

## 2.0 HISTORY OF RESEARCH

### 2.1 Establishment of Area of Potential Effects

The Bridge 918 project Area of Potential Effects (APE) includes all areas in which potential ground disturbance related to the proposed construction may occur. FHWA/DelDOT and SHPO established the proposed project's APE to include those areas within the limits of construction (LOC), temporary construction easements (TCE)/permanent easements (PE), right of way (ROW), and/or wetland mitigation sites as well as adjacent or contiguous properties where visual effects occurred. Skelly and Loy was advised of the APE boundaries both verbally and on mapping provided by DelDOT. The entire APE, including the existing gate, bridge, and outlet, was considered during the cultural resources investigations and all of Skelly and Loy's cultural resources investigations were completed within the defined APE (Photographs 4, 5, 6, 7, and 8).

### 2.2 Wetland Mitigation Project

A Phase I archaeological survey was conducted in April and May 2005 for the proposed wetland mitigation area associated with the Bridge 918 project. The wetland mitigation area totaled 1.07 ha (2.65 ac) and was examined through plowing, controlled surface collection, and the excavation of 21 1.0 x 1.0 m (3.3 x 3.3 ft) test units.

A single pre-contact period archaeological site was discovered. Site 7S-C-97 contained pre-contact period ceramics (n=76), flaked lithic artifacts (n=147), and other lithic artifacts (n=2). Background research on the mill and the results of the wetland mitigation archaeological survey were documented in a Phase I survey report, which was submitted to DelDOT in June 2005 (Espenshade *et al.* 2005). The information in that report is not repeated here but is incorporated by reference when appropriate. Phase II archaeological testing was recommended for Site 7S-C-97, if it could not be avoided during the bridge replacement; however, through project redesign, FHWA/DelDOT avoided the site. Based on language included in the MOA, fencing was emplaced around the site to prevent inadvertent encroachment during construction. Since Site 7S-C-97 was to be avoided, no additional archaeological investigations were planned or executed. Curation of the Wetland Mitigation Phase I survey project materials was completed in August 7, 2007, with delivery of the materials to the Delaware State Museums.



*Photograph 4. View of west side of Bridge 918 at gate, facing north.*



*Photograph 5. View of gate and culvert, facing southeast.*



*Photograph 6. Close-up view of gate with water drawn down, facing north/northeast.*



*Photograph 7. View of east side of Bridge 918 at outflow, facing south/southeast.*



*Photograph 8. Close-up view of interior of culvert and outflow, facing west.*

### **2.3 Construction Monitoring and Archaeology at the Reynolds Mill Site (7S-C-99)**

Since archival, cartographic, and oral history research undertaken during the Wetland Mitigation Phase I survey demonstrated that mill remains were likely present beneath the existing bridge and spillway, FHWA/DeIDOT requested that Skelly and Loy personnel monitor the demolition and removal of the bridge and spillway and the installation of the new box culvert. Monitoring began on August 7, 2007 and continued until September 13, 2007. Monitoring of the bridge/spillway demolition revealed archaeological remains including a few artifacts, a portion of the mill's brick foundation, and a large wooden structure, most likely the remnants of a penstock/wheel pit that appears to also have served as the foundation/base for the ca. 1925 bridge/spillway structure. These remains were designated as the Reynolds Mill (7S-C-99) archaeological site. A site form is included as Appendix A. Recovered artifacts include over 200 fragments or objects made of ceramic, glass, metal, stone, or wood, the majority of which are large timbers or planks comprising the wood platform and frame structure. Objects include bottles, nails, timbers, planks, and millstones.

Due to the construction techniques, which had to be used during demolition of the ca. 1925 structures and emplacement of the new box culvert, the documentation of the archaeological resources located at the bridge site had to be done concurrently with the demolition/construction (Photographs 9, 10, 11, 12, 13, and 14). As per the MOA, after consultation with the SHPO, the archaeological remains were presumed to be significant and eligible for listing in the National Register of Historic Places (NRHP) for the purposes of Section 106. This allowed the archaeological research, which started as demolition monitoring, to expand into full-scale data recovery, as per the treatment plan, with no delays to the construction schedule.

Daily field notes discussing the monitoring/data recovery process were kept. All archaeological remains were identified during backhoe excavations associated with the bridge/spillway demolition. Once a feature was identified by the monitoring archaeologist, the mechanical excavations were halted and the archaeological crew finished exposing the feature *in situ* by hand excavation. In this manner, hand-excavation efforts were minimized, which kept the construction schedule moving, but also protected the resources from damage by the mechanical equipment. All archaeological remains, as well as general site depositional conditions, were described, photographed, and mapped. A theodolite and transit were used to map features at the site into three dimensions. Hand-drawn, detailed plan view and profile maps were also completed. Digital photography recorded structural details, as well as general



*Photograph 9. Building the coffer dam prior to removal of the bridge and culvert, facing west/southwest.*



*Photograph 10. Loading the dump truck with debris as demolition of the bridge and culvert continues, facing south.*



*Photograph 11. Finished coffer dam used to prevent water from inundating the project site and to manage water flow, facing west.*



*Photograph 12. Beginning demolition on bridge, roadway, and culvert, facing north.*



*Photograph 13. Demolition on culvert, facing east.*



*Photograph 14. Preparing to emplace the new culvert, facing north.*

work in progress. All artifacts of a size that were easily transportable and of interpretive importance were collected, and wood and brick samples were taken for both curation and analyses. Mechanical equipment was used to move many of the larger wood and millstone pieces. Two millstone fragments were collected by DeIDOT personnel and were temporarily stored at a DeIDOT facility until being turned over to Delaware State Museums.

In order to maintain the strict construction schedule and not incur undo delays, Skelly and Loy personnel coordinated and worked closely with the construction crew and Site Inspector during the bridge/spillway demolition in order to ensure that the archaeological materials remained intact and undamaged, and that they were documented, mapped, photographed, and removed from the construction area. Much of the credit for the successful completion of the monitoring is due to the willingness of the construction crew and Site Inspector to cooperate and understand the need for and importance of the archaeological research. Coordination with DeIDOT cultural resources personnel, who in turn coordinated with DeIDOT project managers, FHWA, and SHPO, was ongoing during the monitoring and excavation. Skelly and Loy provided oral information during fieldviews as well as electronic photographs and descriptions of the archaeological remains to DeIDOT personnel for their use in project coordination and decision making. In turn, DeIDOT cultural resource personnel communicated any project decisions to Skelly and Loy personnel to ensure that the archaeological investigations maximized the available information and were completed using acceptable techniques.

All of the monitoring/data recovery project materials (with the exception of two millstone fragments) were temporarily stored at Skelly and Loy's Pittsburgh area laboratory facility until completion of the project when the materials were turned over to the Delaware State Museums. Based on discussions and coordination with FHWA/DeIDOT and SHPO, and language included in the MOA, Skelly and Loy conducted the appropriate analyses and provided the agreed upon products to complete the Bridge 918 project cultural resources commitments.

These products included the Wetland Mitigation Phase I Archaeology report; this report discussing the results of the bridge construction monitoring and mill archaeology; a Sussex County Mill Database; and a wheeled cart to be used to store the millstone fragments. At the successful completion of the project, all of the project materials were transported to the Delaware State Museums for permanent curation.

## 2.4 Historic Documentary Research

The starting point for the research on the history of Reynolds Mill was the preparation of the *Phase I Archaeology Wetland Mitigation Area* report (Espenshade *et al.* 2005), which included a detailed history of the mill and a bibliography of sources used to create that history. Initial research was also provided in the draft final *Technical Report, Cultural Resources Investigations of the Milton Bypass, Sussex County, Delaware* (Auman *et al.* 2005).

Additional documentary sources examined for the research included Sussex County Tax Assessment records; historic deed, mortgage, and land plots; wills and probate inventories; records of the Sussex County Court of Common Pleas and the Orphans courts; Sussex County mill petitions and road papers; Sussex County records of “private accounts;” records associated with the Kent County Mutual Insurance Company; Delaware business directories; and various photographic collections. All of these records are available at the Delaware Public Archives in Dover whose staff was invaluable during the research.

Other sources included the manuscript card catalogue and family folders at the Historical Society of Delaware in Wilmington, the Milton Historical Society located in Milton, the Milton Public Library, and genealogical websites. By using these disparate sources and the pieces of information they revealed, a composite picture of the history of Reynolds Mill emerged.