORM

Site Number 18CE371

1. Site class (check all applicable, check at least one from each group):

- a. domestic
 industrial
 transportation
 military
 sepulchre
 religious
- b. urban
 rural
 unknown
- c. standing structure:
 yes
 no
 unknown
- d. above-grade/visible ruin:
 yes
 no
 unknown
- commercial
 educational
 non-domestic agricultural
 unknown
 other:

2. Site Type (check all applicable):

- artifact concentration
 possible structure
 post-in-ground structure
 frame structure
 masonry structure
 log structure
 farmstead
 plantation
 townsite
 road/railroad
 wharf/landing
 bridge
 ford
- _____ mill (specify: _____)
 raceway
 quarry
 furnace/forge
 other industrial (specify):

 battlefield
 military fortification
 military encampment
 cemetery
 unknown
 other: light trash scatter

3. Ethnic Association:

- Native American
 African American
 Angloamerican
 Hispanic American
 Asian American
- _____ other Euroamerican (specify):

 unknown
 other:

4. Categories of material remains present (check all applicable):

- ceramics
 bottle/table glass
 other kitchen artifacts
 architecture
 furniture
 arms
 clothing
 personal items
- _____ tobacco pipes
 activity items
 human skeletal remains
 faunal remains
 floral remains
 organic remains
 unknown
 other:

5. Diagnostics (choose from manual and give number recorded or observed):

Phase II:
3 ironstone/white granite
4 whiteware
4 cut nails

Phase III:
1 cut nail
1 barbed wire

6. Features present:

yes
 no
 unknown

7. Types of features present:

construction feature
 foundation
 cellar hole/storage cellar
 hearth/chimney base
 posthole/postmold
 paling ditch/fence
 privy
 well/cistern
 trash pit/dump
 sheet midden
 planting feature

road/drive/walkway
 depression/mound
 burial
 railroad bed
 earthworks
 raceway
 wheel pit
 unknown
 other:

8. Flotation samples collected:

yes
 no
 unknown

analyzed:

yes, by _____
 no
 unknown

9. Soil samples collected:

yes
 no
 unknown

analyzed:

yes, by _____
 no
 unknown

10. Other analyses (specify): _____

11. Additional comments:

12. Form filled out by: Mike Klein
Address/Company Name: Dovetail Cultural Resource Group
Date: 02/15/2014