

APPENDIX B: PHASE IA and PHASE IB SCOPES OF WORK (SOW)



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May 27, 2008

David S. Clarke
DelDOT Archaeologist
Department of Transportation
P.O. Box 778-800 Bay Road
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Re: Task/Assignment 2, Parent Agreement 1417
Revised Technical and Cost Proposal, Phase IA (Reconnaissance-Level) Archaeological Survey
U.S. Route 301, Levels Road Stormwater Management Facility
St. Georges Hundred, New Castle County, Delaware

Dear Mr. Clarke:

Richard Grubb & Associates (RGA) is pleased to present the following revised technical and cost proposal for Phase IA archaeological survey work at the proposed U.S. Route 301, Levels Road Stormwater Management Facility site in St. Georges Hundred, New Castle County, Delaware. This cost and technical proposal has been adjusted to incorporate your review comments, received via email on April 28, 2008 and also through subsequent telephone conversations. The Delaware Department of Transportation (DelDOT) proposes to use an approximately 127-acre tract of farmland west of Middletown as a borrow source for the U.S. Route 301 project, and subsequently as a detention basin. The Area of Potential Effects (APE) includes all portions of the 127-acre tract. The APE lies near the western limits of the preferred U.S. Route 301, Green Alternative (North Option) in Delaware. U.S. Route 301 is a proposed four-lane toll highway that will extend approximately 17.5 miles from the Maryland-Delaware border to State Route (SR) 1, just south of the SR 1 bridge over the Chesapeake and Delaware Canal. This new corridor will facilitate traffic movements between Maryland and SR 896 and SR Route 1 south of the Chesapeake and Delaware Canal.

It is the understanding of RGA that a Final Environmental Impact Statement (FEIS) for the U.S. Route 301 Development project was completed in December of 2007, and that a Record of Decision (ROD) was issued by the Federal Highway Administration (FHWA) on April 30, 2008. Consultation with the FHWA and Delaware State Historic Preservation Office (DESHPO) has taken place, and a Memorandum of Agreement (MOA) was developed between the FHWA, DelDOT, DESHPO, and Maryland Historical Trust (executed in November and December of 2007). Stipulation 1.A. of the MOA requires the completion of Identification/Evaluation-level (i.e. Phase I/II) archaeological surveys to determine if archaeological historic properties (i.e. National Register eligible) are present in the APE for the U.S. Route 301 project.

All work will be performed in accordance with the Secretary of the Interior's *Standards and Guidelines for Archaeology and Historic Preservation* and the *Guidelines for Architectural and Archaeological Surveys in Delaware* (1993) issued by the DESHPO. Since federal funds are being used, this work will be completed under Section 106 of the National Historic Preservation Act and its regulations (36 CFR 800).

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The Scope of Work, Deliverables, and Schedule for the Phase IA archaeological survey work are presented below.

SCOPE OF WORK

At a meeting between RGA, DelDOT archaeologists David Clarke and Kevin Cunningham, and Gwenyth Davis of the Delaware State Historic Preservation Office (DESHPO) on March 5, 2008, it was decided that three tasks would be completed to initiate the archaeological survey requirements for the Levels Road Stormwater Management Facility. These include completing:

- Task 1: Background Research
- Task 2: Geomorphological Assessment
- Task 3: Pamphlet/Brochure regarding the U.S. Route 301 project.

Also included in this proposal is a scope and cost for tasks already performed for the Levels Road Stormwater Management Facility project including preparation of an APE map for submission to DelDOT and attendance at the referenced meeting with DelDOT and DESHPO on March 5, 2008. Some planning time in preparation for the meeting was also included. The tasks completed are presented at the end of the proposal and the cost of this work is presented on separate spreadsheets.

The scope of work for each task is presented below.

Task 1: Background Research

Background research tasks will include consultation with individuals knowledgeable about the APE and vicinity, research on recorded archaeological sites, cultural resource management reports, and the development of site-specific prehistoric and historic contexts to aid in the identification and interpretation of archaeological sites. Detailed site-specific documentary research will aid in determining the kinds of historic archaeological resources that could be identified within the APE. The results of this research will be presented at a meeting with DelDOT and DESHPO. The main goal of this work will be to provide solid background research on the APE that will guide the development of a research design for Phase I archaeological survey. More details regarding the tasks for completion are presented below.

Consultation

Individuals knowledgeable about the prehistory and history of northern Delaware and the vicinity of the APE will be consulted during the initial phases of the background research. New Castle County Department of Land Use staff involved with historic planning will be consulted regarding the APE, and "The Levels" agricultural area. Kim Morrell from URS Corporation will be consulted regarding previous archaeological investigations conducted for DelDOT along Choptank Road, to the northeast of the APE. Hunter Research will be contacted about the results of an archaeological survey for a school project at the intersection of Bunker Hill and Choptank Road.

Site File Research and Cultural Resource Management Investigations

Archaeological site records maintained by the DESHPO and the Maryland Historical Trust (MHT), in conjunction with archaeological survey reports on file at the Delaware Department of Transportation and DESHPO will be reviewed. Pertinent archaeological survey reports at the DESHPO and MHT will also be reviewed. The Archaeological Predictive Model report for the U.S. Route 301 project prepared by A.D. Marble & Company (August 2005), Rumsey Farm National Register Nomination and U.S. Route 301 Architectural Survey report will be reviewed and utilized during the course of background research.

The goal of this research is to document the distribution of known sites within a two mile radius of the APE, and from within the entire Bohemia River watershed in western Delaware and the Eastern Shore of Maryland. The areas

drained by Great Bohemia Creek, Little Bohemia Creek, all of the tributaries of these waterways, and the portion of the Elk River downstream of its confluence with the Bohemia River will be included. This information will aid in the assessment of the likelihood of encountering prehistoric resources and determining the site types that could be expected within the APE. This research may also help reveal patterns of historic land use and assess the potential of the APE for historic sites not depicted on nineteenth century maps and atlases. The locations of 17th and 18th century sites will also be closely examined in comparison with the APE.

Prehistoric Context

The results of research on previously documented sites and archaeological surveys in the Bohemia River watershed will aid in predicting the nature of prehistoric occupations in the APE. Site distributions throughout the watershed will be compiled, with a focus upon the frequency of the utilization of particular landforms, lithic utilization patterns, and chronological and settlement pattern data. The results of this research will be presented at a meeting with DelDOT and DESHPO. Site distribution and environmental data will be compiled in a Geographic Information System (GIS) platform to examine the nature of the changing patterns of site location and potential resource use over time in order to produce a model of prehistoric land use within the APE and its vicinity. Given the paucity of archaeological data from this portion of Delaware, it is anticipated that this research will provide a greater understanding of site patterning in the Chesapeake drainage, and Mid-Peninsular Drainage Divide physiographic province.

Historic Context

Background research will aid in the formulation of an appropriate historic context for the identification and interpretation of the historic period archaeological sites within the APE. The 1849 map of New Castle County by Rea and Price depicts a farmstead on the subject property associated with the name "W. Polk." Tentatively identified as the property of William Polk, the site is believed to be part of a 400-acre tract Polk acquired from one William Rumsey and later bequeathed to Elizabeth Polk Cochran in the early 1850s. Elizabeth's husband John P. Cochran served as Delaware's governor between 1875 and 1879. The Louis Berger Group previously excavated another property occupied by the Cochran family, the McKean/Cochran site near Odessa. The possibility of familial relationships between Elizabeth Polk Cochran and Robert Cochran, the wealthy farmer owning the McKean/Cochran site in the early nineteenth century may be investigated.

The Archaeological Predictive Model report by A.D. Marble & Company shows an area of high probability for historic archaeological resources at the northern border of the APE. Whether this area of historic sensitivity represents the "W. Polk" farmstead or another resource is unknown and will be examined via a thorough review of historic maps.

Site-specific research for this project will produce a detailed picture of the ownership and use of the tract from the late seventeenth century to the present day, with a special emphasis on identifying the age, make-up, and history of the farmstead depicted on the 1849 Rea and Price map. Work during this stage will include a thorough review of all relevant surveys, maps, deeds, probate records, tax assessments, population and agriculture census records, and Orphan's Court records. Because ownership may have passed through several generations of one or more families, work during this stage may include the creation of one or more genealogies for the Polks, the Cochrans, and other families, as needed. Genealogical work will be based on both published and electronic family histories, as well as United States population census manuscript returns; deeds; birth and marriage records; church documents; and probate records. Genealogies may also help to identify possible unrecorded occupants of the property, including children, women, enslaved Africans, and laborers. If feasible, this stage may also investigate the location of the houses and the history of church building and cemetery construction in the vicinity, as a benchmark for determining the possible presence and age of family burial plots on the subject property following the method outlined by Heite and Blume (1992, 1998:30). The research findings will be summarized and presented at a meeting to DelDOT and DESHPO representatives.

Primary source research for this project will be carried out at some or all of the following repositories:

Delaware State Archives, Hall of Records, Dover

- New Castle County Orphan's Court Records, 1680-1850
- New Castle County Wills, 1680-1925
- New Castle County Deeds, 1680-1831
- New Castle County Tax Assessments, 1803-04; 1816-1817
- New Castle County Surveyor General Records
- New Castle County Warrants and Surveys
- US Population and Agriculture Census Records, 1800-1930

New Castle County Administration Offices, Wilmington

- New Castle County Recorder of Deeds, 1831-present
- New Castle County Recorder of Wills, 1925-present

Historical Society of Delaware, Wilmington
Special Collections, Morris Library, University of Delaware, Newark
University of Delaware Center for Historic Architecture and Design
Middletown Historical Society, Middletown
Maryland State Archives, Annapolis
Historical Society of Pennsylvania, Philadelphia
Pennsylvania State Archives, Harrisburg

Task 2: Geomorphological Assessment

RGA has selected Hayes & Monaghan, Geoarchaeologists, to perform a geomorphological assessment of the APE. This will include background research, fieldwork and report preparation. Fieldwork will include an examination of the entire APE to note areas of disturbance and variation in topographic settings. Hand excavated augur testing will be performed in the APE. A pedestrian reconnaissance of the APE will be completed. Approximately three days of geomorphological fieldwork will be completed. RGA will also provide Hayes & Monaghan with soils data from a geotechnical investigation in the APE when it is received from RKK Engineers. Hayes & Monaghan's revised scope of work and cost proposal, dated May 6, 2008, is included.

The objectives of the geomorphological assessment include:

- Define the landform, its history, and context within the Sandy Branch and Bohemia Rivers and the Chesapeake Bay drainage, and the High Coastal Plain/Drainage Divide Physiographic Province
- Understand Holocene formation processes within the APE
- Assist in better defining the archaeological potential of the APE and representative soil profiles across the APE
- Determine the potential for deeply buried deposits and the likely depth of cultural deposits as an aid for the Phase I testing strategy

Brief highlights of the research with soil profiles and other maps will be produced post-fieldwork and presented at a meeting with DelDOT. The results of the geomorphological study will be used to determine an appropriate Phase I survey strategy. Specifically, the results should determine whether pedestrian survey, shovel test pit or unit excavation, or a combination of methods, would be necessary to identify prehistoric archaeological resources in the APE. A complete geomorphology report will be produced and appended to the Phase I archaeological survey report.

Task 3: Pamphlet/Brochure

This task involves the completion of a brochure that will introduce the U.S. Route 301 project and associated archaeological requirements to the general public. Text will briefly discuss the U.S. Route 301 project and its purpose, associated Federal cultural resource regulations, and the types of significant archaeological resources that could be identified while the selected alternative is investigated. It is anticipated that this task will fulfill a portion of the public outreach stipulation (i.e. Stipulation 1.C.) outlined in the MOA.

The following items related to the U.S. Route 301 brochure will be completed:

- Design, selection and preparation of graphics and text for an 8.5-inch by 11-inch draft color brochure for submission to DelDOT
- Printing of 5,000 final copies of the brochure

RGA will submit a draft brochure to DelDOT for review and comment. After revisions have been inserted, RGA will submit a final brochure to DelDOT for final review. Upon DelDOT's approval, an order will be placed with McClafferty Printing Co., Wilmington, Delaware, for 5,000 copies of the brochure. It is assumed that DelDOT will distribute the brochures to interested parties, place them in various public areas across the state, and on their website.

DELIVERABLES

As discussed, RGA will present the results of the background research and geomorphological assessment at a meeting with DelDOT and DESHPO. For the meeting, RGA will prepare a brief one to two page summary of the site-specific historical research, supplemental graphics including historic maps, as needed, a table showing the results of deed and title work, and site file research at the DESHPO and MHT (Task 1). Hayes & Monaghan will prepare a brief letter summarizing geomorphology results and indicating areas of potential for deeply buried deposits and site formation processes (Task 2). As a result of the background research and geomorphological assessment, RGA will develop and present potential field strategies for a Phase I archaeological survey at the meeting with DelDOT and DE SHPO. Based on the results of the meeting, RGA will prepare a research design and cost proposal for a Phase I archaeological survey.

As indicated, RGA will deliver a draft brochure for review by DelDOT (Task 3).

SCHEDULE

RGA will begin the project immediately upon the notice to proceed from DelDOT. It is anticipated that a meeting will be scheduled approximately 6-8 weeks following the notice to proceed. RGA will begin work on background research immediately. Based on Hayes & Monaghan's work schedule, it is anticipated that the geomorphology study will take place in late May or June of 2008. The brochure will be completed in 4-5 weeks from the notice to proceed.

COMPLETED TASKS

RGA has completed some tasks for the U.S. Route 301, Levels Road Stormwater Management Facility project. A cost for this work is presented on a spreadsheet.

Tasks completed include:

- Preparation and production of an APE map for submission to DelDOT
- Preparations for a meeting with DelDOT and DESHPO including a review of pertinent documentation on the Route 301 project. The documentation, including the Archaeological Predictive Model report by A.D. Marble & Company, was closely reviewed to facilitate discussions about a Phase I fieldwork strategy for the APE

Attendance at a meeting with DelDOT and DESHPO on March 5, 2008

We look forward to starting the outlined tasks and working closely with DelDOT as a Parent Agreement Firm. Please contact me at 609-655-0692, ext. 309, or Richard Grubb at ext. 320 with any comments or questions regarding the proposal.

Very truly yours,



Paul J. McEachen, M.A.
Principal Senior Archaeologist
PJM:cn

Enc.



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August 5, 2009

David S. Clarke
DelDOT Archaeologist
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Re: Task 8, Parent Agreement 1417
Revised Technical and Cost Proposal
Phase IB Archaeological Survey
U.S. Route 301, Levels Road Mitigation Site
St. Georges Hundred, New Castle County, Delaware

Dear Mr. Clarke:

Richard Grubb & Associates (RGA) is pleased to present this revised technical and cost proposal for Phase IB archaeological survey work at the proposed U.S. Route 301, Levels Road Mitigation Site in St. Georges Hundred, New Castle County, Delaware. This proposal incorporates review comments presented in an e-mail dated June 10, 2009, and from a telephone conference of June 15, 2009. The Delaware Department of Transportation (DelDOT) proposes to use an approximately 125-acre tract of farmland west of Middletown as a borrow source for the U.S. Route 301 project, and subsequently as a detention basin. The Area of Potential Effects (APE) includes all portions of the 124.86-acre tract. The APE lies near the western limits of the preferred U.S. Route 301, Green Alternative (North Option) in Delaware. U.S. Route 301 is a proposed four-lane toll highway that will extend approximately 17.5 miles from the Maryland-Delaware border to State Route (SR) 1, just south of the SR 1 Bridge over the Chesapeake and Delaware Canal. This new corridor will facilitate traffic movements between Maryland and SR 896 and SR Route 1 south of the Chesapeake and Delaware Canal.

The Final Environmental Impact Statement (FEIS) for the U.S. Route 301 project was completed in December of 2007, and a Record of Decision (ROD) was issued by the Federal Highway Administration (FHWA) on April 30, 2008. Consultation with the FHWA and Delaware State Historic Preservation Office (DESHPO) has taken place, and a Memorandum of Agreement (MOA) was developed between the FHWA, DelDOT, DESHPO, and the Maryland Historical Trust (executed in November and December of 2007). Stipulation 1.A. of the MOA requires the completion of Identification/Evaluation-level (i.e. Phase I/II) archaeological surveys to determine if archaeological historic properties (i.e. National Register eligible) are present in the APE for the U.S. Route 301 project.

All work will be performed in accordance with the Secretary of the Interior's *Standards and Guidelines for Archaeology and Historic Preservation* and the *Guidelines for Architectural and Archaeological Surveys in Delaware* (1993) issued by the DESHPO. Since federal funds are being used, this work will be completed under Section 106 of the National Historic Preservation Act and its regulations (36 CFR 800) and in accordance with the MOA. Should human remains be

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identified, the provisions of the Delaware Unmarked Human Remains Act (7DE code Chapter 54, 66 Del. Laws, c.38§ 1; 75 Del. Laws, c. 153, §§4, 5) will be followed. This is further discussed within the section on archaeological fieldwork.

RGA is committed to meeting or exceeding DelDOT's Disadvantaged Business Enterprise (DBE) goals for the project. DelDOT's current list of DBE firms has been reviewed. RGA plans on addressing the DBE goals for this project by utilizing the services of AB Consultants, Inc., a DBE surveying firm (Certification No. 757), during the project. As part of Task 2 (Parent Agreement 1417), RGA performed Phase IA-level background research, and a pedestrian reconnaissance and geomorphological assessment of the APE. The results of this work were presented at a meeting with DelDOT and DESHPO on January 7, 2009.

A brief summary of Phase IA results followed by the Scope of Work, Deliverables, and Schedule for the Phase IB archaeological survey work are presented below.

PHASE IA RESULTS

Background research performed during the Phase IA archaeological survey included consultation with individuals knowledgeable about the APE and vicinity, research on recorded archaeological sites, the review of cultural resource management reports, and site specific land use history of the APE from the seventeenth century to the present, as well as a review of models for archaeological potential within the Mid-Peninsular Drainage Divide portion of the High Coastal Plain. The results of this work indicated that there were no registered archaeological sites within the APE. However, seven sites lay within a two-mile radius and 45 sites were documented within the Bohemia River drainage. Historical research suggests that an eighteenth to nineteenth century tenant house attributed to "W. Polk", and depicted on the 1849 Map of New Castle County by Rea and Price, was present in the northern portion of the APE until the mid-nineteenth century. This is in approximately the same location depicted by A.D. Marble & Company on a map indicating an area of high sensitivity for historic resources in the APE. In addition, a non-extant portion of an early road (possibly Choptank Road) depicted on the William Faden 1777 map may have bisected the eastern portion of the APE during the eighteenth century.

Background research indicates that there is a high potential for historic resources in proximity to documented historic structures as described above and a moderate potential within 500 feet of historic roads. Since the exact location of the "W. Polk" tenant house is not known, upland areas near the suspected location of the structure were considered to have a high potential for historic resources. Areas within 200 feet of the non-extant Choptank Road and the farm lane crossroads within the APE were considered to have high potential for historic resources. Portions of the APE within 500 feet of the non-extant Choptank Road were considered to have moderate potential for historic resources. The remainder of the upland portion of the APE was considered to have low potential for historic resources. Areas of high, moderate and low sensitivity for historic resources are depicted on the attached figures.

The results of the geomorphological investigation by Hayes & Monaghan indicate that the majority of the APE is situated on an ancient eroding upland where the underlying Pleistocene Columbia Formation is exposed or combined with the Ap-horizon (plowzone). Field reconnaissance indicated that disturbances are minimal and restricted to agricultural uses and test borings. The upland is surrounded on three sides by two low order tributaries of the Great Bohemia Creek that have deeply incised and reworked their floodplains. The floodplain portions of the APE were considered to have a very low potential for archaeological resources. The geomorphological investigation suggests potential archaeological deposits will be shallow and located within the Ap-horizon (plowzone) and upper portions of the B-horizon. This is supported by the identification of a quartz biface on the surface in Area 2 during the geomorphological investigation. Areas of high, moderate and low sensitivity for prehistoric resources are indicated on the attached figures.

SCOPE OF WORK

The Phase IB scope of work includes the following:

Task 1: Additional Background Research

Task 2: Archaeological Fieldwork

Task 3: Artifact Processing/Cataloguing/Analysis

Task 4: Report Preparation

Task 5: Certificate of Appreciation

A discussion of the work proposed under each task is presented below.

Task 1: Additional Background Research

In addition to the extensive research performed for the Phase IA archaeological survey, limited additional background research will include completing the title search (1890s to present). This additional research will supplement that already completed for Levels Road.

If archaeological resources are identified, additional consultation with knowledgeable individuals may be undertaken. Individuals who may be consulted include Dr. Wade Catts, Dennis Curry, Dr. Jay Custer, Dr. Lu Ann DeCunzo, Carol Ebright, Charles Fithian, Daniel Griffith, Darrin Lowery, Craig Lukezic, Dr. David Orr, Dr. John Seidel, and Dr. R. Michael Stewart, among others.

Task 2: Archaeological Fieldwork

This scope of work for Phase IB archaeological fieldwork is based on the results of background research, field reconnaissance, and a geomorphological investigation conducted during the Phase IA archaeological survey. The background research indicates that while there are no documented prehistoric resources within the APE, environmental factors suggest that there is high potential for prehistoric resources within portions of the APE. High potential for prehistoric resources is likely to be found on upland locations within 150 meters (492 feet) of water sources, moderate potential between 150 meters and 300 meters (492 to 984 feet), and low potential in areas greater than 300 meters from water sources. In addition, micro-drainage divide settings are considered to have potential for resources.

Pedestrian survey of plowed and disked fields is considered the best method for locating resources in the agricultural portions of the APE. Shovel testing is proposed for the wooded field margins and a gently sloping wooded area at the northeastern end of the APE. Small springs or tributaries were formerly located within the southern and northern portions of the APE which have subsequently been filled in by agricultural activities. Shovel testing and excavation units placed surrounding these features could provide additional evidence of prehistoric uses.

Figures 1 and 2 depict the combined sensitivity for historic and prehistoric resources (see attached). Figure 1 is keyed to Table 1 (see attached) that indicates the sensitivity and a proposed testing strategy for each numbered area. Figures 3 and 4 show the sensitivity for prehistoric and historic resources (see attached). The field strategy for the Phase I archaeological survey will be stratified and will consist of a pedestrian survey, shovel testing, excavation units, and a metal detector survey (see Table 1).

Pedestrian Survey

The agricultural portions of the APE will be plowed and disked in areas of moderate to high potential for prehistoric and historic resources. The fields will be examined by a team of RGA archaeologists walking at three-meter intervals after the field has been sufficiently rain-washed. At least two passes over the field are planned; some areas may be examined further. Area 5, considered to have moderate potential for prehistoric resources, will be closely examined by

the Principal Investigator and areas of micro-topography and other sensitive locations will be shovel tested as needed. Area 5 will not be plowed and disked.

During the pedestrian survey, both historic and prehistoric artifact locations will be marked with pin flags. The locations of prehistoric and historic artifacts will be point provenienced and mapped by AB Consultants, Inc. using a Trimble R6 RTK Global Positioning System (GPS) Receiver capable of centimeter accuracy. Artifact locations will be recorded via GPS, and distribution maps created. Each prehistoric artifact will be assigned a number, collected and bagged individually. Prehistoric artifacts will be designated P and numbered consecutively (e.g., P001, P002, etc.). Historic artifacts will be assigned a number with an H designation, and also numbered consecutively (e.g., H001, H002, etc.). Modern debris, such as recent bottle glass, aluminum cans, foil, paper or plastic food wrapper, plastic, and cigarette parts, will be noted but not retained. Heating by-products, such as coal and coal ash, will be noted and discarded. Preliminary site limits and artifact distributions will be depicted on project base maps.

Shovel Test Pits

Areas near relict drainages within the agricultural fields, wooded areas, including the field margins and northeast portion of the APE, will be shovel tested with one transect of tests at 15-meter intervals. Portions of Area 7 will be tested with a 7.5 meter sampling interval (see Table 1). Judgmental tests will be placed in the vicinity of surface finds, positive tests, artifact concentrations and other archaeologically sensitive locations at the discretion of the Principal Investigator and in consultation with DelDOT. The testing interval for the judgmental tests will be at the discretion of the Principal Investigator. The goal of the judgmental tests is to gain additional data on the distribution and nature of artifact concentrations, or to determine if potentially significant archaeological resources are present. Approximately 338 STPs are proposed. The number and distribution of shovel test pits (STPs) across the APE is presented in Table 1.

Shovel test pits will measure 50 centimeters (cm) in diameter and will be excavated using round-bladed shovels into the upper portions of subsoil below the level of cultural materials. All STPs will be excavated into sterile levels or at least 60 cm below ground surface (BGS). Soils removed from the STPs will be separated by stratum and screened for artifacts through quarter-inch mesh hardware cloth. Shovel test pit locations will be plotted on a map of existing conditions. Descriptions of each stratum, including Munsell color, texture, sediments, and presence or absence of cultural material, will be recorded on standardized forms. Shovel test pits will be immediately backfilled upon completion to restore the ground to its natural contours. Representative photographs of all field activities will be taken using digital photography.

Excavation Units

Excavation unit (EU) placement will be guided by the results of the pedestrian survey and metal detector survey, and STP excavation. Excavation units will be placed in areas of high artifact concentrations, feature locations, and areas requiring more investigation. Approximately 16 EUs are proposed. Excavation units will measure one meter by one meter in size and will extend through the plowzone and into the upper portions of the subsoil into sterile levels or at least 60 cm BGS. These will be excavated using square and round bladed shovels. The plowzone will be removed as a natural stratum and B-horizon strata will be excavated in 10 cm levels for control. Soils removed from EUs will be separated by level and/or stratum and screened for artifacts through quarter-inch mesh hardware cloth. Descriptions of each stratum, including Munsell color, texture, sediments, and presence or absence of cultural material, will be recorded on standardized forms. Profiles will be drawn of representative EUs or ones with features. If encountered, cultural features will be explored within the confines of the EU. Exposed portions of the features will be recorded (i.e. plan and profile drawings). The features will then be documented, covered with tarps and backfilled in consultation with DelDOT. Each feature location will be mapped using GPS. Excavation will continue until two culturally sterile levels of subsoil have been encountered or to 60 cm BGS. To ensure that the base of cultural deposits has been reached, an STP may be dug at the bottom of each EU. Excavation unit profiles will be documented through digital photography and scaled line drawings. All other EUs will be immediately backfilled upon completion. Excavation unit locations will be plotted on a map of existing conditions.

Metal Detector Survey

The metal detector survey will be performed by Battlefield Restoration and Volunteer Organization (BRAVO) and will consist of a thorough coverage of areas of high potential for historic resources, including the potential tenant house area. Metal detector survey is an accepted methodology on historic sites and areas with high potential for historic sites, supplementing the results of the pedestrian survey and STPs. This method has been successful for locating early historic and contact period sites in shallow deposits, where metal objects, such as tools, brass artifacts and points, nails, coins, and ammunition, might be present that could indicate the presence of a significant historic resource (see attached references; Conner and Scott 1998). In accordance with established methodologies for metal detecting, several models of metal detectors are used by BRAVO's experienced personnel (Sivilich 1995, 1996, 2005). RGA has successfully used metal detector surveys conducted by BRAVO to locate early historic sites. Examples are the Millhurst Road site in Monmouth County, New Jersey, where two brass Contact period projectile points, two brass unidentified objects, and concentrations of musket balls at the Monmouth Battlefield Historic District were located, and the Thompson Park site in Middlesex County, New Jersey, where the metal detector survey aided in the identification of an eighteenth-century site (e.g., Richard Grubb & Associates, Inc. 2006a, 2006b, 2007a, 2007b; Sivilich 1995, 1996, 2005).

Locations positive for pre-twentieth century metal artifacts will be recorded using a total station and their location indicated on project maps. Modern metal debris, such as aluminum cans, foil, bottle caps, modern tractor and automobile parts, will not be retained. Retained artifacts will be catalogued by BRAVO, with assistance from RGA as needed. BRAVO's report on their activities and results will be appended to the Phase I archaeological survey report. Upon completion and review of BRAVO's report (by RGA), the artifacts will be transferred to RGA and temporarily stored at RGA's Cranbury, New Jersey archaeological laboratory. These artifacts will be curated and stored with the rest of the materials recovered during the Phase IB survey.

Other Fieldwork Related Items

Surveying services to accurately record artifact, STP, EU, and site locations will be performed by AB Consultants, Inc. (ABC, DBE Certification No. 757), a multi disciplinary engineering and construction firm located in Baltimore, Maryland. Currently AB Consultants is performing survey field work and CADD processing, according to DelDOT MicroStation XM CADD standards, on Sections 1 and 2 of the U.S. Route 301 project (on Section 1 as subconsultant to Whitman, Requardt & Associates and on Section 2 as a subconsultant to AECOM).

In the event that human burials and/or skeletal remains are identified all archaeological survey work in the area of the burials will cease and DelDOT Archaeologist David Clarke (302-760-2271) will be immediately notified. It is assumed that Mr. Clarke will contact the DESHPO. Should Mr. Clarke be unavailable, Kevin Cunningham of DelDOT (302-760-2125) will be contacted. If Mr. Clarke or Mr. Cunningham cannot be reached within one hour of the identification of human burial/skeletal remains, RGA will contact Gwenyth Davis (302-736-7410) of the DESHPO. All archaeological survey work at and near the burial location will cease until the DESHPO, in consultation with a medical examiner and DelDOT, has approved work resumption. A separate scope of work and cost proposal will be required to complete requirements in accordance with the protocols outlined in Delaware's Unmarked Human Remains Law (7 DE Code, Chapter 54, Subchapter II).

It is anticipated that the results of this Phase IB archaeological survey and the Phase IB survey completed in the adjacent portion of the U.S. Route 301 mainline will provide meaningful information on prehistoric and historic site distributions, locations and land use patterns in a portion of New Castle County that has seen relatively little archaeological survey. The survey methodology proposed herein is similar to that proposed for the U.S. Route 301 Section 3 mainline. As a result, the validity of predictive models, such as those presented by Jay Custer and A.D. Marble & Company, will be tested.

While the fieldwork is in progress, RGA will provide brief weekly updates to DelDOT in the form of emails describing progress and notable finds.

Task 3: Artifact Processing/Cataloguing/Analysis

This proposal assumes that no more than 2,000 artifacts will be recovered during the Phase IB archaeological survey. If the survey yields more than 2,000 artifacts, a new cost proposal may be prepared after consultation with DelDOT. Modern artifacts as described above will not be retained but will be noted in the field and discarded. Recovered artifacts will be placed into re-sealable polyethylene bags with accompanying tags that list the appropriate provenience information. All artifacts will be taken to an off-site laboratory at the office of RGA in Cranbury, New Jersey. All retained artifacts will be washed and processed. Artifacts will then be sorted by material/artifact type and placed into a clean 4mm-thick re-sealable polyethylene bag. All artifacts recovered from a single provenience will be bagged together with a tag listing the appropriate provenience information.

Artifacts will be cataloged according to provenience. Historic artifacts will be cataloged according to functional group, material, class, and type. When appropriate, a detailed description of artifacts will be made. Wherever possible, a temporal designation will be assigned to artifacts with known manufacture dates. Prehistoric artifacts will be cataloged by provenience, then by artifact type and material. Lithic and ceramic data will be recorded in detail, including descriptions, size, and weight. Where appropriate, data from lithic analysis (e.g., length, width, thickness, platform, flake termination, cortex, and heat treatment) will be recorded.

Artifact processing, marking, containerization, and curation of project documents will be performed according to the *Guidelines and Standards for the Curation of Archaeological Collections* prepared by the Delaware Division of Historical and Cultural Affairs, Delaware State Museum. Separate artifact catalogs will be prepared for historic and prehistoric artifacts. Artifact catalogs will be included as appendices in the Phase IB archaeological survey report.

All artifacts recovered and project documents will be temporarily stored at the office of RGA in Cranbury, New Jersey. Upon project completion and in consultation with DelDOT and DESHPO, the artifacts and associated documentation will be packaged in the appropriate Hollinger boxes and delivered for curation to the Delaware State Museum in Dover, Delaware.

Task 4: Report Preparation

Reporting will be conducted in two stages. The first will consist of a management summary. The second will entail the completion of a Phase I archaeological survey report. The scope of work for each task is presented below.

Management Summary

The management summary will consist of a brief three to five page written synopsis of the results of the Phase IB archaeological survey, and any recommendations for a Phase II archaeological survey. Base maps will show the location of artifact finds, STPs and EUs and whether cultural material was present or absent. The location of identified cultural features will be depicted as well. The management summary is intended for DelDOT planning purposes.

Phase I Report

RGA will present the results of the Phase IB archaeological survey in a comprehensive Phase I archaeological survey report. The report will be comprised of several chapters and include a title page, abstract, introduction, background research, research design and methods, description of fieldwork results, interpretations and conclusions, recommendations, bibliography, and appendices. This report will include the results of background research previously conducted for the Levels Road Phase IA survey, supplemental background research (Task 1), environmental and geomorphological setting, Phase IB archaeological fieldwork, including metal detector survey (Task 2), artifact cataloguing and analysis (Task 3), and management recommendations for further archaeological survey, if needed. Detailed recommendations for any Phase II surveys will be presented. The geomorphological survey

report by Hayes & Monaghan will be appended to the report. A full report is assumed; it is not anticipated that a DESHPO Archaeology Survey Report Form will be sufficient.

Task 5: Certificate of Appreciation

RGA will prepare a Certificate of Appreciation in consultation with DelDOT for dissemination to property owners and others who have aided the project. The certificate draft will be submitted to DelDOT and FHWA for their approval. RGA assumes that two edits will be necessary to complete the final version for printing. RGA will print 100 copies on cardstock and mail the final certificates to DelDOT.

DELIVERABLES

As indicated, RGA will present the results of the Phase IB archaeological survey in a management summary and detailed report (Task 4). Three (3) draft copies of each document will be provided to DelDOT. One (1) set of revisions from DelDOT and DESHPO is included in this scope of work. Once the review comments have been implemented, copies of the final management summary and report will be produced. RGA will provide five (5) bound final report copies to DelDOT in hard copy and two (2) CDs with electronic copies. RGA will produce one-hundred (100) copies of the Certificate of Appreciation.

MEETINGS

This proposal assumes one (1) meeting will be held in the field with DelDOT/DESHPO, attended by the Senior Archaeologist and Principal Senior Archaeologist.

SCHEDULE

RGA will begin the project immediately upon the notice to proceed from DelDOT. The farmer (Dennis Clay) will remove existing crops and plow and disk the fields as field conditions allow. DelDOT will facilitate the fieldwork by providing funds to reimburse the farmer for his crops. An estimate of the cost of the crops has been prepared and is included in the budget as a line item.

- Weeks 1-3 - Fieldwork planning, consultation with the farmer for crop removal and plowing/disking agricultural fields. Weather permitting, it is anticipated that this task could take approximately three weeks.
- Weeks 4-11 - Phase IB archaeological fieldwork and metal detector survey; perform supplemental deed/title research. A draft copy of the Certificate of Appreciation will be submitted to DelDOT (Week 4).
- Weeks 12-20 - Artifact Processing/Cataloguing/Analysis/Curation.
- Weeks 21-23 - Preparation and submission of a draft Management Summary
- Weeks 24-28 - Report writing and graphics production; Submission of draft Phase I archaeological survey report by the end of Week 28.
- Weeks 28-32 - DelDOT and DESHPO review.
- Weeks 33-34 - Report revisions and submission of final Phase I archaeological survey report.

It is estimated that the draft report will be submitted in approximately seven (7) months from the notice to proceed.

COMPLETED TASKS

Two previously completed tasks have been included in this scope of work and budget. These tasks were discussed in a phone conversation with David Clarke on March 3, 2009.

1. Additional Work, U.S. Route 301 Pamphlet

RGA completed additional work for U.S. Route 301, Levels Road Mitigation Site project Task 3: Pamphlet/Brochure. The extra work included several edits and/or revisions to the draft pamphlet requested by the FHWA. A cost for this work is presented in an attached cost spreadsheet (Completed Task 1).

2. APE Map and Meeting, Levels Road Mitigation Site

RGA prepared an APE map of the Levels Road Mitigation Site that was submitted to DelDOT in February of 2008. RGA representatives (Paul McEachen, Ilene Grossman-Bailey and Michael Young) also attended a meeting on March 5, 2008 at the DESHPO to discuss testing strategies for the Levels Road project. Preparations for a meeting with DelDOT and DESHPO were also necessary, including a review of pertinent documentation on the U.S. Route 301 project. The documentation, including the Archaeological Predictive Model report by A.D. Marble & Company, was closely reviewed to facilitate discussions about a Phase I fieldwork strategy for the APE. A cost for this work is presented in an attached cost spreadsheet (Completed Task 2).

We look forward to starting the outlined tasks. The cost of each task and completed tasks are presented in the attached spreadsheets.

Please contact me at 609-655-0692, ext. 309, or Richard Grubb at ext. 320 with any comments or questions regarding the proposal.

Very truly yours,



Paul J. McEachen, M.A.
Principal Senior Archaeologist

PJM: cd

Enclosures

REFERENCES

Connor, Melissa and Douglas D. Scott

1998 Metal Detector Use in Archaeology: An Introduction. *Historical Archaeology* 32(4):76-85.

Richard Grubb & Associates, Inc.

2006a Phase I and II Archaeological Survey and Assessment of Impacts to the Monmouth Battlefield, The Village at Manalapan, Highway 33 and Millhurst Road (Block 66, Lots 8 and 25.01), Manalapan Township, Monmouth County, New Jersey. On file, Historic Preservation Office, Trenton, New Jersey.

2006b Phase II Archaeological Survey, Four Seasons at Manalapan- East Parcel, Woodward Road (Block 66, Lots 7.01 and 9), Manalapan Township, Monmouth County, New Jersey. On file, Historic Preservation Office, Trenton, New Jersey.

2007a Phase I Archaeological Survey, Monroe Township High School, Block 59, Part of Lot 1.01, Monroe Township, Middlesex County, New Jersey. On file, Historic Preservation Office, Trenton, New Jersey.

2007b Phase II Archaeological Survey, Monroe Township High School, Block 59, Part of Lot 1.01, Monroe Township, Middlesex County, New Jersey. On file, Historic Preservation Office, Trenton, New Jersey.

Sivilich, Daniel M.

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2005 Evolution of Macro-Archaeology of the Battle of Monmouth - 1778 American Revolutionary War. *Battlefields Annual Review*, Pen and Sword Books LTD, South Yorkshire, Great Britain, pp. 72 - 85.

