

IDENTIFICATION OF 18TH CENTURY ROADS

A DELAWARE DEPARTMENT OF TRANSPORTATION CASE STUDY

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The Route 301 Project in Delaware is a rare opportunity to look into the past and identify transportation routes across the state from the 17th and 18th centuries. The Delaware Department of Transportation (DelDOT) is in the throes of its largest public works project in over 20 years. DelDOT will be constructing 17 miles of new grade separated highway across the state to move traffic safely and efficiently from Maryland's Route 301 onto the existing Delaware Route 1 corridor. Background research and archaeological survey are currently taking place along the project corridor; as a result numerous early historic roads have been identified. This paper will discuss these roads, and present a model using background research and archaeology to identify early historic roads and the archaeological sites associated with them.

Delaware located in-between the Chesapeake and Delaware Bays, has a long and storied past of transportation on both water and land. Some early evidence of historic roads in Delaware comes from the 1679 New Castle County Levy Court records, which state that the Kings road be made:

Clear of standing and living trees at least 10 foot broad; all stumps and shrubs to be close cut by ye ground; the trees mark yearly on boath sides; sufficient Bridges to be made & kept over all marshy, swampy and difficult, dirty places, & whatever else shall be thought more necessary in & about ye highways aforesd (Shcarf 1888).

Another early road developed was the Augustine Herrman Cart Road. Augustine Herrman was awarded his land grant in 1670, and shortly after wrote to William Beekman that:

I have been on the Bohemia River to visit my Colony and discovered at the same time that the best place, to carry on a trade between here and the South river. I am now at work, to encourage people to establish a village there, with which I trust a beginning, shall be made next winter and from there we shall be able to reach the Sandhoeck overland in half a day and also have, as it appears to me, a wagon-road. For the Minquaskill and the aforesaid Bohemia River run there within a league from each other, from where we shall in time have communication with each other by water, which may serve as encouragement to the inhabitants of New Netherlands (Fernow 1877).

Both these statements highlight the nature of historic roads in Delaware in the late 17th century. These and other early historic cart roads in Delaware, Maryland, and Pennsylvania, served as transportation routes between the Chesapeake and Delaware's Bays, as well as in between Baltimore and Philadelphia. The economic trading culture between the two bays and cities lent itself to having the need for both overland transportation routes, as well as an efficient way to transport cargo, via water, around the Delmarva Peninsula.

In addition to early historic roads in Delaware, the C&D canal connecting the Chesapeake and Delaware Bays has always been a focal point for transportation in the region. In the mid to late 17th Century Augustine Herrman suggested that a canal be built between the two bays, but it was not until 1764 that an actual survey was done for a location of the canal (U. S. Army Corps of Engineers 2010). The issue of constructing a canal came up again in 1788 and 1802 (U. S. Army Corps of Engineers 2010). In 1804 construction began but was halted in 1806 due to lack of funds (U. S. Army Corps of Engineers 2010). In 1824 construction resumed and the canal was completed and open for business in 1829 (U. S. Army Corps of Engineers 2010). The canal's peak operating year was during the industrial revolution in 1872, when 1.3 million

tons of cargo was transported through the canal (U. S. Army Corps of Engineers 2010). The C & D canal is still in use today for shipping cargo, and recreational boating.

The Route 301 project corridor in Green (Delaware DataMil 2010).

The Route 301 project is federally funded, thus necessitating the need to comply with state and federal laws and regulations. The National Historic Preservation Act of 1966 (as amended) and the associated federal regulation 36 CFR 800 are the primary instruments for addressing archaeology on the project (ACHP 2010). An archaeological program has been

established, via a memorandum of agreement, between the Delaware Department of Transportation, The Delaware Division of Historical and Cultural Affairs, and the Federal Highway Administration. One of the first tasks of the Route 301 Archaeology Project was to complete a detailed history of the project corridor, as well as an archaeological predictive model. The Geographic Information System (GIS) based predictive model for the project concluded that there were areas of high archaeological potential for early historic resources, including roads, based on a number of environmental factors and the history of the project corridor (A.D. Marble & Company 2006).

The next step in the process was to begin the archaeology program's fieldwork with phase I archaeological survey of select portions of the project corridor, based on the results of the GIS predictive model and history of the project corridor. Phase I work is still ongoing but preliminary results have been very enlightening about early historic roads and the presence of archaeological sites within the project corridor (Archaeological and Historical Consultants 2010; Richard Grubb and Associates 2010a; Richard Grubb and Associates 2010b; Hunter Research Inc. 2010). During the background research phase of this project, numerous historic maps were compiled to determine the potential for archaeological resources in the project corridor (Archaeological and Historical Consultants 2009; Richard Grubb and Associates 2009a; Richard Grubb and Associates 2009b; Hunter Research Inc. 2009; Skelly and Loy Inc. 2009). One of the most influential early historic maps is the 1740 Manuscript Map from the Rumsey family papers. This map depicts numerous 18th century cart roads, in both Maryland and Delaware that cross the project corridor. The potential exists for some of the cart roads on this map to date back into the mid to late 17th century. Utilizing this map and detailed background research in conjunction with the GIS based predictive model has aided our archaeological survey to test areas with the

greatest likelihood of finding archaeological sites dating to the 17th and 18th centuries.

Archaeological sites from this time period are very rare in Delaware and across the Mid-Atlantic region, thus making this project all the more important to our collective knowledge about the culture of the American Colonies prior to being the United States of America.

1740 Manuscript Map Rumsey Family Papers
(Rumsey Family Papers, Library of Congress, Washington, D.C.)

Most of the Route 301 project corridor has been used as agricultural land for the past 300 years. This factor is a very important reason why the potential exists to have buried archaeological deposits beneath the plow zone soils that date to the 17th and 18th centuries. A plow zone is the upper layer of organic soil in an agricultural field that is continually reworked by the plow. In the Middle Atlantic region this is about 8-12 inches thick. Part of the Phase I survey was to test for early historic archaeology sites associated with early historic cart roads. Preliminary results from the Phase I survey indicate that there are intact archaeological sites associated with the cart roads depicted on the 1740 map (Hunter Research Inc. 2010). Preliminary dating results from these archaeology sites have them being occupied as early as the 17th century and some possible continuing into the 18th and 19th centuries (Hunter Research Inc. 2010). Preliminary results as to the function of these early historic archaeology sites, has them being domestic in nature (houses and outbuildings such as a possible smoke house) and trade related (wharfs / landings). The next step in the archaeological program is to finish Phase I archaeological survey work and begin Phase II work which will determine the boundaries of the identified archaeology sites from the Phase I survey, as well as their potential eligibility to be on the National Register of Historic Places. Also as part of the Phase II archaeological survey specific locations within the Route 301 project corridor will be tested to determine the presence or archaeological signature of these early cart roads.

When attempting to define the signature of early historic cart roads, one must look to the relationship of soil discoloration, texture, and other pedological and archaeological characteristics to properly define its presence as a cultural feature. Early historic cart roads were utilized by horse or oxen drawn carts / carriages that leave a distinct archaeological signature, which can be preserved intact for hundreds of years beneath a plow zone. The weight of horse or

oxen drawn carts would leave deep ruts in the road which, after the road was not longer in use, would be filled in due to natural fluvial and eolian geological processes. This is potentially the case with the early historic cart roads in the Route 301 project corridor. Once the early historic cart roads stopped being used, they filled in with soils and eventually became part of an agricultural landscape for farming over a 300 year period.



Comparative example of wagon wheel ruts from the historic Santa Fe Trail, (<http://www.legendsofkansas.com/places/Wagon%20Wheel%20Ruts.jpg> 2010).

As archaeological sites are being identified for the Route 301 project their locations are being mapped to determine their relationship to each other and early historic cart roads. To the surprise of many, the quantity and location of early historic archaeological sites identified to date have brought to light the importance of these early historic cart roads. It appears the

archaeological site locations are patterning along and adjacent to 17th and 18th century cart roads. This may not seem like a surprise to most people, without the knowledge that during this early historic time period most historic models do not have a large population base residing in the interior of central Delaware, but closer to population centers such as Dover and Wilmington. The current theory is that there is a larger number of people living along these early cart roads than previously thought, and that these individuals may not be accurately represented in population census data from that time period. That introduces questions: Who are these people? Why are they living there? Is their existence on the landscape similar or different to people residing in and near towns such as Odessa or Bohemia?

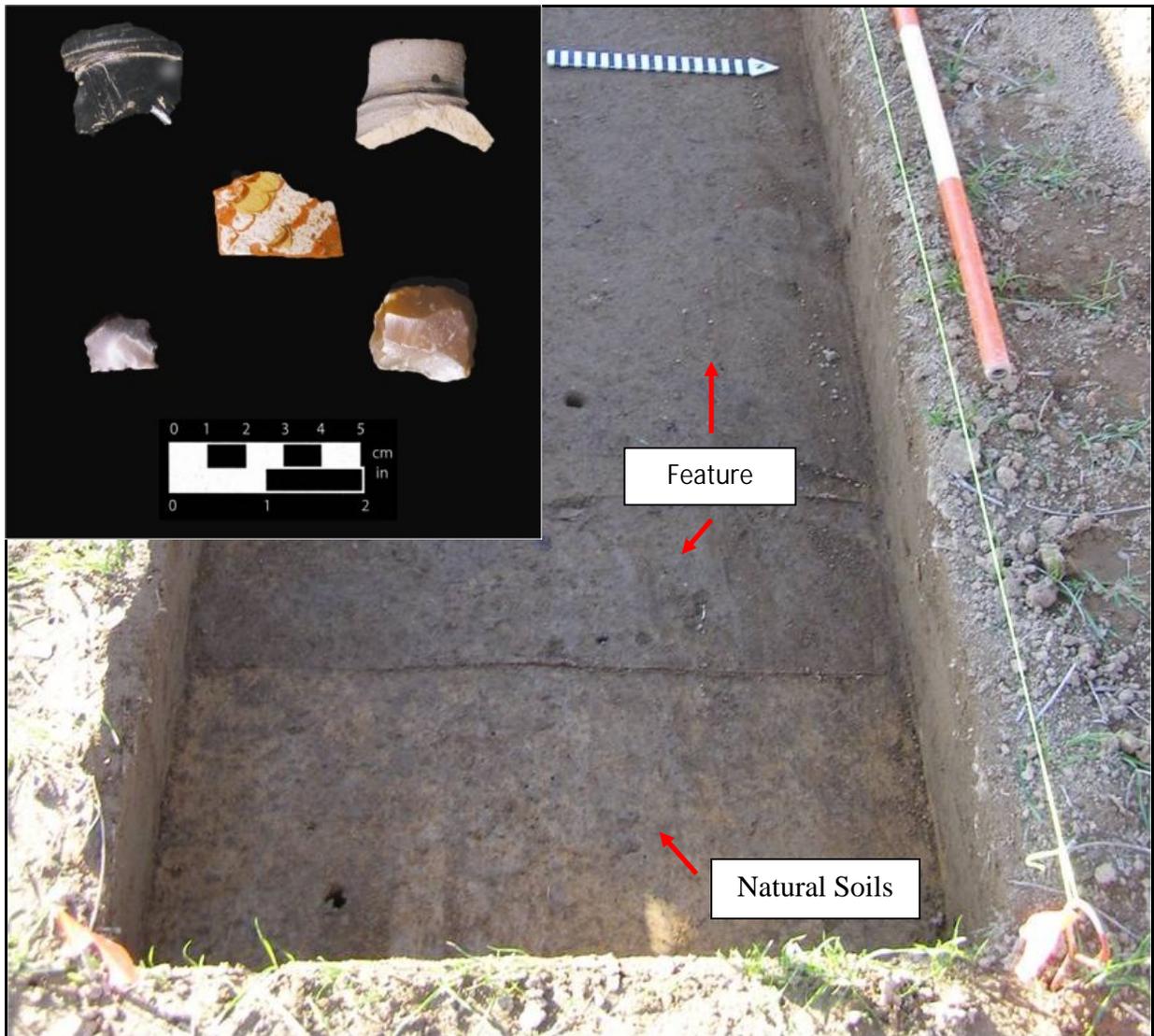
Another avenue of research currently being explored with the preliminary results of the Route 301 Archaeology Project Phase I survey data, is the ability to not only identify 17th and 18th century cart roads, but to ask the question about the function of these roads in relation to trade. During this time period water is still the main method to move cargo between the two bays; however, this was a very expensive endeavor. There is evidence via letters that goods are also traveling across the land between the two bays along the Augustine Herrman Cart Road, which would have been heavily taxed (Hunter Research Inc. 2009; Hunter Research Inc. 2010). Therefore, the potential exists for smuggling routes along other cart roads to transport goods between the bays and avoid the taxation (Hunter Research Inc. 2010; Liebeknecht 2010). This is one of many possible reasons why we are seeing numerous early historic archaeology sites situated adjacent to the early historic cart roads in the Route 301 project corridor. These theories shed an entire new set of potential research questions related to smuggling, trade, and the economic and social relationship between the populations at each end of the cart roads, (adjacent and near the bays and interior water courses where ships could get too) and the people residing

between the two bays that would be needed to help mover goods across the landscape possible on oxen or horse drawn sleds.

Preliminary map of Early Historic Archaeological sites in the Route 301 project corridor and their spatial relationship to each other and early historic cart roads (Liebeknecht 2010).

In addition to these research design questions, we are also realizing via this project, a breakthrough in our reliability to accurately predict where 17th and 18th century archaeology sites are located in central Delaware. The Route 301 project has provided us with a more accurate model for precisely identifying archaeological sites from the 17th and 18th centuries knowing how rare and valuable they are to the history of the United States. In the past, our ability to identify archaeology sites as being early historic from the 17th and 18th century and knowing where to find them usually did not happen until we stumbled on them during Archaeological Phase I survey. Once we “found them” we would go back for more detailed research to attempt to identify markers as to why the sites were situated where they were. For the Route 301 Project we have changed this reactive stance to more proactive approach via the GIS based predictive model and detailed background research being done prior to any excavation and at a level of effort rarely seen before in cultural resource management work. This provided us with enough data to more accurately decide where to do Archaeological Phase I survey. Our preliminary Phase I results are concluding that the heavy loaded up front effort is paying off via the amount of archaeological sites we are finding and what we already know about them from our detailed background research.

The Route 301 Archaeology Program took a holistic approach from the beginning of the project, which included a GIS based predictive model, detailed background research, and an intensive archaeological testing strategy, to identify archaeology sites. To date our efforts to heavy load the front end of this project have paid off in the areas that have completed Phase I archaeological survey.



Photograph of an Archaeological Feature from the Route 301 project, and 18th century artifacts from the project. Top left, dark olive green wine bottle closure with a hand applied string rim. Top right, grey-bodied salt-glazed stoneware jug rim sherd. Middle, slip combed red earthenware body sherd with clear lead glaze. Bottom right, pistol size grey gunflint. Bottom left, honey colored French musket flint (Hunter Research Inc. 2010).

This methodological approach to the Route 301 Archaeology Program, in the end, will show how “front loading” the work has saved the Federal Highway Administration money and time by having a more accurate preconceived notion of where archaeology sites are located via the detailed background research and GIS based predictive model. Numerous archaeology sites

have been identified and the potential exists for the Route 301 Archaeology Program to drastically change what we thought we knew in terms of predicting where early historic 17th and 18th century archaeology sites are located in central Delaware. Also, this project has the potential to alter our viewpoint about the economic and cultural landscape during this time period in the region and provide a better understanding of the nature, location, and function of early historic roads from the 17th and 18th century in Delaware. In the future, all of this new information from the Route 301 Archaeology Program will be synthesized to see how it may alter our collective knowledge about the history of Delaware, Maryland, and the entire mid-Atlantic region. These preliminary results are nothing less than astounding and will continue to fuel our research needs for this project as we move forward with additional Phase I work and subsequent Phase II and III archaeological survey work.

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